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# The Global Talent Competitiveness Index 2019

*Entrepreneurial Talent and  
Global Competitiveness*



**Bruno Lanvin and Felipe Monteiro, Editors**





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**Bruno Lanvin**  
**Felipe Monteiro**  
Editors

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# Preface

The Global Talent Competitiveness Index (GTCI) report continues to gain in visibility around the world, and today has firmly established itself as a global benchmark for issues related to talent competitiveness and the future of work.

Now in its sixth year, this edition of the GTCI addresses the topic of *Entrepreneurial Talent and Global Competitiveness* and attempts to identify the ways in which large and small firms, nations, and cities can foster entrepreneurial talent in the era of digital transformation.

Rapid advances in digital technology are redefining our world. But digital transformation is not always well understood, and this lack has fostered a number of myths that are obscuring the path to realising its potential for value creation. Action will be needed to maximise benefits and help foster entrepreneurial talent because the future of work will be driven by new generations of workers, rapid and unpredictable technological changes, and competition for intellectual capital.

Over the last few decades, entrepreneurial talent has been seen as critical to the development of vibrant innovation ecosystems, bringing focus to small and medium-size enterprises, including start-ups and unicorns. The analyses contained in this report underline the view that entrepreneurial talent is equally important for larger and more mature organisations, both public and private. The various chapters point to recent developments in this still underexplored field (at least by economists) and suggest ways in which the global talent scene might be affected by the way entrepreneurial talent is being created, detected, attracted, and nurtured around the world. More importantly, such analyses and contextual content indicate ways in which action can be taken by firms, nations, and cities to make the best of a resource that is both scarce and widely distributed.

The GTCI model went through some incremental changes this year. Although the number and type of variables have stayed the same, a few have been redefined to ease their interpretation and better capture their talent-related dimensions. Above all, the innovation dimension of the GTCI has been strengthened. The broad coverage of countries was also further increased, from 119 to 125 countries.

As in the last two editions of the GTCI report, the present one includes a special section on cities, which considers (and attempts to measure) the many ways in which they contribute to reshaping the global talent scene. This year again, coverage continues to increase, and the Global Cities Talent Competitiveness Index (GCTCI) now includes 114 cities.

One distinct new feature of this edition is the inclusion of the first time-series analysis of GTCI data. Since the report can now rely on five-year time series, it starts to make sense to compare various performances (on specific variables or pillars) across

time. In subsequent editions, this approach will be refined and enriched. It is presented here in a first attempt to take a step back and assess how global talent competitiveness is changing globally.

While striving to increase the economic and decisional impact of the GTCI report, we also devote specific efforts to minimise its potential negative impact on the environment. For this, we continue to decrease the number of printed copies of the report, and encourage our readers and faithful followers to download the electronic versions of GTCI from our dedicated websites. In the coming months, new tools will be made available to enrich web-based, social media-centric, and app-centred GTCI experiences.

This year again we want to express our deep feeling of gratitude to our two faithful partners, namely the Adecco Group and Tata Communications. Our thanks go to the executives and teams involved in these organisations, and also to all the individuals, institutions, and organisations that have contributed chapters to the present edition.

As in previous years, we wish to direct special thanks to the European Commission Joint Research Centre (JRC), which has continued its highly professional and constructive evaluation of the strengths and weaknesses of the GTCI model. Finally, we acknowledge with gratitude the continued support of our prestigious Advisory Board, as well as the highly valuable contribution brought by Professor Paul Evans, founding academic director of GTCI during the last five years.

We continue to work hard at improving the relevance and value of this annual report, and count very much on the feedback from our growing readership to do so. We hope you enjoy this edition!

**Bruno Lanvin**

*Executive Director for Global Indices, INSEAD*

**Felipe Monteiro**

*Academic Director of the Global Talent Competitiveness Index;  
Affiliate Professor of Strategy, INSEAD*



# The Adecco Group | Foreword

Talent is the deciding factor in the global scramble for prosperity as skills grow ever more scarce and megatrends redefine our economies. Which countries and cities are setting the pace in talent competitiveness? Who is falling behind? How can we improve the way we enable, attract, grow, and retain talent everywhere? Does talent have to be a finite resource?

As the world of work changes rapidly around us, it is more and more necessary to have this information available to benchmark how we are competing against our peers, and to understand the trends affecting talent flows and talent competitiveness in order to improve our performance.

The sixth edition of the *Global Talent Competitiveness Report* (GTCI), produced in collaboration with the Adecco Group, INSEAD, and Tata Communications, provides invaluable insights into these issues.

Each year, we identify a burning topic that we believe is central to economic progress. Alongside the country and city talent competitiveness tables, this year we have placed a special focus on ‘entrepreneurial talent’.

Entrepreneurial talent combines the creativity, innovation, flexibility, adaptability, risk taking, and energy needed to successfully navigate a world in constant flux. In this report, we provide practical tools and guidance to help countries, cities, and companies foster entrepreneurial talent and harness its power.

At the Adecco Group, as the world’s leading HR solutions partner, we understand that entrepreneurial talent is not just limited to start-ups or mavericks. It is now a necessary state of mind for everyone, even the biggest companies. Without this crucial attribute, we risk falling behind as our economies evolve. Whether you are a freelancer or a multinational, entrepreneurial talent will help you navigate an uncertain future of work.

We have found that the concept of ‘openness’ is crucial for entrepreneurial talent to thrive. Countries and cities must foster an atmosphere of innovation and ideas while also providing environments that encourage and incentivise entrepreneurs. We

need to make sure people and companies feel they can take risks to find new solutions.

We are also seeing that cities are increasingly becoming entrepreneurial labs. Cities are hives of activity and experimentation, each with a large customer base to try out new ideas. In fact, cities continue to grow in importance on the local and global talent scenes. If countries do not perform well as nations, we are seeing cities increasingly stepping up to fill the gap.

The headline findings of the 2019 GTCI report show that we have some way to go before all of the world’s economies can realise their true potential through talent competitiveness. There remains a strong correlation between income per capita and talent performance. Looking back over the medium term, the GTCI’s five-year analysis hints at a possible, and worrying, increase in talent competitiveness inequalities. The gap in talent competitiveness between higher- and lower-income countries has increased over the past few years. This is most notable in Latin America and the Caribbean.

Our top-performing countries remain Switzerland, Singapore, the United States, and the Nordics—all high-income nations. The best-performing upper-middle-income country is Malaysia at 27th place, while Rwanda is the highest-ranked low-income country at 73rd. It is important for global policymakers to ensure that, while we compete, the future works for everyone around the world, not just the few.

One of the key economic challenges of our age will be how, as technology transforms the way we work and live, we can strive to improve talent competitiveness and, therefore, prosperity across the world.

By sharing best practices, exploring key trends and factors, and providing a benchmarking index tool, it is our hope that the GTCI can play some part in helping countries and cities to understand more clearly the challenges ahead and to lay the seeds for success in the future.

**Alain Dehaze**

*Chief Executive Officer, The Adecco Group*





# Tata Communications | Foreword

I am delighted that Tata Communications is contributing to the Global Talent Competitiveness Index (GTCI) for the second year. Businesses, of course, are about people, and I believe that success in today's world comes from fostering talent with an entrepreneurial orientation, curating diverse cognitive backgrounds at all levels in an organisation, and building systems and culture where change is preferred to the status quo. Critically, learning should never stop; it must be viewed as a lifelong pursuit.

The world is changing faster than ever. Disruption is the norm and opportunities can appear and disappear seemingly in the blink of an eye. While technology is driving these opportunities, it's people who will seize them.

Standing still is not an option in this changing world. In fact, evolving our skills and giving people the right tools to succeed is the surest way to success. I believe that all employees—regardless of age, team, or location—should see themselves in this context. They should see themselves as being in 'beta'—always seeking out ways to improve, to learn, and to grow. This mindset will help them move forward, to try new things and to learn from missteps.

The concept of openness is critical for entrepreneurial talent, and business culture plays a key role here. By instilling an open atmosphere that promotes learning and views 'failure' as a lesson learned, businesses will thrive. We should encourage a culture of intrapreneurship that leverages all the talent in our organisations, because it's impossible to predict where the next

great idea will come from. But you *can* predict that people who are curious about the world and seek out learning will spot opportunities. They will reevaluate our business practices, discover new revenue streams, and attract like-minded talent.

As in previous editions of GTCI, this year's data confirm that there is a strong correlation between income and talent performance, although, interestingly, dynamics within income groups vary from country to country. Such developments deserve careful attention, since new best practices may emerge from all parts of the world.

Technology can play a role as an enabler, and I'm fascinated by how humans and technology will interact in future workplaces. Recently, we launched our *AI and the Future of Work* report, a global study of 120 business leaders in collaboration with Professor Ken Goldberg from UC Berkeley. In addition to identifying how Artificial Intelligence (AI) can enhance cognitive diversity in teams, it also found that AI will offload repetitive tasks, freeing people to focus on ideas that move businesses forward. Lifelong learning is a vital ingredient in the way business leaders must plan to ensure that people and teams make the most of focusing on what they're great at: curiosity, creativity, and capitalising on opportunities.

A lifelong commitment to learning and development is how we'll continue to evolve and adapt to our new and changing environments.

## **Vinod Kumar**

*Chief Executive Officer and Managing Director,  
Tata Communications*



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# Chapters



## CHAPTER 1

# Entrepreneurial Talent for Competitiveness

Bruno Lanvin, Felipe Monteiro, and Michael Bratt

INSEAD

This sixth edition of the *Global Talent Competitiveness Index Report* (GTCI) aims to advance the current debate around entrepreneurial talent, providing practical tools and approaches to leverage the full potential of individuals and teams as an engine and a basis for innovation, growth, and ultimately competitiveness. One of the key working assumptions on which this report is based is that entrepreneurial talent cannot be reduced to some innate quality found in successful business founders and leaders. On the contrary, it can be regarded as an input to growth, innovation, and employment creation that can be measured and nurtured. There are conditions under which entrepreneurial talent can thrive and be stimulated. There are others under which it will be stifled, to remain an untapped or wasted resource.

The various chapters in this report cast different lights on this complex set of issues from the point of view of business (including, but certainly not limited to, small- and medium-size enterprises, start-ups, and unicorns), governments, or analysts. In this initial chapter, we address three topics: (1) how do we define *entrepreneurial talent*? (2) what are the ways in which

entrepreneurial talent and competitiveness relate to one another, and what issues does this raise for policy and decision makers? and (3), more generally, what do the current GTCI data tell us about how talent competitiveness is evolving globally?

## DEFINING ENTREPRENEURIAL TALENT

In his seminal 1996 article 'Entrepreneurship: Productive, Unproductive, and Destructive', William Baumol spoke of entrepreneurial talent as an often-wasted resource, suffering from massive misallocation: many entrepreneurial talents would end up working in inefficient and risk-averse organisational structures, in which their potential contributions to innovation and growth would be ignored or stifled.<sup>1</sup> In today's economy, such misallocation remains frequent while its cost increases continuously, making it a priority target for improving talent competitiveness at all levels.

One of the paradoxes surrounding entrepreneurial talent is that it is both a scarce resource and one that is widely distributed around the world. Differences in performance (both

among businesses and among national economies) often point to insufficiencies in the firm-level strategies and national policies that should contribute to its development and better allocation across economies and societies.

Although the literature on entrepreneurship is quite abundant (dating back to the 18th century, with François Quesnay and the physiocrats school of thought),<sup>2</sup> it often relies on a double source of confusion. One consists of reducing entrepreneurial talent to entrepreneurial traits, focusing on the psyche and character of entrepreneurs. The other consists of conflating entrepreneurial traits with traits of successful entrepreneurs. While the second confusion neglects the fact that many 'entrepreneurial individuals' will not necessarily meet success (at least not immediately), the first confusion leads to overlooking ways in which entrepreneurial talent can be grown, attracted, and nurtured.

The core reason why the topic of entrepreneurial talent was selected as the theme of this year's GTCI report is that it is a critical component of competitiveness and innovation, and will become even more so in a fast-changing world that continues to combine digitalisation and globalisation. The working assumptions behind this approach are that (1) entrepreneurial talent can be defined and measured (to some extent), and (2) governments, enterprises, and various parts of civil society can significantly contribute to its development and enhance its potential contribution to growth, employment, and competitiveness.

Subsequent chapters and analyses will amplify this point and illustrate it in practical fashions. Here we try to clarify the scope and approach offered in this year's GTCI, and how it can lead to better-informed policy and business decisions relevant to talent competitiveness.

## ENTREPRENEURIAL TALENT IS A CRITICAL ELEMENT OF ECONOMIC ACTIVITY

It has long been recognised that small- and medium-sized enterprises (SMEs) play a critical role in employment creation. This reality is even more acute in developing economies, where SMEs often constitute 90% or more of local companies.<sup>3</sup> Similarly (although a bit more recently) the role of entrepreneurial talent has been seen as critical on the innovation scene because of the part played by start-ups and unicorns. It is hence not surprising that much of the literature linking entrepreneurial talent to job creation and growth has focused on smaller-sized entities. As underlined by Katrin Mayer-Haug et al.:

As the broad link between small and medium-sized firm activity and key policy goals such as employment or economic growth has become generally accepted, the conversation has focused on a more nuanced understanding of the entrepreneurial engines of economic activity. A significant body of research looking at antecedents to venture performance has identified that entrepreneurial talent variables account for meaningful differences in venture performance and that significant heterogeneity exists across performance measures. These are important issues for institutions and policy makers

seeking to achieve specific economic goals (e.g., survival or growth of ventures, employment or revenue).<sup>4</sup>

Yet, in this report, we want to stress the fact that (much like innovation) entrepreneurial talent reflects a state of mind that should pervade whole economic and social systems to be fully leveraged. In other words, and as emphasised before, entrepreneurial talent should not be seen as strategic only in nascent and smaller structures, but also in larger organisations as well as central and local governments. Once this is acknowledged, available data and experience point to some practical ways in which entrepreneurial talent can indeed be grown, attracted, and nurtured.

## DEFINING THE DIFFERENCE BETWEEN ENTREPRENEURIAL TRAITS AND ENTREPRENEURIAL TALENT

One would expect that business and psychology literatures (as opposed to economic research) should address entrepreneurial talent very much from a personality angle, and this is very much the case.<sup>5</sup> Although this has increased the confusions noted earlier (and somewhat diminished the interest that entrepreneurial talent should have received from economists and policymakers) the research it has generated offers a promising basis for further exploration of entrepreneurial talent as a source of growth, employment, competitiveness, and innovation at national and local levels.

Referring to the personality traits approach to entrepreneurial talent, Katrin Mayer-Haug and her co-authors underline that

Many researchers compare the traits of entrepreneurs to employed workers or the general population to identify characteristics that define entrepreneurs as a group. It may seem a foolish or unnecessary task to compare Steve Jobs or Elon Musk to the average person, and many books describe the special biographies and personalities of these great entrepreneurs. . . . For every Jobs or Musk, we have thousands of entrepreneurs seeking growth-oriented businesses and many more seeking to build a business for themselves as self-employed proprietors. The collective impact of these individuals on our economy is enormous, even if they don't start Apple or SpaceX.<sup>6</sup>

One tool that has been used thoroughly and successfully in such research has been the Big Five model, which became widely used in the 1980s but refers back to early research by visionaries such as Francis Galton (1883) and Gaston Berger (1950) on identifying character categories. The Big Five traits are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (often abbreviated as OCEAN), with each dimension containing six facets or lower-level traits.<sup>7</sup> The model has gained wide consensus among personality psychologists as representing the highest order of an individual's personality and it has been applied in many fields beyond psychology, including economics,<sup>8</sup> political science,<sup>9</sup> and even zoology.<sup>10</sup>

With respect to entrepreneurship, Kerr et al. (2018) provide an analytic overview of personality traits and entrepreneurs.



Figure 1

**The Complex Process Model of Entrepreneurship**

Source: Adapted from Kerr et al. (2018, p. 30).

They point out that entrepreneurship is a complex process that involves many variables that interact with each other to provide the context for starting and operating new businesses. In particular, successful entrepreneurship is the outcome of how personality, human capital, and environment feed into active performance that is self-starting, proactive, and persistent. The process invariably takes place within the context of a specific national culture. They illustrate this process in a diagram adapted from Frese (2009) and Brandstätter (2010) (Figure 1).

From a talent competitiveness point of view, the key question suggested by this diagram is: which among the factors mentioned can influence (or be influenced by) strategies, policies, and targeted measures?

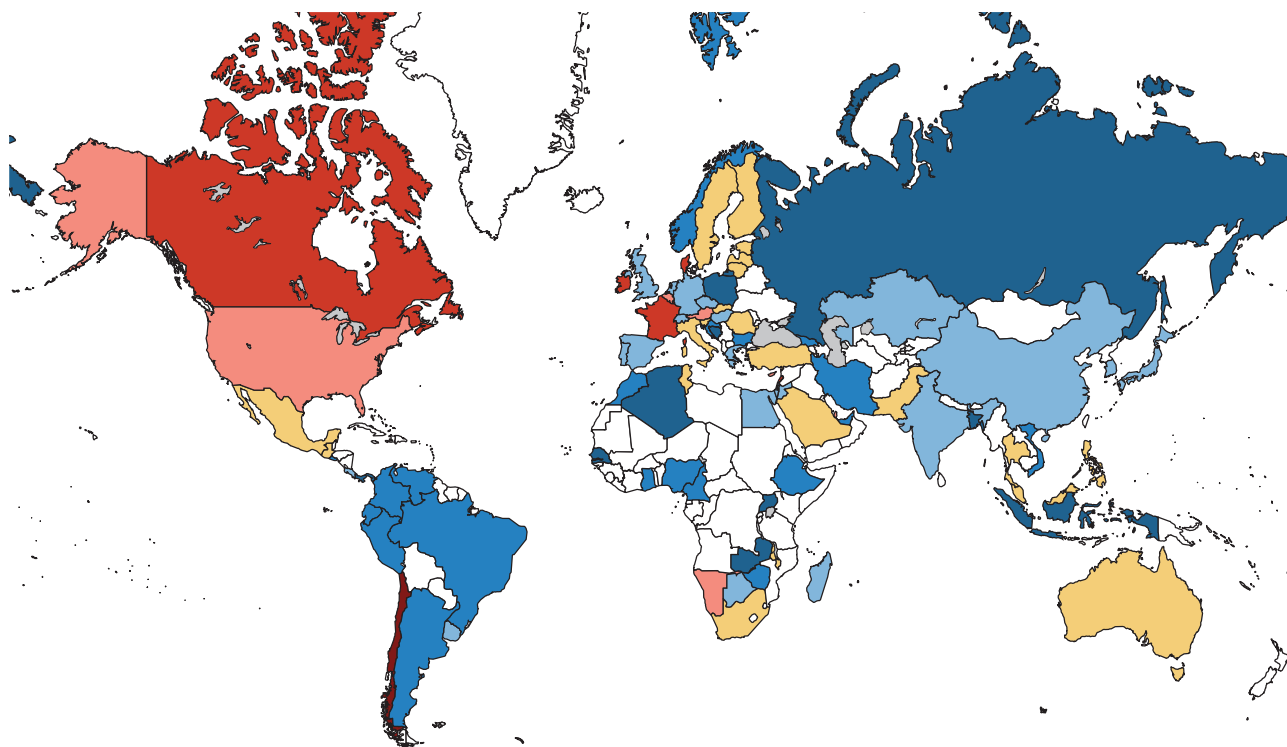
As noted by Kerr et al., ‘Researchers in some disciplines (but rarely economics) go further than the study of interactions to construct “a complex process model of the entrepreneur,” in which the relationships among these variables are mapped out and ultimately govern venture success.’<sup>11</sup> However, the approach described above offers a valuable starting point for translating personality traits into reproducible skills, which could then be translated into policy priorities and targeted action adapted to various economic environments.

### ENTREPRENEURIAL TALENT IS CRITICAL TO REDUCE TALENT INEQUALITIES

The mere fact that entrepreneurial talent cannot be reduced to personality traits—that, on the contrary, it can be defined as a combination of skills that can be measured, improved, and better leveraged—is particularly important in poorer and fast-growing economies, since (as underlined later in this chapter) talent inequalities tend to increase between rich and poor countries. Lerner et al. (1997) showed that entrepreneurial talent is more likely to vary across developing economies, particularly because of the formers’ higher and more consistent education policies. One also cannot neglect the fact that becoming an entrepreneur may be a choice (or an ambition) in advanced countries, but is often just a necessity of survival in poorer environments.<sup>12</sup>

The example of China is particularly illuminating in this context. It is quite striking that the rise of China has been heavily correlated with the transfer of significant amounts of talent from the public sector (including state-owned enterprises) to the private sector,<sup>13</sup> leading to the rapid emergence of giants such as Tencent, Alibaba, and Haier. All of these successes have been linked to the blossoming of specific entrepreneurial talents, incarnated by charismatic leaders such as Ma Huateng (Pony Ma), Jack Ma,

Figure 2

**New product entrepreneurial activity: Scores used in the GTCI**

Note: Entrepreneurial activity ranges from 0 (dark blue) to 100 (dark red); countries with no available data are shown in white.

and Zhang Ruimin. What is more striking is that China has become the origin of new approaches to identifying and stimulating entrepreneurial talent across large entities, as described in Haier's *Rendanheyi Model*, to which a chapter of this report is devoted.

Researchers such as W. Zhang and others have long argued that

the economic miracle of China in the past three decades can be attributed to the reallocation of entrepreneurial talent from the government/state and agricultural sectors to business activities. This change is unprecedented in the past two thousand years of Chinese history. When entrepreneurial talent was moved more to business activities, it created wealth, and the economy boomed. Three dominant groups of entrepreneurs are identified: (1) Peasants-turned entrepreneurs, (2) officials-turned entrepreneurs, and (3) overseas-retained, and engineers-turned, entrepreneurs. They have emerged sequentially, and successively led three decades of economic growth. The success of the Chinese economy arises from a gradual replacement of position-based rights with property-based rights that has triggered this reallocation of entrepreneurial talent.<sup>14</sup>

These are elements that should progressively translate into an improvement of China's GTCI rankings.

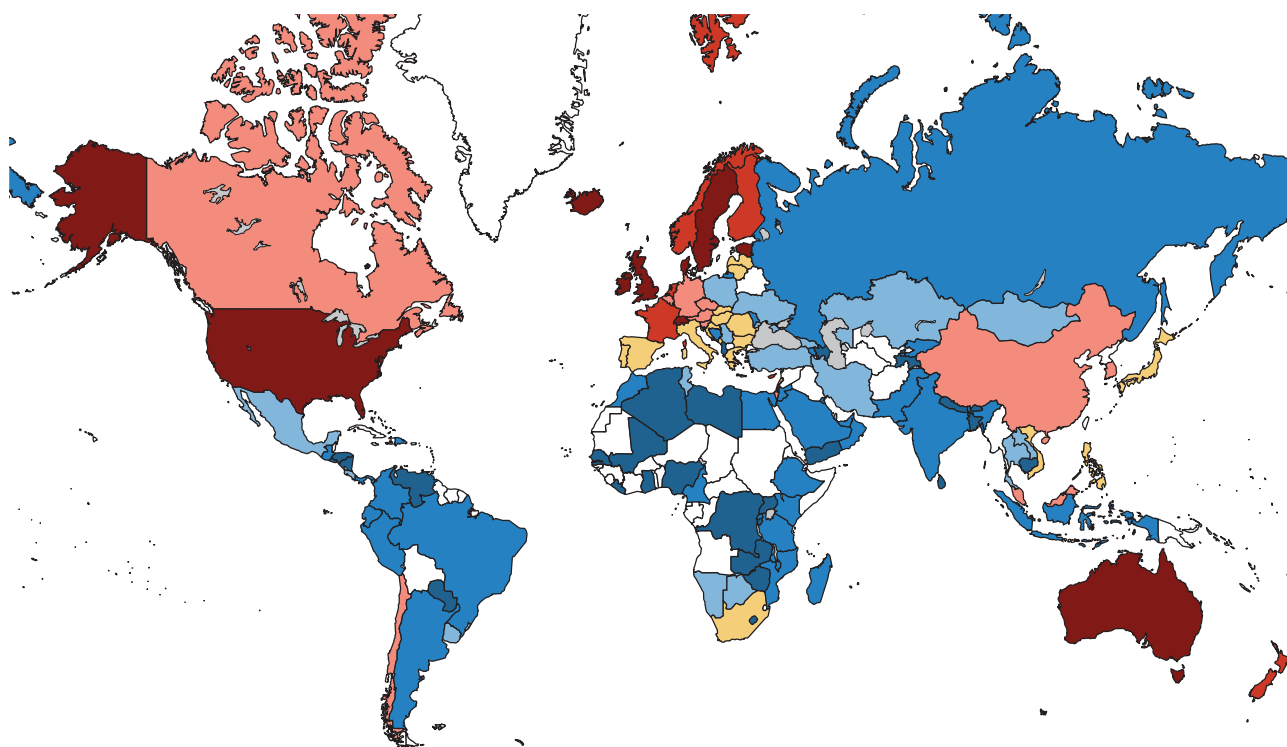
### ENTREPRENEURIAL TALENT FROM A GTCI PERSPECTIVE: A SPATIAL ANALYSIS

A key element in enhancing talent competitiveness is to nurture the kind of entrepreneurship that is required in today's knowledge economy—that is, one that has an appetite and ability for mobility, adaptability, and innovation. There are several dimensions of the GTCI that have a bearing on how such entrepreneurship is evolving around the world—with respect to both input and output components. That said, the pillar that best captures entrepreneurial talent is the one related to Global Knowledge Skills (pillar 6). In particular, the Talent Impact sub-pillar (6.2) is directly concerned with innovation and entrepreneurship, with the variable New product entrepreneurial activity (6.2.3) being of specific interest. A closer look at these two measurements can yield insights into the building of entrepreneurial talent.

#### Tracking Entrepreneurial Activity

The GTCI variable 6.2.3, New product entrepreneurial activity, is an absolute measure that provides an indication not only of products or services that are new, but also of those that are original and not available elsewhere (or only to a limited extent).<sup>15</sup> Thus, countries that perform well in this indicator would be expected to be strong in entrepreneurship that is innovative (which can itself be considered as a proxy for entrepreneurial talent performance). The distribution of GTCI countries on that dimension (Figure 2) shows a high degree of variety across regions,

Figure 3

**Talent impact: Scores used in the GTCI**

Note: Talent impact ranges from 0 (dark blue) to 63.76 (dark red); countries with no available data are shown in white.

as well as some remarkably high scores from countries such as Luxembourg (1st) and Chile (2nd). One also finds in the top 5 for this variable countries located in three regions, namely Europe (France, 3rd), Northern America (Canada, 5th), and also Western Asia (Lebanon, 4th). Interestingly, Russia is one of the lowest-scoring countries in the sample, with Sub-Saharan Africa, South Asia, and Latin America represented among the worst-performing regions.

The high geographic dissemination of top and bottom performers in new product entrepreneurial activity suggests that all types of economies, in all regions, have significant benefits to draw from boosting their entrepreneurial talent.

### Assessing Entrepreneurial Talent Impact

The sub-pillar Talent Impact (6.2) includes the variable New product entrepreneurial activity (variable 6.2.3, considered in the previous section), but also encompasses indicators on Innovation output (6.2.1), High-value exports (6.2.2), New business density (6.2.4), and Scientific journal articles (6.2.5). Being a broader measure that is made up of several indicators, it provides a fuller picture on the impact of entrepreneurship and innovation in talent competitiveness.

In contrast to the variable New product entrepreneurial activity, the highest scores in the aggregated Talent Impact sub-pillar are distinctly more concentrated in terms of income groups and geographic regions (Figure 3). High-income countries in

Europe, Northern America, and Oceania are heavily represented among the top performers on this sub-pillar. This indicates that, when it comes to the wider role of entrepreneurial talent, it is not enough for a country to focus on a single or even a few dimensions. Rather, a more holistic course of action must be pursued. In this, as in the GTCI at large, it is the talent champions that have the upper hand: developing strong and vibrant ecosystems around innovation remains one of the areas in which inequalities remain strong between talent champions and their competitors. One possible implication of this for the development of entrepreneurial talent is that such talent needs to be cross-border and cross-sector: successful entrepreneurs are not just those who can create and lead a business, but increasingly those who can formulate a vision and convince other players (banks and other financial sources, academia and research, suppliers and consumers, workers and collaborators) of its value.

### KEY MESSAGES EMERGING FROM THE GTCI 2019

- **Message 1: Talent inequalities are broadening.** Looking back at the first six years of the GTCI and comparing available data across time, one cannot escape the conclusion that the gap separating the talent champions from the rest has been growing rather than diminishing. The statistical correlation between income per capita and talent performance remains high, while some regions seem to be facing continued issues

in identifying entry points to talent competitiveness (this is the case for most of Sub-Saharan Africa, and some of the least-developed economies elsewhere) or are witnessing a progressive erosion of their talent base (as is the case for Latin America and the Caribbean in particular).

- **Message 2: Talent issues have become a mainstream concern for firms, nations, and cities.** The mere fact that the GTCI's database has been increasing in coverage and quality is just one piece of evidence demonstrating that all types of organisations (private and public, governmental or not) have been devoting significant resources and energy to identifying ways to measure talent and its related dimensions. But, more importantly, the reverse causality link is gaining visibility and importance. This means that analyses and assessments are not carried out only to measure how better-endowed and richer economies foster talent, but more and more to measure the impact of talent performance on other broad objectives such as growth, job creation, and innovation.
- **Message 3: Entrepreneurial talent can both broaden and reduce inequalities.** Entrepreneurial talent plays a vital role in smaller firms (which are critical to job creation, especially in developing economies) and start-ups (which are critical to innovation). Yet analyses such as the GTCI's, as well as recent evidence from the business and economic scenes, show that entrepreneurial talent also has critical roles to play in larger organisations and even in governments. All components of the innovation ecosystem now need to enhance their efforts to attract, nurture, and retain more entrepreneurial talent. This talent should be seen as a state of mind that can be grown, improved, and nurtured with a mix of policies, incentives, and management approaches that should be adapted to the specific context of individual countries.
- **Message 4: New approaches are emerging to stimulate entrepreneurial talent.** Such approaches include radically different management systems, some of which have not originated in the countries with the highest GTCI rankings. These approaches recognise that entrepreneurial talent is not an homogenous or fungible resource: an efficient entrepreneurial talent strategy needs to reflect the typical stages of a firms' life cycle (start-up, scale-up, up to major player in a particular sector or geography), and requires different new tactics at every step. Such tactics have yet to be fully reflected in the curricula and practices of existing educational institutions, including business schools.
- **Message 5: Digitalisation and globalisation will increase the role of entrepreneurial talent.** Because the future of work will be radically affected by the rapid spread of artificial intelligence (itself fed by the internet of things, big data, and deep learning), the proportion of salaried workers will continue to be reduced and the number of free agents to grow. Simultaneously, new business models (especially in a platform economy context) will emerge, triggering new ways

to extract and share value from information. Such a fluid business and economic context will clearly favour the countries and organisations that have the ability to mobilise relevant entrepreneurial talents.

- **Message 6: Cities will play increasingly central roles as entrepreneurial talent hubs.** Because entrepreneurial talent is strongly related to innovation, the building and management of dynamic (and open) ecosystems will be an increasingly important part of building an entrepreneurial culture and state of mind. The critical role already played by cities and regions to set up incubators and accelerators will become more and more relevant. Currently, most cities tend to build talent strategies around similar criteria (quality of life, connectivity, and sustainability, e.g.); few are targeting specialised talent linked to particular local issues or typical municipal issues (waste management, transport, and inclusion, among others) but this should be expected to emerge rapidly, in particular around smart cities' strategies. There, too, entrepreneurial talent will be a key asset.

## THE GTCI CONCEPTUAL FRAMEWORK

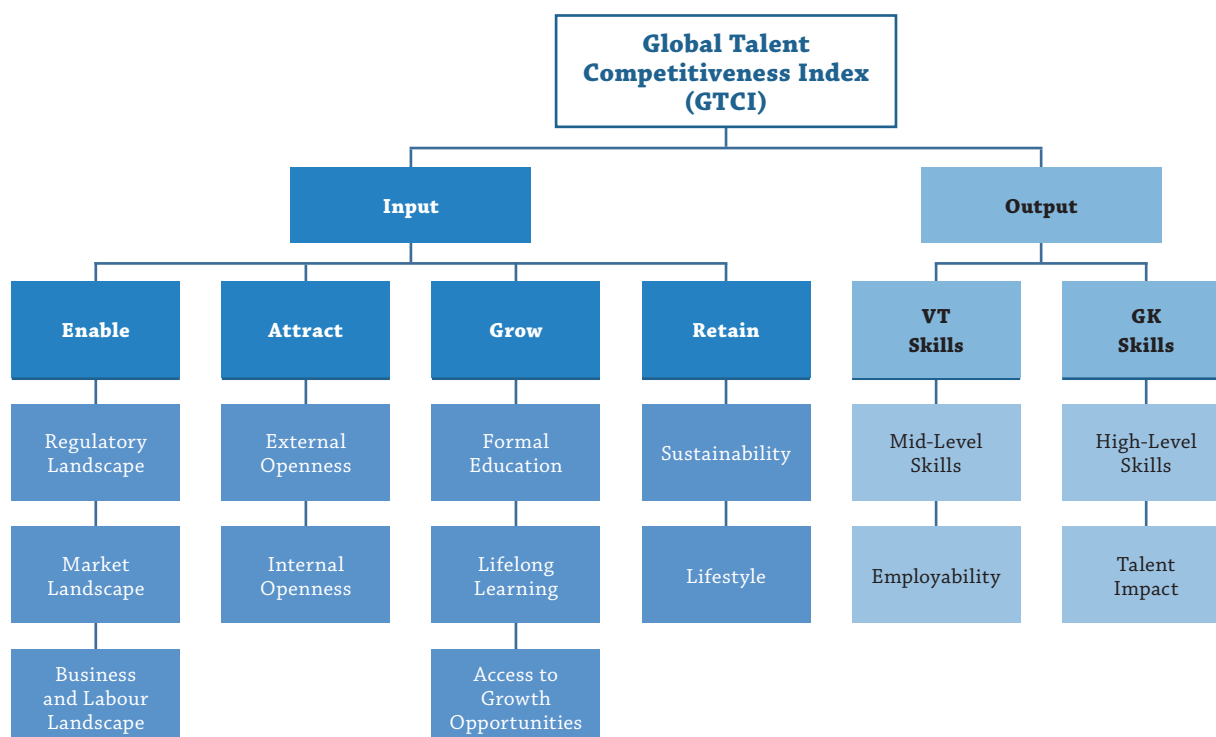
As underlined in the previous five editions of the GTCI, countries are competing globally to grow better talent; attract the talent they need; and retain those workers who contribute to competitiveness, innovation, and growth. Countries seek to put economic and social policies in place that will facilitate this. In such a context, governments, businesses, and various other stakeholders need quantitative instruments that can inform their decisions (as investors, employers, employees, or jobseekers) and can help them design and implement better policies in areas such as education, employment, and immigration, to name a few. This is the purpose of the GTCI.

## Who Is Expected to Use the GTCI and Why?

Decisions regarding the development, attraction, and empowerment of talent are remarkably complex and multi-layered. They involve a multi-disciplinary endeavour to tackle talent dilemmas that have been raised in the fields of economics, education, human resource management and organisational behaviour, entrepreneurship, innovation, and strategy. At the policy level, this complexity is compounded by emotional dimensions and the international consequences of choices to be made in terms of immigration, social equity, and fiscal incentives, among other issues.

Faced with such intricate issues, decision-makers—both public and private—need quantitative tools that will enable them to benchmark the efforts made and results obtained in different socioeconomic environments in terms of talent management and talent competitiveness. The GTCI has been designed to help address this challenge by providing a composite view of talent competitiveness applicable to a large number of countries (125 this year). Although a number of composite indices concerning skills, talent, and human capital have been developed in recent years, both private and public players in the field see the need for a neutral, global, and respected index that would

Figure 4  
The GTCI 2019 model



Note: GK Skills = Global Knowledge Skills; VT Skills = Vocational and Technical Skills.

enable them to assess the effectiveness of talent-related policies and practices, identify priorities for action in relevant areas, and inform international and local debate in this arena.

### The Structure of the GTCI Model

In the context of the GTCI, *talent competitiveness* refers to the set of policies and practices that enable a country to develop, attract, and empower the human capital that contributes to productivity and prosperity. The GTCI is an Input-Output model (see Figure 4) in the sense that it combines an assessment of what countries do to produce and acquire talents (Input) and the kind of skills that are available to them as a result (Output). Feedback received on previous editions, additional research, and the availability of new data have allowed refinements to the model, though its basic structure is robust and unchanged.

**The Input pillars of the GTCI** are inspired by the Attract-Grow-Retain framework used by corporations to steer talent management. Multinational corporations frame talent management in these terms, defining talent management as an organisation's efforts to attract, select, develop, and retain talented employees to meet their strategic needs.<sup>16</sup> The GTCI focuses on efforts by countries and thus the model is fed by macroeconomic and country-level variables. **Attracting** talent, in the context of national competitiveness, should be viewed in terms of luring foreign valuable resources, both productive businesses (through foreign direct investment and the like) and creative people

(through high-skilled migration), while internal attraction is focused on removing barriers to entering the talent pool for groups such as those from underprivileged backgrounds, women, and older people. **Growing** talent has traditionally meant education, but its definition should be broadened to include apprenticeships, training, and continuous education as well as experience and access to growth opportunities (although we may acknowledge that most skill development occurs through experience, much remains to be done to conceptualise and measure its role). The more talented the person, the wider the global opportunities he or she can find elsewhere. **Retaining** talent is thus necessary to ensure sustainability, and one of the main components of retention is quality of life. In addition, the regulatory, market, business, and labour landscapes within a country facilitate or impede talent attraction and growth; the GTCI classifies these elements as parts of the **Enable** pillar. Together, Enable, Attract, Grow, and Retain constitute the four Input pillars of the GTCI model.

**Regarding Output**, the GTCI differentiates between two levels of talent, which can be broadly thought of as mid-level and high-level skills. Mid-level skills, labelled *Vocational and Technical Skills* (or VT Skills), describes skills that have a technical or professional base acquired through vocational or professional training and experience. The impact of VT Skills is measured by the degree of employability to which they lead. Employability is measured by indicators of skills gaps and labour market mismatches and by the adequacy of educational systems. High-level skills,

labelled *Global Knowledge Skills* (or GK Skills), deal with knowledge workers in professional, managerial, or leadership roles that require creativity and problem solving. Their economic impact is evaluated by indicators of innovation, entrepreneurship, and the development of high-value industries. Together, VT Skills and GK Skills constitute the two Output pillars of the GTCI model.

The GTCI attempts to offer an approach to talent competitiveness issues that is comprehensive, action-oriented, analytical, and practical. As described earlier, the GTCI is a composite index, relying on a simple but robust Input-Output model, composed of six pillars (four on the Input side and two on the Output side), as illustrated in Figure 4. The GTCI generates three main indices that are the most visible focus for analysis, namely:

1. **The Talent Competitiveness Input sub-index**, which is composed of four pillars describing the policies, resources, and efforts that a particular country can harness to foster its talent competitiveness. Enable (Pillar 1) reflects the extent to which the regulatory and business environment—including issues about competition, management practices, and the functioning of labour markets—create a favourable climate for talent to develop and thrive. The other three pillars describe the three levers of talent competitiveness, which focus respectively on what countries are doing to Attract (Pillar 2), Grow (Pillar 3), and Retain (Pillar 4) talent. The Input sub-index is the simple arithmetic average of the scores registered on these four pillars.
2. **The Talent Competitiveness Output sub-index**, which aims to describe and measure the quality of talent in a country that results from the above policies, resources, and efforts. It is composed of two pillars describing the current situation of a particular country in terms of Vocational and Technical Skills (Pillar 5) and Global Knowledge Skills (Pillar 6). The Output sub-index is the simple arithmetic average of the scores obtained on these two pillars.
3. **The Global Talent Competitiveness Index (GTCI)**, which is computed as the simple arithmetic average of the scores registered on each of the six pillars described above.

The GTCI model has been refined in this 2019 edition with respect to the 2018 edition, even as the number and type of variables have remained the same. The one modification of note is that efforts have been made to strengthen the innovation dimension of the GTCI. Although there is always an element of entrepreneurship to an innovative activity, it is not the case that an entrepreneurial activity is invariably innovative. The model has therefore been slightly altered to capture entrepreneurship that is original and geared to new products and approaches.

The total number of variables in this year's model has stayed unchanged at 68. Country coverage, however, has increased from 119 to 125 countries, representing almost 98% of the world's GDP and 93% of its population. The audit carried out by the Joint Research Centre (JRC) of the European Commission (see Chapter 6) has confirmed that the changes introduced in the model have

improved its accuracy, while maintaining its solidity and robustness.<sup>17</sup> Further details of the variable definitions and the method of calculation can be found in the Sources and Definitions and Technical Notes sections in the Appendices. Improvements will continue to be made to the GTCI model in the future, based on further discussions with academics and business and government leaders, as well as feedback from users of the GTCI.

## GLOBAL TALENT COMPETITIVENESS INDEX 2019: MAIN FINDINGS

The top positions in the ranking of the GTCI scores continue to be dominated by developed, high-income countries (see Table 1 on pages 11–13), and there is a high correlation between GDP per capita and GTCI scores (see Figure 5 on pages 14–15). The Statistical Annex to this chapter presents more detailed information on country performance for the different sub-pillars and variables. European countries continue to lead the GTCI rankings; 16 of them are in the top 25. Switzerland maintains its position at the top, followed by Singapore and the United States. If we consider the top 25, seven additional non-European countries make the grade: New Zealand, Australia, Canada, the United Arab Emirates, Israel, Japan, and Qatar.

An assessment of the top 15 countries in this ranking can be found in the Statistical Annex, along with an analysis and commentary on the 125 countries according to five income groups and seven regional groups.

## LONGER-TERM TRENDS IN TALENT COMPETITIVENESS

This year marks the sixth edition of the GTCI, which provides an opportunity to detect how, if at all, talent competitiveness is evolving in countries around the world. The present section, therefore, takes a longer perspective than the rest of the chapter by comparing performances in the GTCI over two three-year periods: 2014–2016 against 2017–2019.<sup>18</sup> There are three reasons why doing so is of interest. First, comparing and contrasting an earlier period with a later period can be useful for spotting general trends in talent competitiveness that are easily missed in a year-by-year analysis. Second, the identification of such trends can provide additional insights into why talent competitiveness in a given country or grouping might be changing in any one particular direction (or, for that matter, why it might be staying fixed). Third, and more technically, the aggregation of three years into a single period allows for some smoothing of annual fluctuations in the data that, in turn, results in more reliable conclusions. Similarly, the aggregation absorbs year-to-year changes because of improvements in the methodology of GTCI.<sup>19</sup>

Only countries that feature in all six GTCI reports are included in the analysis: all in all, 86 countries. Of these, 42 are high-income countries, 27 are upper-middle-income countries, 16 are lower-middle-income countries, and 1 is a low-income country. The regional breakdown, meanwhile, is the following: 7 in Central and Southern Asia; 13 in Eastern, Southeastern Asia and Oceania; 33 in Europe; 16 in Latin America and the Caribbean; 11 in Northern Africa and Western Asia; 2 in Northern America; and 4 in Sub-Saharan Africa.



Table 1

**Global Talent Competitiveness Index 2019 rankings**

| COUNTRY                  | SCORE | OVERALL RANK | INCOME GROUP        | REGIONAL GROUP                         | REGIONAL GROUP RANK |
|--------------------------|-------|--------------|---------------------|----------------------------------------|---------------------|
| Switzerland              | 81.82 | 1            | High income         | Europe                                 | 1                   |
| Singapore                | 77.27 | 2            | High income         | Eastern, Southeastern Asia and Oceania | 1                   |
| United States of America | 76.64 | 3            | High income         | Northern America                       | 1                   |
| Norway                   | 74.67 | 4            | High income         | Europe                                 | 2                   |
| Denmark                  | 73.85 | 5            | High income         | Europe                                 | 3                   |
| Finland                  | 73.78 | 6            | High income         | Europe                                 | 4                   |
| Sweden                   | 73.53 | 7            | High income         | Europe                                 | 5                   |
| Netherlands              | 73.02 | 8            | High income         | Europe                                 | 6                   |
| United Kingdom           | 71.44 | 9            | High income         | Europe                                 | 7                   |
| Luxembourg               | 71.18 | 10           | High income         | Europe                                 | 8                   |
| New Zealand              | 71.12 | 11           | High income         | Eastern, Southeastern Asia and Oceania | 2                   |
| Australia                | 71.08 | 12           | High income         | Eastern, Southeastern Asia and Oceania | 3                   |
| Iceland                  | 71.03 | 13           | High income         | Europe                                 | 9                   |
| Germany                  | 70.72 | 14           | High income         | Europe                                 | 10                  |
| Canada                   | 70.43 | 15           | High income         | Northern America                       | 2                   |
| Ireland                  | 70.15 | 16           | High income         | Europe                                 | 11                  |
| Belgium                  | 68.48 | 17           | High income         | Europe                                 | 12                  |
| Austria                  | 68.31 | 18           | High income         | Europe                                 | 13                  |
| United Arab Emirates     | 65.90 | 19           | High income         | Northern Africa and Western Asia       | 1                   |
| Israel                   | 63.26 | 20           | High income         | Northern Africa and Western Asia       | 2                   |
| France                   | 61.82 | 21           | High income         | Europe                                 | 14                  |
| Japan                    | 61.56 | 22           | High income         | Eastern, Southeastern Asia and Oceania | 4                   |
| Estonia                  | 60.74 | 23           | High income         | Europe                                 | 15                  |
| Qatar                    | 60.50 | 24           | High income         | Northern Africa and Western Asia       | 3                   |
| Czech Republic           | 59.38 | 25           | High income         | Europe                                 | 16                  |
| Malta                    | 59.10 | 26           | High income         | Europe                                 | 17                  |
| Malaysia                 | 58.62 | 27           | Upper-middle income | Eastern, Southeastern Asia and Oceania | 5                   |
| Portugal                 | 55.66 | 28           | High income         | Europe                                 | 18                  |
| Slovenia                 | 54.44 | 29           | High income         | Europe                                 | 19                  |
| Korea, Rep.              | 54.19 | 30           | High income         | Eastern, Southeastern Asia and Oceania | 6                   |
| Spain                    | 52.85 | 31           | High income         | Europe                                 | 20                  |
| Chile                    | 52.20 | 32           | High income         | Latin America and the Caribbean        | 1                   |
| Cyprus                   | 52.20 | 33           | High income         | Northern Africa and Western Asia       | 4                   |
| Costa Rica               | 51.47 | 34           | Upper-middle income | Latin America and the Caribbean        | 2                   |
| Lithuania                | 50.75 | 35           | High income         | Europe                                 | 21                  |
| Brunei Darussalam        | 49.91 | 36           | High income         | Eastern, Southeastern Asia and Oceania | 7                   |
| Latvia                   | 49.39 | 37           | High income         | Europe                                 | 22                  |
| Italy                    | 49.21 | 38           | High income         | Europe                                 | 23                  |
| Saudi Arabia             | 48.78 | 39           | High income         | Northern Africa and Western Asia       | 5                   |
| Bahrain                  | 48.45 | 40           | High income         | Northern Africa and Western Asia       | 6                   |
| Slovakia                 | 48.37 | 41           | High income         | Europe                                 | 24                  |

(continued on next page)

Table 1 (continued)

**Global Talent Competitiveness Index 2019 rankings**

| COUNTRY             | SCORE | OVERALL RANK | INCOME GROUP        | REGIONAL GROUP                         | REGIONAL GROUP RANK |
|---------------------|-------|--------------|---------------------|----------------------------------------|---------------------|
| Poland              | 47.41 | 42           | High income         | Europe                                 | 25                  |
| Azerbaijan          | 45.94 | 43           | Upper-middle income | Northern Africa and Western Asia       | 7                   |
| Greece              | 45.49 | 44           | High income         | Europe                                 | 26                  |
| China               | 45.44 | 45           | Upper-middle income | Eastern, Southeastern Asia and Oceania | 8                   |
| Uruguay             | 45.22 | 46           | High income         | Latin America and the Caribbean        | 3                   |
| Mauritius           | 45.14 | 47           | Upper-middle income | Sub-Saharan Africa                     | 1                   |
| Oman                | 43.88 | 48           | High income         | Northern Africa and Western Asia       | 8                   |
| Russian Federation  | 43.47 | 49           | Upper-middle income | Europe                                 | 27                  |
| Trinidad and Tobago | 43.43 | 50           | High income         | Latin America and the Caribbean        | 4                   |
| Montenegro          | 43.34 | 51           | Upper-middle income | Europe                                 | 28                  |
| Panama              | 43.20 | 52           | High income         | Latin America and the Caribbean        | 5                   |
| Hungary             | 42.89 | 53           | High income         | Europe                                 | 29                  |
| Bulgaria            | 42.72 | 54           | Upper-middle income | Europe                                 | 30                  |
| Croatia             | 42.27 | 55           | High income         | Europe                                 | 31                  |
| Kazakhstan          | 41.79 | 56           | Upper-middle income | Central and Southern Asia              | 1                   |
| Jordan              | 40.96 | 57           | Upper-middle income | Northern Africa and Western Asia       | 9                   |
| Philippines         | 40.94 | 58           | Lower-middle income | Eastern, Southeastern Asia and Oceania | 9                   |
| Lebanon             | 40.85 | 59           | Upper-middle income | Northern Africa and Western Asia       | 10                  |
| Argentina           | 40.65 | 60           | High income         | Latin America and the Caribbean        | 6                   |
| Armenia             | 39.95 | 61           | Upper-middle income | Northern Africa and Western Asia       | 11                  |
| Botswana            | 39.86 | 62           | Upper-middle income | Sub-Saharan Africa                     | 2                   |
| Ukraine             | 39.41 | 63           | Lower-middle income | Europe                                 | 32                  |
| Kuwait              | 39.17 | 64           | High income         | Northern Africa and Western Asia       | 12                  |
| Colombia            | 38.93 | 65           | Upper-middle income | Latin America and the Caribbean        | 7                   |
| Thailand            | 38.62 | 66           | Upper-middle income | Eastern, Southeastern Asia and Oceania | 10                  |
| Indonesia           | 38.61 | 67           | Lower-middle income | Eastern, Southeastern Asia and Oceania | 11                  |
| Serbia              | 38.45 | 68           | Upper-middle income | Europe                                 | 33                  |
| Romania             | 38.11 | 69           | Upper-middle income | Europe                                 | 34                  |
| Mexico              | 38.00 | 70           | Upper-middle income | Latin America and the Caribbean        | 8                   |
| South Africa        | 37.94 | 71           | Upper-middle income | Sub-Saharan Africa                     | 3                   |
| Brazil              | 37.57 | 72           | Upper-middle income | Latin America and the Caribbean        | 9                   |
| Rwanda              | 37.48 | 73           | Low income          | Sub-Saharan Africa                     | 4                   |
| Turkey              | 37.44 | 74           | Upper-middle income | Northern Africa and Western Asia       | 13                  |
| Albania             | 37.35 | 75           | Upper-middle income | Europe                                 | 35                  |
| Georgia             | 37.32 | 76           | Lower-middle income | Northern Africa and Western Asia       | 14                  |
| Mongolia            | 36.41 | 77           | Lower-middle income | Eastern, Southeastern Asia and Oceania | 12                  |
| Namibia             | 36.14 | 78           | Upper-middle income | Sub-Saharan Africa                     | 5                   |
| Peru                | 36.11 | 79           | Upper-middle income | Latin America and the Caribbean        | 10                  |
| India               | 35.98 | 80           | Lower-middle income | Central and Southern Asia              | 2                   |
| Tajikistan          | 35.17 | 81           | Low income          | Central and Southern Asia              | 3                   |
| Sri Lanka           | 34.79 | 82           | Lower-middle income | Central and Southern Asia              | 4                   |
| Bhutan              | 34.62 | 83           | Lower-middle income | Central and Southern Asia              | 5                   |

(continued on next page)

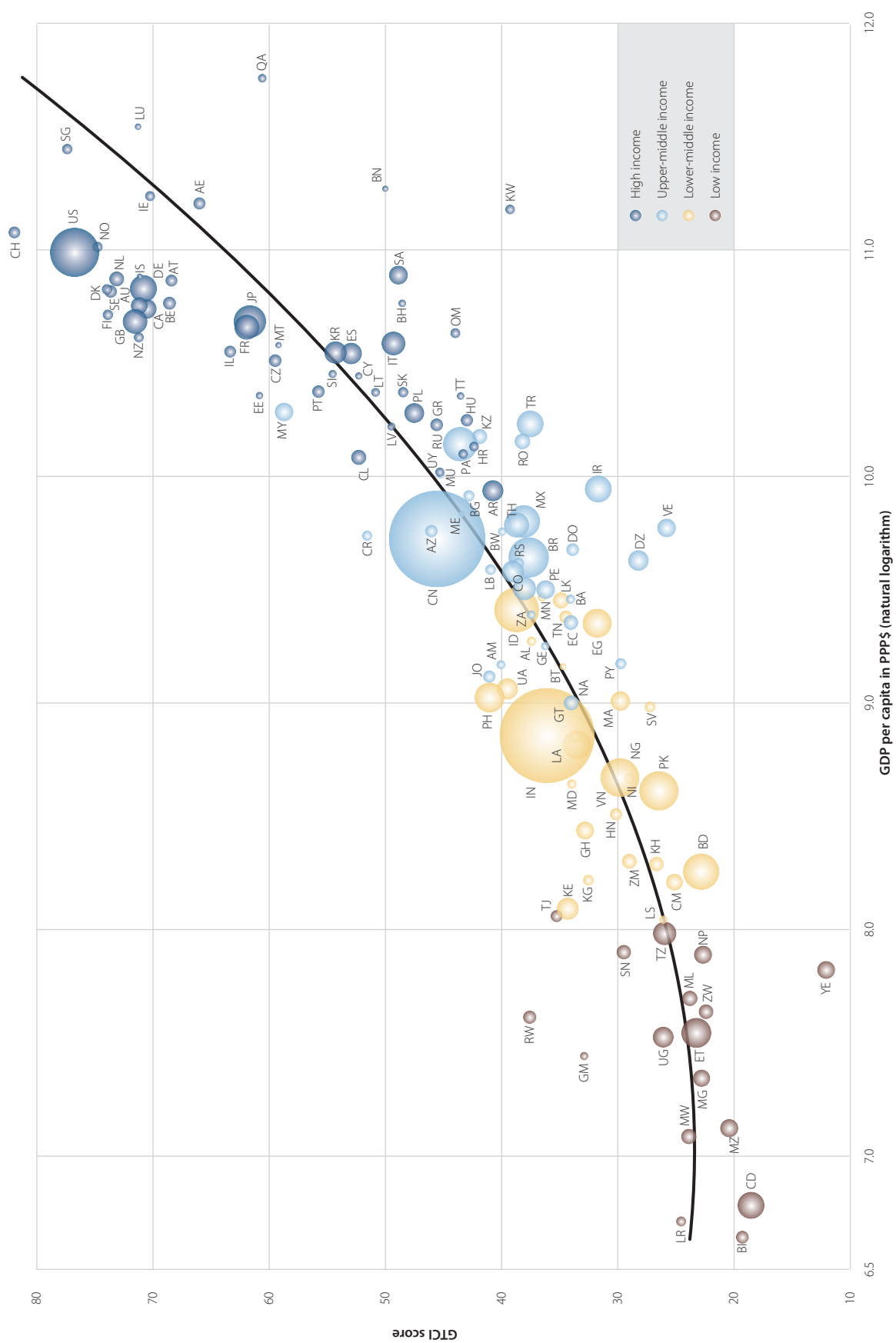


Table 1 (continued)

**Global Talent Competitiveness Index 2019 rankings**

| COUNTRY                    | SCORE | OVERALL RANK | INCOME GROUP        | REGIONAL GROUP                         | REGIONAL GROUP RANK |
|----------------------------|-------|--------------|---------------------|----------------------------------------|---------------------|
| Tunisia                    | 34.37 | 84           | Lower-middle income | Northern Africa and Western Asia       | 15                  |
| Kenya                      | 34.21 | 85           | Lower-middle income | Sub-Saharan Africa                     | 6                   |
| Bosnia and Herzegovina     | 33.97 | 86           | Upper-middle income | Europe                                 | 36                  |
| Ecuador                    | 33.94 | 87           | Upper-middle income | Latin America and the Caribbean        | 11                  |
| Guatemala                  | 33.91 | 88           | Upper-middle income | Latin America and the Caribbean        | 12                  |
| Moldova, Rep.              | 33.86 | 89           | Lower-middle income | Europe                                 | 37                  |
| Dominican Republic         | 33.79 | 90           | Upper-middle income | Latin America and the Caribbean        | 13                  |
| Lao PDR                    | 33.56 | 91           | Lower-middle income | Eastern, Southeastern Asia and Oceania | 13                  |
| Viet Nam                   | 33.41 | 92           | Lower-middle income | Eastern, Southeastern Asia and Oceania | 14                  |
| Gambia                     | 32.80 | 93           | Low income          | Sub-Saharan Africa                     | 7                   |
| Ghana                      | 32.72 | 94           | Lower-middle income | Sub-Saharan Africa                     | 8                   |
| Kyrgyzstan                 | 32.43 | 95           | Lower-middle income | Central and Southern Asia              | 6                   |
| Egypt                      | 31.68 | 96           | Lower-middle income | Northern Africa and Western Asia       | 16                  |
| Iran, Islamic Rep.         | 31.59 | 97           | Upper-middle income | Central and Southern Asia              | 7                   |
| Honduras                   | 30.05 | 98           | Lower-middle income | Latin America and the Caribbean        | 14                  |
| Nigeria                    | 29.72 | 99           | Lower-middle income | Sub-Saharan Africa                     | 9                   |
| Morocco                    | 29.68 | 100          | Lower-middle income | Northern Africa and Western Asia       | 17                  |
| Paraguay                   | 29.64 | 101          | Upper-middle income | Latin America and the Caribbean        | 15                  |
| Senegal                    | 29.38 | 102          | Low income          | Sub-Saharan Africa                     | 10                  |
| Nicaragua                  | 28.92 | 103          | Lower-middle income | Latin America and the Caribbean        | 16                  |
| Zambia                     | 28.91 | 104          | Lower-middle income | Sub-Saharan Africa                     | 11                  |
| Algeria                    | 28.13 | 105          | Upper-middle income | Northern Africa and Western Asia       | 18                  |
| El Salvador                | 27.12 | 106          | Lower-middle income | Latin America and the Caribbean        | 17                  |
| Cambodia                   | 26.57 | 107          | Lower-middle income | Eastern, Southeastern Asia and Oceania | 15                  |
| Pakistan                   | 26.37 | 108          | Lower-middle income | Central and Southern Asia              | 8                   |
| Uganda                     | 25.99 | 109          | Low income          | Sub-Saharan Africa                     | 12                  |
| Lesotho                    | 25.98 | 110          | Lower-middle income | Sub-Saharan Africa                     | 13                  |
| Tanzania, United Rep.      | 25.87 | 111          | Low income          | Sub-Saharan Africa                     | 14                  |
| Venezuela, Bolivarian Rep. | 25.70 | 112          | Upper-middle income | Latin America and the Caribbean        | 18                  |
| Cameroon                   | 25.02 | 113          | Lower-middle income | Sub-Saharan Africa                     | 15                  |
| Liberia                    | 24.45 | 114          | Low income          | Sub-Saharan Africa                     | 16                  |
| Malawi                     | 23.79 | 115          | Low income          | Sub-Saharan Africa                     | 17                  |
| Mali                       | 23.70 | 116          | Low income          | Sub-Saharan Africa                     | 18                  |
| Ethiopia                   | 23.15 | 117          | Low income          | Sub-Saharan Africa                     | 19                  |
| Bangladesh                 | 22.73 | 118          | Lower-middle income | Central and Southern Asia              | 9                   |
| Madagascar                 | 22.70 | 119          | Low income          | Sub-Saharan Africa                     | 20                  |
| Nepal                      | 22.57 | 120          | Low income          | Central and Southern Asia              | 10                  |
| Zimbabwe                   | 22.31 | 121          | Low income          | Sub-Saharan Africa                     | 21                  |
| Mozambique                 | 20.32 | 122          | Low income          | Sub-Saharan Africa                     | 22                  |
| Burundi                    | 19.18 | 123          | Low income          | Sub-Saharan Africa                     | 23                  |
| Congo, Dem. Rep.           | 18.44 | 124          | Low income          | Sub-Saharan Africa                     | 24                  |
| Yemen                      | 11.97 | 125          | Low income          | Northern Africa and Western Asia       | 19                  |

Figure 5  
GTCI scores versus GDP per capita



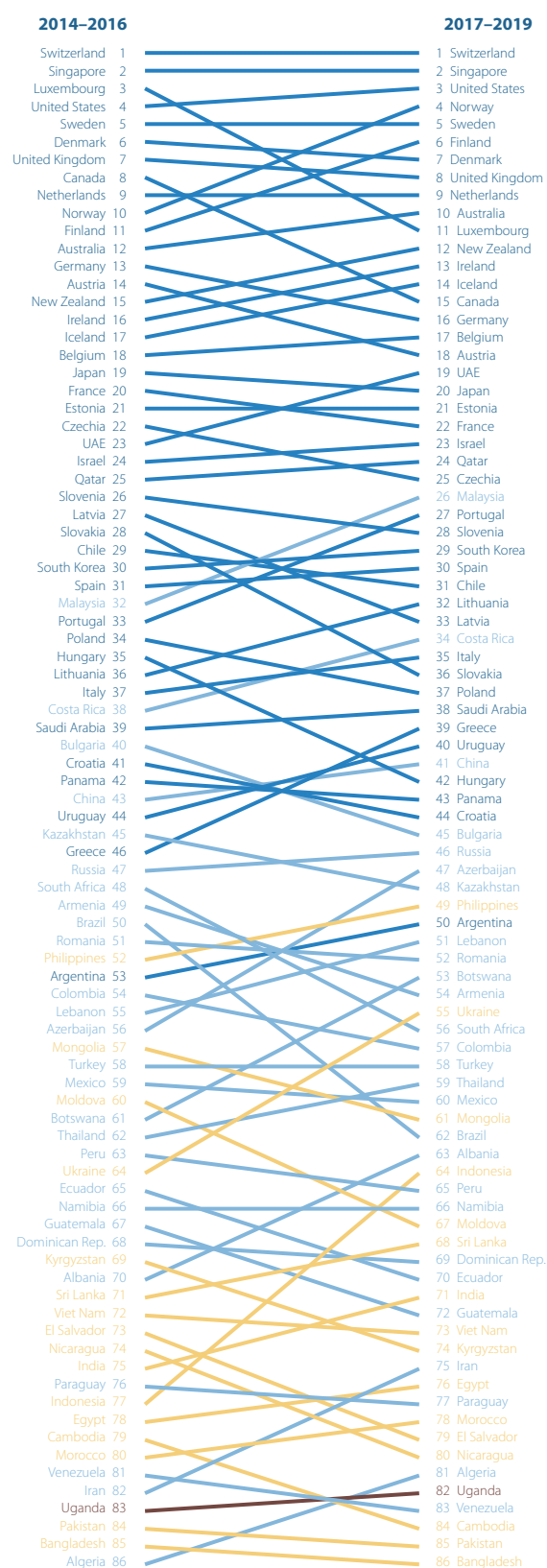
Note: GDP per capita in PPP\$ and population data (represented by the size of the bubbles) are for 2017 or the latest year available. The data are drawn from the World Bank's World Development Indicators database. The trend line is a polynomial of degree two ( $R^2 = 0.77$ ).

Figure 5 (continued)

## GTCI scores versus GDP per capita: ISO-2 country codes

| CODE      | COUNTRY                | CODE      | COUNTRY            | CODE      | COUNTRY            | CODE      | COUNTRY     | CODE      | COUNTRY                    |
|-----------|------------------------|-----------|--------------------|-----------|--------------------|-----------|-------------|-----------|----------------------------|
| <b>AE</b> | United Arab Emirates   | <b>CY</b> | Cyprus             | <b>IN</b> | India              | <b>MN</b> | Mongolia    | <b>RU</b> | Russian Federation         |
| <b>AL</b> | Albania                | <b>CZ</b> | Czech Republic     | <b>IR</b> | Iran, Islamic Rep. | <b>MT</b> | Malta       | <b>RW</b> | Rwanda                     |
| <b>AM</b> | Armenia                | <b>DE</b> | Germany            | <b>IS</b> | Iceland            | <b>MU</b> | Mauritius   | <b>SA</b> | Saudi Arabia               |
| <b>AR</b> | Argentina              | <b>DK</b> | Denmark            | <b>IT</b> | Italy              | <b>MW</b> | Malawi      | <b>SE</b> | Sweden                     |
| <b>AT</b> | Austria                | <b>DO</b> | Dominican Republic | <b>JO</b> | Jordan             | <b>MX</b> | Mexico      | <b>SG</b> | Singapore                  |
| <b>AU</b> | Australia              | <b>DZ</b> | Algeria            | <b>JP</b> | Japan              | <b>MY</b> | Malaysia    | <b>SI</b> | Slovenia                   |
| <b>AZ</b> | Azerbaijan             | <b>EC</b> | Ecuador            | <b>KE</b> | Kenya              | <b>MZ</b> | Mozambique  | <b>SK</b> | Slovakia                   |
| <b>BA</b> | Bosnia and Herzegovina | <b>EE</b> | Estonia            | <b>KG</b> | Kyrgyzstan         | <b>NA</b> | Namibia     | <b>SN</b> | Senegal                    |
| <b>BD</b> | Bangladesh             | <b>EG</b> | Egypt              | <b>KH</b> | Cambodia           | <b>NG</b> | Nigeria     | <b>SV</b> | El Salvador                |
| <b>BE</b> | Belgium                | <b>ES</b> | Spain              | <b>KR</b> | Korea, Rep.        | <b>NI</b> | Nicaragua   | <b>TH</b> | Thailand                   |
| <b>BG</b> | Bulgaria               | <b>ET</b> | Ethiopia           | <b>KW</b> | Kuwait             | <b>NL</b> | Netherlands | <b>TJ</b> | Tajikistan                 |
| <b>BH</b> | Bahrain                | <b>FI</b> | Finland            | <b>KZ</b> | Kazakhstan         | <b>NO</b> | Norway      | <b>TN</b> | Tunisia                    |
| <b>BI</b> | Burundi                | <b>FR</b> | France             | <b>LA</b> | Lao PDR            | <b>NP</b> | Nepal       | <b>TR</b> | Turkey                     |
| <b>BN</b> | Brunei Darussalam      | <b>GB</b> | United Kingdom     | <b>LB</b> | Lebanon            | <b>NZ</b> | New Zealand | <b>TT</b> | Trinidad and Tobago        |
| <b>BR</b> | Brazil                 | <b>GE</b> | Georgia            | <b>LK</b> | Sri Lanka          | <b>OM</b> | Oman        | <b>TZ</b> | Tanzania, United Rep.      |
| <b>BT</b> | Bhutan                 | <b>GH</b> | Ghana              | <b>LR</b> | Liberia            | <b>PA</b> | Panama      | <b>UA</b> | Ukraine                    |
| <b>BW</b> | Botswana               | <b>GM</b> | Gambia             | <b>LS</b> | Lesotho            | <b>PE</b> | Peru        | <b>UG</b> | Uganda                     |
| <b>CA</b> | Canada                 | <b>GR</b> | Greece             | <b>LT</b> | Lithuania          | <b>PH</b> | Philippines | <b>US</b> | United States of America   |
| <b>CD</b> | Congo, Dem. Rep.       | <b>GT</b> | Guatemala          | <b>LU</b> | Luxembourg         | <b>PK</b> | Pakistan    | <b>UY</b> | Uruguay                    |
| <b>CH</b> | Switzerland            | <b>HN</b> | Honduras           | <b>LV</b> | Latvia             | <b>PL</b> | Poland      | <b>VE</b> | Venezuela, Bolivarian Rep. |
| <b>CL</b> | Chile                  | <b>HR</b> | Croatia            | <b>MA</b> | Morocco            | <b>PT</b> | Portugal    | <b>VN</b> | Viet Nam                   |
| <b>CM</b> | Cameroon               | <b>HU</b> | Hungary            | <b>MD</b> | Moldova, Rep.      | <b>PY</b> | Paraguay    | <b>YE</b> | Yemen                      |
| <b>CN</b> | China                  | <b>ID</b> | Indonesia          | <b>ME</b> | Montenegro         | <b>QA</b> | Qatar       | <b>ZA</b> | South Africa               |
| <b>CO</b> | Colombia               | <b>IE</b> | Ireland            | <b>MG</b> | Madagascar         | <b>RO</b> | Romania     | <b>ZM</b> | Zambia                     |
| <b>CR</b> | Costa Rica             | <b>IL</b> | Israel             | <b>ML</b> | Mali               | <b>RS</b> | Serbia      | <b>ZW</b> | Zimbabwe                   |

Figure 6

**GTCI rankings in 2014–2016 and 2017–2019**

Note: Colours refer to income groups, which range from dark blue (high income) to brown (low income).

The calculation of the averages of the two three-year periods is based on the GTCI scores that the countries have achieved. More specifically, the calculation comprises two simple steps: (1) averaging overall GTCI scores for 2014–2016 and 2017–2019, respectively, and (2) computing country rankings based on the resulting averages. The advantage of this approach is that it is straightforward and yields distinct rankings for each country. The drawback is that the scores are not necessarily fully comparable from one year to the next because of changes in data or methodological improvements. An alternative approach that does not suffer from this drawback would be to calculate the averages based on relative rankings rather than absolute scores. That is, rankings for the 86 countries would first be computed for each single year before being averaged across the two three-year periods. These averages would then form the basis for the rankings of 2014–2016 and 2017–2019, respectively.<sup>20</sup> However, a problem with this approach is that it yields many ties (i.e., two or more countries with the same ranking), which makes analysis less clear. In the end, therefore, the results presented in this section stem from an analysis based on the first approach, while the second approach is used to corroborate the findings.

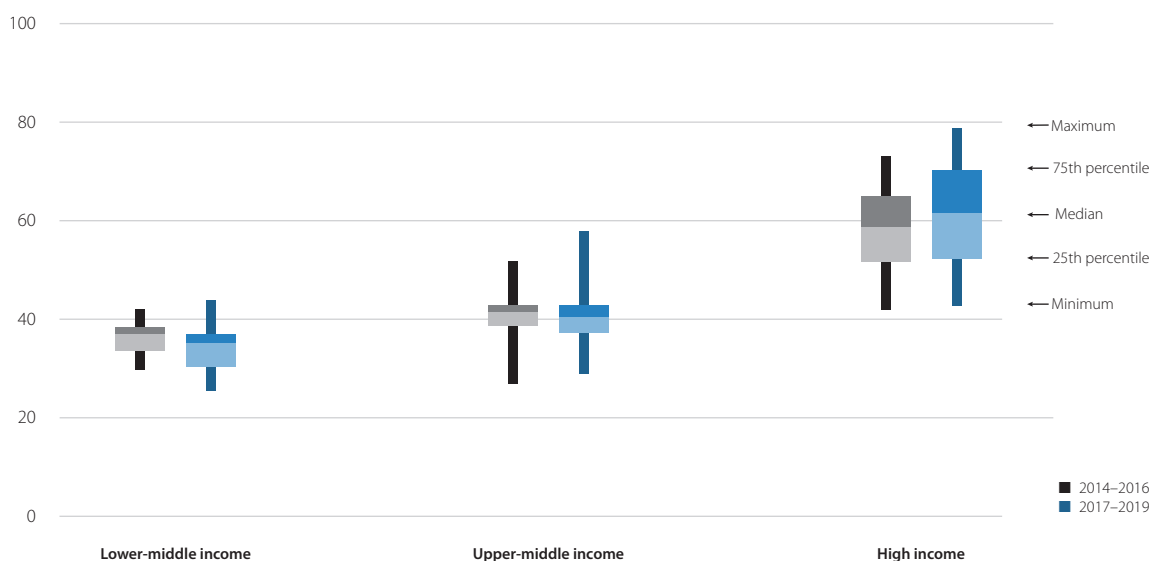
### The Stability of Talent Champions versus the Fluctuations of Talent Laggards

Figure 6 depicts visually how the relative positions of countries in the GTCI have changed in the two periods 2014–2016 and 2017–2019. The left-hand and right-hand columns of the figure rank the countries according to their GTCI scores in the earlier and later periods, respectively. Hence, an upward (downward) slope implies an improvement (deterioration) in the ranking over the two periods, which in turn suggests strengthening (weakening) talent competitiveness.

It is immediately obvious from the figure that, in line with each GTCI edition, better rankings are associated with higher income levels. Thus, in both periods, all but a few of the 43 countries in the top two quartiles are high-income countries,<sup>21</sup> whereas upper-middle-income countries dominate the second quartile and lower-middle-income countries form the largest group in the bottom quartile. This distribution is also clearly reflected in regional terms—for instance, in the prevalence of European countries in the top half of the rankings and all four Sub-Saharan African countries placed in the bottom half.

Focusing on the leading countries, it can be seen that eight of the countries in the top 10 in 2014–2016 are also in that top 10 group in 2017–2019. Switzerland and Singapore are at the peak of the rankings in both periods, while the United States climbs from 4th to 3rd. The three other countries that make strides in the top 10 are Norway, Finland, and Australia, while Sweden and the Netherlands maintain the same rankings in both periods. Denmark and the United Kingdom each slip one position, but the largest decreases are seen in Luxembourg and Canada, which are in the top 10 in the 2014–2016 period but drop out of this group in 2017–2019. However, it should be noted that the big falls in ranking for Luxembourg and Canada are not the result of lower scores—overall GTCI scores rise over the two periods, in fact—but because they are outperformed by other countries.

Figure 7

**GTCI scores in 2014–2016 and 2017–2019 by income group**

Note: Narrow bars indicate maximum and minimum values; wide bars indicate 25th, 50th, and 75th percentiles. Black bars indicate 2014–2016 values and blue bars indicate 2017–2019 values. There was only one low-income country, so that income group has been excluded.

It is also of interest to take a look at how talent competitiveness has evolved in the large emerging countries that form the BRICS group (Brazil, Russia, India, China, and South Africa). The results among the five countries vary considerably. On the one hand, China (up two spots to 41st), India (up four spots to 71st), and Russia (up one spot to 46th) improve their rankings somewhat, with fairly stable performances in all six pillars. On the other hand, Brazil and South Africa register two of the largest declines in the sample: the former's rank plunging 12 positions (from 50th to 62nd), the latter's rank dropping 8 places (from 48th to 56th). In the case of Brazil, the lower ranking is primarily driven by a sub-par performance in the Attract pillar, while, for South Africa, it is the ranking in the Global Knowledge Skills pillar that has fallen the most.

One striking feature of Figure 6 is that, as one's eyes move from top to bottom, the criss-crosses become increasingly prevalent. This suggests, therefore, a general tendency of changes in rankings (especially larger shifts) to be more likely at lower positions than at higher ones. Further in-depth analysis of the frequency and magnitudes of changes in rankings within various percentiles corroborates the visual impression of the figure.

What might be the underlying reasons for this tendency? One plausible explanation is that the set of policies and practices that bring about talent competitiveness in more-developed countries are less susceptible to political and socioeconomic fluctuations. Conversely, talent competitiveness in less-developed countries might be expected to be more vulnerable to short-term vicissitudes, whereby a positive (negative) change—such as more (less) business-friendly regulations and greater (lower) tolerance of minority groups—can have a relatively large impact on its GTCI score. A case in point is talent competitiveness

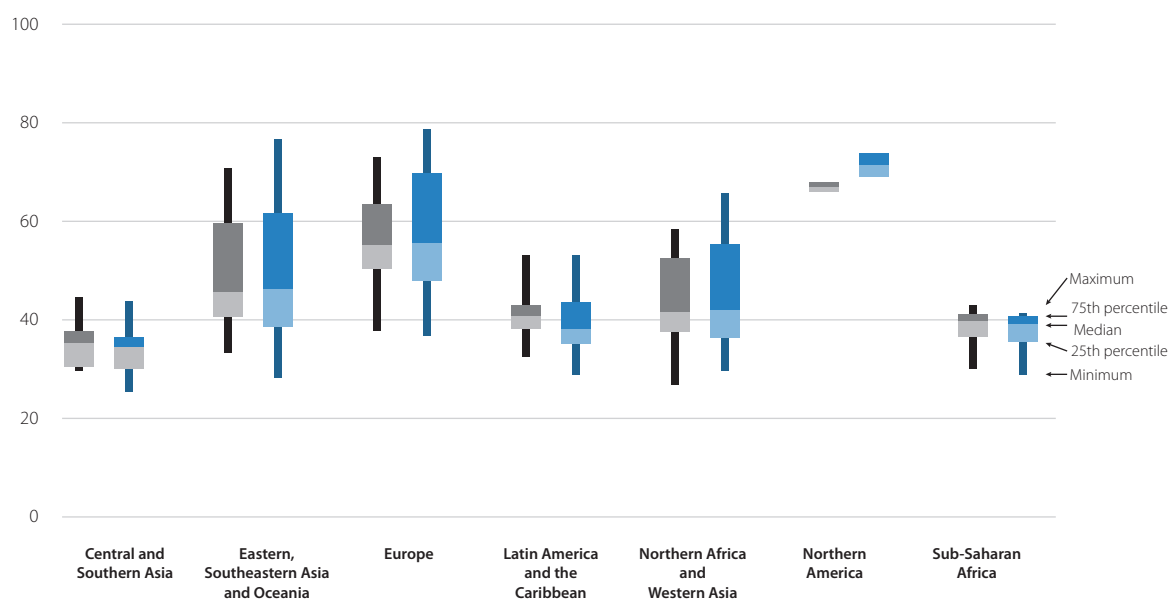
in Indonesia—the country that has climbed the most in the rankings (from 77th to 64th)—which might well have benefited from greater openness and a growing economy within a stable political context. Viewed in this light, it will be interesting to see in the years ahead whether the tendency of lower fluctuations higher up in the rankings will remain as strong against a backdrop of greater political and socioeconomic uncertainties in high-income countries (e.g., the rise in populism in developed countries and Brexit in the United Kingdom).

### **Groups with High Talent Competitiveness Steam Ahead, Leaving the Rest Behind**

Given what we know from Figure 6 and, more generally, from each overall GTCI ranking, it is not surprising to see in Figure 7 that the group of high-income countries achieves significantly higher scores than those of upper-middle-income and lower-middle-income countries (Uganda is the only low-income country in the sample, which is why that particular group is not included in the figure). By the same token, the distribution of scores across regions is also much as expected (Figure 8), with Northern America and Europe leading the way and Sub-Saharan Africa and Central and Southern Asia placed at the bottom.<sup>22</sup>

Introducing a time dimension by comparing the 2014–2016 and 2017–2019 periods leads to some additional findings. In the case of income groups, it can be seen that the distribution of scores for the high-income group has shifted upwards, whereas the trend is the opposite for the upper-middle-income and lower-middle-income groups. More specifically, the 25th, 50th, and 75th percentiles have all increased for high-income countries, whereas they have decreased for the other two income groups, apart from the 75th percentile of upper-middle-income

Figure 8  
GTCI scores in 2014–2016 and 2017–2019 by regional group



Note: Narrow bars indicate maximum and minimum values; wide bars indicate 25th, 50th, and 75th percentiles (the figure for Northern America has only two bars because it contains only two countries: Canada and the United States).

countries (which is virtually the same). The same applies to the group averages (not shown).

The tendencies are similar from a regional perspective, with the higher-scoring regions—Eastern, Southeastern Asia and Oceania; Europe; Northern Africa and Western Asia; and Northern America—improving their medians and means over the two periods, while Central and Southern Asia, Latin America and the Caribbean, and Sub-Saharan Africa have seen their corresponding values decline.

In sum, therefore, there seem to be two opposing trends: talent competitiveness strengthening in groups of countries where it is already comparatively high and weakening in those where it is relatively low. There are presumably several forces at play here. One possible reason for this widening gap is that the economic expansion of several more developed countries in recent years has generated greater demands for talent that, in turn, have led to an uptick in policies and practices that promote talent competitiveness. Coupled with these increased demands, it is also possible that the upward trend of the group of high-income countries reflects a wider recognition among them of the challenge they face in addressing skills gaps and the more resolute measures they have implemented to do so.

As GTCI time series continue to grow, they will offer additional possibilities to deepen the initial approach offered here. Considering ways in which individual countries and groups have changed along specific pillars and variables of the GTCI model sounds like a particularly promising way to identify trends and draw additional policy conclusions about the various components of talent competitiveness can be better fostered. This will remain a key objective of the GTCI report in the coming years.

## ENDNOTES

- 1 Baumol (1996).
- 2 See in particular Quesnay (1758).
- 3 Small and medium enterprises (SMEs) play a major role in most economies, particularly in developing countries. Formal SMEs contribute up to 60% of total employment and up to 40% of national income (GDP) in emerging economies. These numbers are significantly higher when informal SMEs are included. See World Bank (2018).
- 4 Mayer-Haug et al. (2013), p. 1251.
- 5 See for example Lee et al. (2016).
- 6 Mayer-Haug et al. (2013).
- 7 As described in John et al. (2008, p. 138) these traits correspond to :
  - *Openness to experience*: describes the breadth, depth, originality, and complexity of an individual's mental and experimental life
  - *Conscientiousness*: describes socially prescribed impulse control that facilitates task- and goal-orientated behavior
  - *Extraversion*: implies an energetic approach towards the social and material world and includes traits such as sociability, activity, assertiveness, and positive emotionality
  - *Agreeableness*: contrasts a prosocial and communal orientation towards others with antagonism and includes traits such as altruism, tender-mindedness, trust, and modesty
  - *Neuroticism*: contrasts emotional stability and even-temperedness with negative emotionality, such as feeling anxious, nervous, sad, and tense
- 8 Almlund et al. (2011).
- 9 Gerber et al. (2010).
- 10 Freeman & Gosling (2010).
- 11 Kerr et al. (2018, pp. 29–30).

- 12 See, for example, Kelley et al. (2012) in the Global Entrepreneurship Monitor context, and Venkataram (2004).
  - 13 See in particular Zhang et al. (2010, p. 190): 'History has shown that the economic development of a nation depends more on the efficient allocation of entrepreneurial talent than on simply the endowment of such talent. . . . Talented people can thus work well either with government or business. In the latter case, they generally create value for society, while in the former they are mainly engaged in redistributive, or possibly less productive, activities. In the long history of China, talented individuals were generally concentrated in the government. However, the "economic miracle" of China in the past three decades has been due largely to a reallocation of entrepreneurial talent from the government/state and agricultural sectors to business activities.'
  - 14 Zhang et al. (2010, p. 178).
  - 15 The variable is based on a survey conducted by the Global Entrepreneurship Monitor project. Specifically, it refers to the percentage of total early-stage entrepreneurs who indicate that their product or service is new to at least some customers AND that few/no other businesses offer the same product.
  - 16 See Cappelli & Keller (2014); Stahl et al. (2012).
  - 17 The method and results of this audit are the subject of Chapter 6 in this report.
  - 18 The years 2014, 2015, and 2016 refer to the results reported in *The Global Talent Competitiveness Index 2013*, *The Global Talent Competitiveness Index 2014*, and *The Global Talent Competitiveness Index 2015–16*, respectively. The reason for the apparent year discrepancy is as follows. The GTCI reports are always printed towards the end of the calendar year. The first two editions of the GTCI referred to this in their titles (*The Global Talent Competitiveness Index 2013* and *The Global Talent Competitiveness Index 2014*). However, because the launch of the report is held in January, a change was made in the third edition, whereby the title would refer to the launch year. Thus, the third edition became *The Global Talent Competitiveness Index 2015–16*; the two subsequent editions were entitled *The Global Talent Competitiveness Index 2017* and *The Global Talent Competitiveness Index 2018*.
  - 19 One caveat to the results discussed in this section is that the GTCI model has evolved since its first edition, with the possible implication that a score that changes from one year to the next might primarily be a reflection of a methodological adjustment rather than new data. To some extent, this potential problem is addressed by the averaging of scores across three years, since it implies some smoothing of modifications to the GTCI model. Moreover, the analysis focuses on aggregate overall GTCI scores—rather than scores at the pillar level, let alone at the level of indicators—which likewise entails a degree of cancelling-out effects.
  - 20 More concretely, the country with the best average rank for a three-year period would be ranked 1st, the country with the next-best rank would be ranked 2nd, and so on.
  - 21 There were 39 high-income countries in the sample in 2014–2016 and 40 in 2017–2019.
  - 22 To be sure, the higher median of Sub-Saharan Africa against Central and Southern Asia and, for 2017–2019, Latin America and the Caribbean could be seen as unexpected, but this is the result of the low number of Sub-Saharan African countries included in the analysis. Adding more countries from the region to the analysis would lower the group median.
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# Statistical Annex to Chapter 1

## OVERVIEW

The statistics in this annex analyse country performance in the GTCI 2019 in terms of its overall score and also in terms of its pillars and sub-pillars. Performance data are broken down in different ways: by top performers (the top 15 GTCI score leaders) and by region and income group (high, upper-middle, lower-middle, and low income).<sup>1</sup>

Figure A1 presents the dispersion of GTCI scores by income group and region. With respect to the former, although scores are widely dispersed among high-income countries, even the group's poor performers are well above countries in the other income groups (the worst performer of the high-income group is above the median of countries in the upper-middle income group). As for regions, the greatest dispersion of scores can be seen in Europe and in Eastern, Southeastern Asia and Oceania, which is made clear by the range of scores between the 25th and 75th percentiles (as reflected by the wide bars in the figure).

The list of countries that make up the top 25 in this year's index is identical to that of last year, although some of the rankings

within this group have changed. Since the GTCI model of this year is, by and large, unaltered compared with the 2018 edition, the changes in ranking from last year can be considered reliable, particularly in the fourth quartile of countries. For lower positions in the GTCI ranking, one should take into account the two countries (the Plurinational State of Bolivia and the Former Yugoslav Republic of Macedonia) that have dropped out of the GTCI this year because of a lack of available data as well as the eight countries that are new additions to the index.<sup>2</sup>

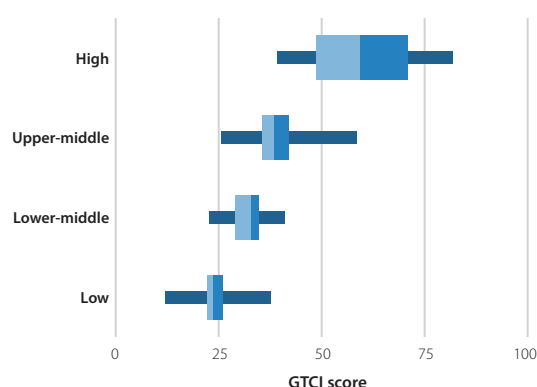
As before, European countries continue to lead the GTCI rankings, with 16 of them in the top 25 and Switzerland maintaining its position at the very top. With respect to non-European countries, two of them—Singapore (2nd) and the United States of America (United States, 3rd)—feature in the top 10, while the seven additional countries in the top 25 are New Zealand (11th), Australia (12th), Canada (15th), the United Arab Emirates (19th), Israel (20th), Japan (22nd), and Qatar (24th).

The non-European leaders of the GTCI rankings can be broadly classified into two groups: economies that have long

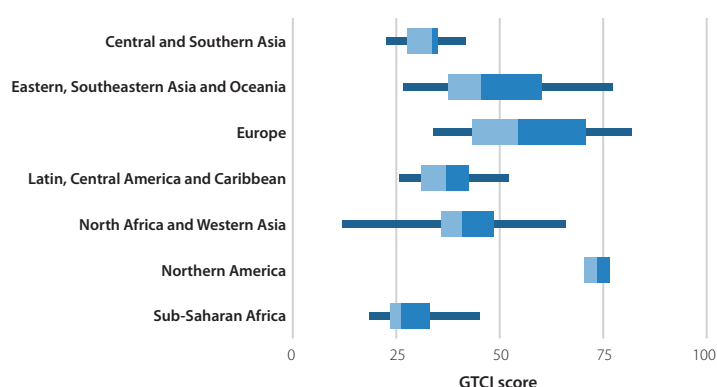
Figure A1

### Country dispersion of GTCI scores

By income group

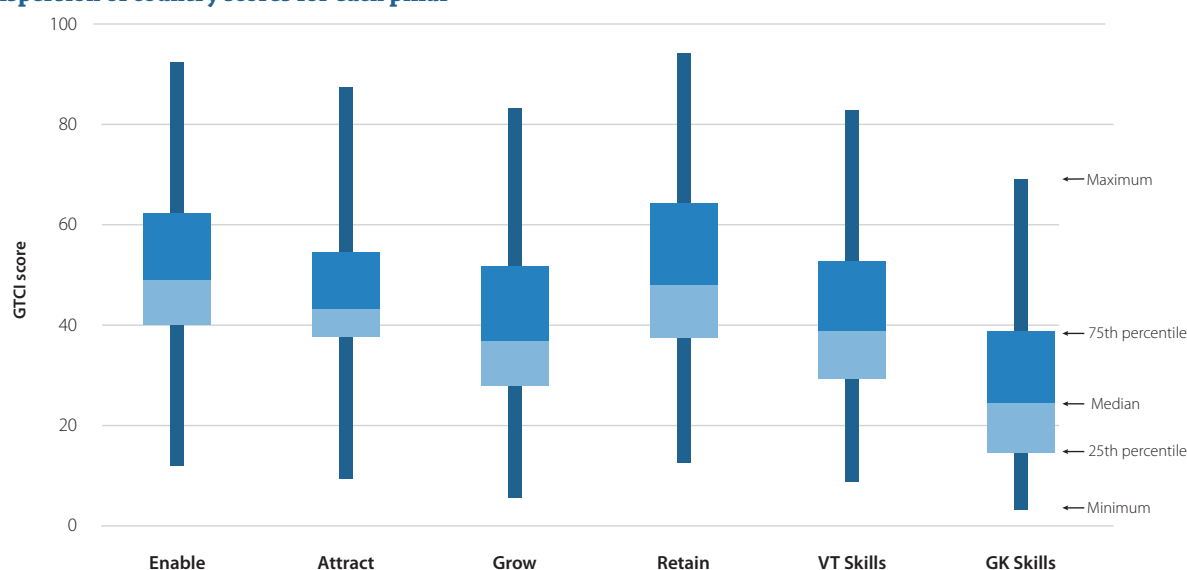


By region



Note: Narrow bars indicate maximum and minimum values; wide bars indicate 25th, 50th, and 75th percentiles (the figure for Northern America has only two bars because it contains only two countries: Canada and the United States).

Figure A2

**Dispersion of country scores for each pillar**

Note: Narrow bars indicate maximum and minimum values; wide bars indicate 25th, 50th, and 75th percentiles. GK Skills = Global Knowledge Skills; VT Skills = Vocational and Technical Skills.

benefitted from global talent (the United States, Canada, and Australia), and economies that have a clear focus on becoming 'talent hubs' (Singapore, the United Arab Emirates, and Qatar).

The large differences in GTCI scores across countries are driven by differences in performance in particular pillars. For instance, the dispersion of scores is largest in the Retain pillar (standard deviation = 20.1) and smallest in the Attract pillar (standard deviation = 14.4), which suggests that the ability of countries to retain talent sets them apart more than their capacity to attract talent. The dispersions of scores in the other pillars, meanwhile, are fairly similar, as can be seen in Figure A2.

The heatmap of Figure A3 (beginning on page 24) presents the overall rankings in the GTCI and those in each pillar, coloured by the quartile to which the rankings of each of the 125 countries belong. A cursory look at the figure makes it clear that countries that are among the best and worst performers in the overall GTCI rankings are also among the best and worst performers in the six pillars. Thus, 25 of the 31 countries that make up the top 25% of the overall GTCI scores (the fourth quartile) are also among the top 25% in at least five of the six pillars. Similarly, 15 of the 31 countries that are in the bottom 25% of the overall GTCI scores (the first quartile) are ranked in the bottom 25% in at least five pillars.

**TOP 15 COUNTRIES IN THE GTCI 2019**

Almost all the countries ranked in the top 15 in the GTCI 2019 were in that highest-performing group in last year's index. In fact, only one country—Ireland (16th, down from 13th)—has dropped out of the top 15, with Germany (14th, up from 19th) being the new addition to the list. As would be expected, the 15 countries with the highest overall GTCI scores typically perform well in each of the six pillars of the GTCI model. More specifically, 13 of the 15 countries are also among the top 15 performers in at least four of the six pillars. The one pillar where several of the

top 15 countries have relatively lower rankings is Vocational and Technical Skills.

As for high-performing countries just outside the top 15, many of them are leaders in specific pillars. For instance, Austria (18th overall) has the third-highest score in the Vocational and Technical Skills pillar. Similarly, the United Arab Emirates (19th) has the third-highest score in the Attract pillar, with Qatar (24th) also being a strong magnet for talent. Other countries that stand out in certain pillars are Israel (20th), which is a top performer in the Global Knowledge Skills pillar, and Japan (22nd), which scores well in the Enable pillar. Further down the rankings, it is interesting to note that Bahrain (40th) is among the top-performing countries when it comes to attracting talent.

For a second year in a row, Switzerland, Singapore, and the United States occupy the first three positions in the overall GTCI. Switzerland consistently ranks among the top-performing countries in each pillar; in fact, its position in 5th place in the Attract pillar is the lowest ranking it achieves. While Singapore's performance across rankings is more varied, it is the highest-scoring country in no fewer than three pillars: Enable, Attract, and Global Knowledge Skills (Table A1). The United States, meanwhile, excels in growing talent and in harnessing the skills present in the country (scoring highly in both pillars related to Output).

**Switzerland** (1st) is at the top overall by virtue of its strong performance across all six pillars of the GTCI model. It is the global leader with respect to the Retain and Vocational and Technical Skills pillars and runner-up in the Enable and Grow pillars. It is also among the top-performing countries in the Global Knowledge Skills (4th) and Attract (5th) pillars. Switzerland also achieves high scores in various sub-pillars. It is the top performer with respect to Lifelong Learning, Sustainability, and Employability. Its weakest performances, meanwhile, are in the sub-pillars Internal Openness (14th) and Access to Growth Opportunities (10th). In the former case, the score is dragged down by gender equality

variables such as Female graduates (85th) and Gender earnings gap (27th); in the latter case, it performs relatively poorly with respect to Use of virtual social networks (41st).

**Singapore** (2nd) is the highest-ranked country in the Enable, Attract, and Global Knowledge Skills pillars, with uniformly high scores in the top 10 of each of the underlying sub-pillars. The city-state is also one of the strongest performers with respect to the pillar on Vocational and Technical Skills—despite its low rankings on Workforce with secondary education and Population with secondary education (69th in both cases). Singapore's lowest pillar rank is in Retain (26th), where there is room for improvement in both sub-pillars (Sustainability, 23rd, and Lifestyle, 31st).

**The United States** (3rd) continues to stand out as a top performer in the Grow pillar (1st) as a result of its high ranking in all three sub-pillars: Formal Education (3rd), Lifelong Learning (2nd), and Access to Growth Opportunities (1st). This allows it to have an outstanding pool of Vocational and Technical Skills (2nd) and Global Knowledge Skills (3rd). The United States is also a global leader in terms of enabling talent (4th), with the Market Landscape (1st) and Business and Labour Landscape (4th) sub-pillars being particularly strong. Its lowest rankings are in the pillars related to Attract (14th) and Retain (13th). In the former case, the performance is dragged down by gender equality variables, among others. In the latter case, it has relatively low scores with respect to the Lifestyle sub-pillar (29th).

**Norway** (4th) is one of the top countries in retaining its talent (2nd), which is driven by wide access to social protection and benefits (it is 2nd in Sustainability) and also by a high-quality Lifestyle (4th), particularly in terms of personal health and safety. The country is also one of the global leaders when it comes to growing talent (5th) and harnessing vocational and technical skills (5th). The two pillars with the most scope for improvement are Attract and Global Knowledge Skills (both 13th): the former is dragged down by a weak performance in External Openness (31st) and the latter would be boosted by greater innovation and entrepreneurship (Norway ranks 18th in the Talent Impact sub-pillar).

**Denmark** (5th) is a top performer in the Enable (3rd) and Retain (4th) pillars. In the former case, the strong Regulatory and Market Landscapes (ranking in 10th in both) are complemented by an exemplary Labour and Business Landscape (3rd) that combines flexible labour markets with comprehensive social protection. As for retaining talent, the country boasts strong performances in both the Sustainability (7th) and Lifestyle (6th) sub-pillars. The only pillar where Denmark ranks outside the top 10 is that related to attracting talent (17th), with particular room for improvement in luring foreign talent and strengthening gender equality.

**Finland** (6th) is one of the leading countries in the Grow and Vocational and Technical Skills pillars, in both of which it is ranked 4th. Its strong performance in these areas can primarily be attributed to an education system that does not only provide world-class schooling (it ranks 2nd in the Formal Education sub-pillar), but that is also one of the best at matching the skills of people with the needs of the economy (2nd in Employability). In

Table A1

### Countries with highest GTCI scores by pillar

| PILLAR                                      | TOP 3 COUNTRIES                             |
|---------------------------------------------|---------------------------------------------|
| <b>Enable</b>                               | Singapore, Switzerland, Denmark             |
| <b>Attract</b>                              | Singapore, Luxembourg, United Arab Emirates |
| <b>Grow</b>                                 | United States, Switzerland, Netherlands     |
| <b>Retain</b>                               | Switzerland, Norway, Austria                |
| <b>Vocational and Technical (VT) Skills</b> | Switzerland, United States, Germany         |
| <b>Global Knowledge (GK) Skills</b>         | Singapore, Iceland, United States           |

addition, the country ranks high in the Retain pillar (5th) by virtue of its strong social safety net and its high level of personal safety. Finland performs less well in the Enable (14th), Attract (15th), and Global Knowledge Skills (15th) pillars. In the case of attracting talent, there is a clear discrepancy between Finland's strength in Internal Openness (2nd) and its weakness in External Openness (33rd).

**Sweden** (7th) performs consistently well across all six pillars, belonging to the top 15 of each of them. One of the country's strengths is in retaining talent (6th in the Retain pillar), with a particularly strong showing in the Lifestyle (3rd) sub-pillar. Excellent Access to Growth Opportunities (3rd) through high levels of co-operation and collaboration, and good possibilities for Lifelong Learning (7th), contribute to the country being a top performer in the Grow (7th) pillar. The only pillar where Sweden is ranked outside the top 10—Vocational and Technical Skills (11th)—suggests that two areas for improvement are secondary education and the skills gap between labour market demand and workforce supply.

**The Netherlands** (8th) is one of the world's leading countries in growing talent (3rd). This is the result of high scores in all three sub-pillars: Formal Education (4th), Lifelong Learning (3rd), and Access to Growth Opportunities (2nd). The country is also a top performer in the Retain (7th) and Vocational and Technical Skills (6th) pillars, particularly by virtue of robust Sustainability (5th) in the former case and talent that matches very well the needs of the economy (it ranks 5th in Employability) in the latter case. That the Netherlands does not rank higher in the overall GTCI is mainly due to it lagging slightly behind in attracting talent (16th) and in its pool of Global Knowledge Skills (17th).

**The United Kingdom** (9th) is a consistently strong performer in all pillars except Vocational and Technical Skills (27th). Its highest ranking is in respect to the pool of Global Knowledge Skills (5th), where it performs well in both the High-Level Skills (10th) and Talent Impact (6th) sub-pillars. The United Kingdom is also among the top 10 leading countries in the Enable, Attract, and Grow pillars (9th in all three), which can mainly be attributed to a strong business environment, an ability to appeal to foreign resources and talent, and world-class education institutions. Apart from a need to strengthen both Mid-Level Skills (40th) and Employability (23rd) with respect to Vocational and Technical

Figure A3

**Heatmap: Rankings on GTCI overall and by pillar**

| COUNTRY                                              | GTCI RANKING | ENABLE | ATTRACT | GROW | RETAIN | VT SKILLS | GK SKILLS |
|------------------------------------------------------|--------------|--------|---------|------|--------|-----------|-----------|
| Countries ABOVE the median in the overall GTCI score |              |        |         |      |        |           |           |
| Switzerland                                          | 1            | 2      | 5       | 2    | 1      | 1         | 4         |
| Singapore                                            | 2            | 1      | 1       | 11   | 26     | 7         | 1         |
| United States                                        | 3            | 4      | 14      | 1    | 13     | 2         | 3         |
| Norway                                               | 4            | 7      | 13      | 5    | 2      | 5         | 13        |
| Denmark                                              | 5            | 3      | 17      | 6    | 4      | 10        | 7         |
| Finland                                              | 6            | 14     | 15      | 4    | 5      | 4         | 15        |
| Sweden                                               | 7            | 10     | 10      | 7    | 6      | 11        | 10        |
| Netherlands                                          | 8            | 13     | 16      | 3    | 7      | 6         | 17        |
| United Kingdom                                       | 9            | 9      | 9       | 9    | 11     | 27        | 5         |
| Luxembourg                                           | 10           | 17     | 2       | 19   | 8      | 26        | 9         |
| New Zealand                                          | 11           | 5      | 4       | 14   | 15     | 20        | 16        |
| Australia                                            | 12           | 19     | 8       | 10   | 12     | 21        | 8         |
| Iceland                                              | 13           | 18     | 18      | 16   | 9      | 12        | 2         |
| Germany                                              | 14           | 8      | 20      | 13   | 10     | 3         | 23        |
| Canada                                               | 15           | 11     | 7       | 12   | 18     | 19        | 12        |
| Ireland                                              | 16           | 16     | 11      | 15   | 16     | 13        | 11        |
| Belgium                                              | 17           | 21     | 19      | 8    | 14     | 15        | 18        |
| Austria                                              | 18           | 15     | 21      | 17   | 3      | 9         | 25        |
| United Arab Emirates                                 | 19           | 12     | 3       | 22   | 24     | 8         | 49        |
| Israel                                               | 20           | 22     | 49      | 21   | 19     | 17        | 6         |
| France                                               | 21           | 30     | 33      | 18   | 17     | 18        | 19        |
| Japan                                                | 22           | 6      | 45      | 20   | 20     | 23        | 26        |
| Estonia                                              | 23           | 24     | 30      | 26   | 28     | 28        | 14        |
| Qatar                                                | 24           | 20     | 6       | 23   | 36     | 14        | 52        |
| Czech Republic                                       | 25           | 25     | 28      | 25   | 22     | 22        | 32        |
| Malta                                                | 26           | 26     | 24      | 33   | 21     | 34        | 22        |
| Malaysia                                             | 27           | 23     | 26      | 29   | 34     | 16        | 29        |
| Portugal                                             | 28           | 31     | 27      | 31   | 23     | 41        | 33        |
| Slovenia                                             | 29           | 38     | 47      | 34   | 27     | 29        | 24        |
| South Korea                                          | 30           | 27     | 81      | 28   | 39     | 37        | 20        |
| Spain                                                | 31           | 37     | 39      | 32   | 25     | 48        | 30        |
| Chile                                                | 32           | 35     | 40      | 27   | 40     | 32        | 38        |
| Cyprus                                               | 33           | 44     | 29      | 57   | 42     | 31        | 21        |
| Costa Rica                                           | 34           | 39     | 25      | 30   | 38     | 36        | 60        |
| Lithuania                                            | 35           | 29     | 50      | 36   | 32     | 58        | 27        |
| Brunei Darussalam                                    | 36           | 28     | 37      | 65   | 48     | 24        | 51        |
| Latvia                                               | 37           | 40     | 51      | 46   | 37     | 42        | 31        |
| Italy                                                | 38           | 53     | 84      | 35   | 30     | 30        | 39        |
| Saudi Arabia                                         | 39           | 34     | 41      | 52   | 33     | 38        | 54        |
| Bahrain                                              | 40           | 33     | 12      | 39   | 57     | 52        | 78        |
| Slovakia                                             | 41           | 45     | 56      | 40   | 35     | 39        | 42        |
| Poland                                               | 42           | 42     | 64      | 43   | 46     | 35        | 45        |
| Azerbaijan                                           | 43           | 48     | 44      | 81   | 41     | 25        | 68        |
| Greece                                               | 44           | 76     | 86      | 47   | 31     | 49        | 36        |
| China                                                | 45           | 43     | 76      | 24   | 62     | 67        | 43        |
| Uruguay                                              | 46           | 46     | 34      | 38   | 29     | 86        | 73        |
| Mauritius                                            | 47           | 32     | 42      | 59   | 50     | 43        | 81        |
| Oman                                                 | 48           | 51     | 23      | 79   | 44     | 62        | 80        |
| Russia                                               | 49           | 81     | 109     | 44   | 52     | 47        | 28        |
| Trinidad and Tobago                                  | 50           | 54     | 38      | 64   | 56     | 44        | 71        |
| Montenegro                                           | 51           | 61     | 58      | 67   | 64     | 33        | 48        |
| Panama                                               | 52           | 69     | 22      | 71   | 51     | 64        | 74        |
| Hungary                                              | 53           | 50     | 78      | 83   | 45     | 53        | 46        |
| Bulgaria                                             | 54           | 56     | 89      | 62   | 47     | 63        | 41        |
| Croatia                                              | 55           | 83     | 99      | 55   | 49     | 46        | 47        |
| Kazakhstan                                           | 56           | 57     | 63      | 78   | 54     | 56        | 50        |
| Jordan                                               | 57           | 55     | 48      | 82   | 53     | 70        | 61        |
| Philippines                                          | 58           | 64     | 62      | 41   | 92     | 73        | 34        |
| Lebanon                                              | 59           | 87     | 93      | 61   | 84     | 40        | 35        |
| Argentina                                            | 60           | 88     | 60      | 37   | 55     | 59        | 77        |
| Armenia                                              | 61           | 65     | 72      | 101  | 65     | 50        | 44        |
| Botswana                                             | 62           | 49     | 35      | 49   | 94     | 85        | 67        |
| Ukraine                                              | 63           | 96     | 105     | 68   | 66     | 45        | 37        |

(continued on next page)

Figure A3 (continued)

**Heatmap: Rankings on GTCI overall and by pillar**

| COUNTRY                                              | GTCI RANKING | ENABLE | ATTRACT | GROW | RETAIN | VT SKILLS | GK SKILLS |
|------------------------------------------------------|--------------|--------|---------|------|--------|-----------|-----------|
| Countries BELOW the median in the overall GTCI score |              |        |         |      |        |           |           |
| Kuwait                                               | 64           | 62     | 43      | 99   | 43     | 75        | 83        |
| Colombia                                             | 65           | 59     | 90      | 50   | 77     | 57        | 75        |
| Thailand                                             | 66           | 47     | 70      | 72   | 76     | 83        | 58        |
| Indonesia                                            | 67           | 60     | 65      | 51   | 87     | 51        | 94        |
| Serbia                                               | 68           | 85     | 94      | 58   | 71     | 54        | 62        |
| Romania                                              | 69           | 74     | 98      | 77   | 59     | 79        | 53        |
| Mexico                                               | 70           | 82     | 87      | 42   | 79     | 74        | 66        |
| South Africa                                         | 71           | 71     | 52      | 45   | 102    | 68        | 64        |
| Brazil                                               | 72           | 79     | 80      | 54   | 63     | 88        | 76        |
| Rwanda                                               | 73           | 36     | 36      | 73   | 90     | 98        | 108       |
| Turkey                                               | 74           | 66     | 113     | 66   | 60     | 90        | 57        |
| Albania                                              | 75           | 67     | 53      | 75   | 70     | 61        | 98        |
| Georgia                                              | 76           | 52     | 92      | 107  | 61     | 80        | 56        |
| Mongolia                                             | 77           | 84     | 79      | 85   | 81     | 100       | 40        |
| Namibia                                              | 78           | 58     | 31      | 80   | 97     | 101       | 79        |
| Peru                                                 | 79           | 89     | 71      | 76   | 86     | 69        | 70        |
| India                                                | 80           | 70     | 95      | 48   | 96     | 72        | 72        |
| Tajikistan                                           | 81           | 98     | 101     | 100  | 58     | 55        | 85        |
| Sri Lanka                                            | 82           | 68     | 104     | 90   | 73     | 65        | 88        |
| Bhutan                                               | 83           | 41     | 82      | 86   | 75     | 92        | 119       |
| Tunisia                                              | 84           | 109    | 96      | 92   | 67     | 81        | 55        |
| Kenya                                                | 85           | 75     | 54      | 70   | 110    | 76        | 91        |
| Bosnia and Herzegovina                               | 86           | 94     | 111     | 63   | 82     | 66        | 95        |
| Ecuador                                              | 87           | 103    | 107     | 56   | 78     | 77        | 90        |
| Guatemala                                            | 88           | 78     | 73      | 53   | 98     | 95        | 96        |
| Moldova                                              | 89           | 92     | 100     | 87   | 74     | 91        | 65        |
| Dominican Republic                                   | 90           | 73     | 55      | 104  | 91     | 93        | 87        |
| Lao PDR                                              | 91           | 72     | 59      | 108  | 69     | 104       | 86        |
| Viet Nam                                             | 92           | 80     | 91      | 89   | 85     | 109       | 69        |
| Gambia                                               | 93           | 63     | 32      | 97   | 101    | 82        | 122       |
| Ghana                                                | 94           | 77     | 46      | 74   | 103    | 94        | 102       |
| Kyrgyzstan                                           | 95           | 104    | 103     | 109  | 80     | 60        | 82        |
| Egypt                                                | 96           | 105    | 116     | 102  | 68     | 103       | 59        |
| Iran                                                 | 97           | 107    | 123     | 94   | 72     | 78        | 63        |
| Honduras                                             | 98           | 111    | 75      | 69   | 109    | 84        | 107       |
| Nigeria                                              | 99           | 95     | 61      | 103  | 120    | 71        | 97        |
| Morocco                                              | 100          | 100    | 97      | 96   | 88     | 115       | 93        |
| Paraguay                                             | 101          | 110    | 74      | 95   | 93     | 108       | 99        |
| Senegal                                              | 102          | 97     | 67      | 84   | 105    | 102       | 111       |
| Nicaragua                                            | 103          | 101    | 77      | 98   | 89     | 114       | 121       |
| Zambia                                               | 104          | 93     | 57      | 112  | 107    | 99        | 109       |
| Algeria                                              | 105          | 114    | 117     | 121  | 83     | 87        | 89        |
| El Salvador                                          | 106          | 99     | 115     | 91   | 100    | 106       | 114       |
| Cambodia                                             | 107          | 90     | 83      | 119  | 99     | 119       | 117       |
| Pakistan                                             | 108          | 115    | 121     | 105  | 108    | 89        | 92        |
| Uganda                                               | 109          | 86     | 68      | 110  | 118    | 120       | 115       |
| Lesotho                                              | 110          | 91     | 102     | 93   | 114    | 105       | 124       |
| Tanzania                                             | 111          | 108    | 66      | 106  | 111    | 121       | 113       |
| Venezuela                                            | 112          | 125    | 124     | 60   | 95     | 96        | 84        |
| Cameroon                                             | 113          | 117    | 106     | 88   | 119    | 112       | 101       |
| Liberia                                              | 114          | 112    | 69      | 114  | 112    | 118       | 123       |
| Malawi                                               | 115          | 106    | 108     | 116  | 106    | 123       | 105       |
| Mali                                                 | 116          | 113    | 110     | 111  | 113    | 113       | 118       |
| Ethiopia                                             | 117          | 116    | 114     | 120  | 104    | 122       | 100       |
| Bangladesh                                           | 118          | 102    | 122     | 122  | 116    | 116       | 103       |
| Madagascar                                           | 119          | 121    | 88      | 118  | 124    | 110       | 106       |
| Nepal                                                | 120          | 119    | 120     | 115  | 115    | 107       | 110       |
| Zimbabwe                                             | 121          | 118    | 119     | 113  | 121    | 111       | 104       |
| Mozambique                                           | 122          | 120    | 85      | 124  | 117    | 125       | 116       |
| Burundi                                              | 123          | 122    | 118     | 117  | 123    | 117       | 125       |
| Congo, Dem. Rep.                                     | 124          | 124    | 112     | 123  | 125    | 97        | 120       |
| Yemen                                                | 125          | 123    | 125     | 125  | 122    | 124       | 112       |

Note: The darkest blue means the country belongs to the 4th quartile (best performers); medium colour = 3rd quartile; pale colour = 2nd quartile; palest colour = 1st quartile (worst performers). GK Skills = Global Knowledge Skills; VT Skills = Vocational and Technical Skills.

Skills, the country still lags behind in Internal Openness (24th)—particularly in the indicators related to gender equality.

**Luxembourg** (10th) owes a great part of its position in the top 10 of the GTCI to its excellent performance in Attract (2nd), which itself is the result of combining strong External Openness (3rd) with good Internal Openness (8th). As a small country that has built an international reputation as a centre of finance and industry, Luxembourg also excels at retaining its domestic talent (8th in this pillar). It also has a competitive pool of Global Knowledge Skills (9th) that rests on it being a highly innovative and entrepreneurial country. There are many areas that need improvement, however—notably strengthening Formal Education (55th) in the Grow pillar and ensuring the Employability (32nd, in Vocational and Technical Skills) of domestic talent in the private sector.

**New Zealand** (11th) is a global leader with respect to the Enable (5th) and Attract (4th) pillars. Its ability to attract both foreign and domestic talent is strong (ranking 7th in both External Openness and Internal Openness), while it performs particularly well in the Enable sub-pillars related to Regulatory Landscape (2nd) and Business and Labour Landscape (6th). Although the country is ranked 1st in the Ease of doing business indicator, there is room for improvement in other variables of the Market Landscape (23rd) sub-pillar, such as Competition intensity and Cluster development (both 42nd). The pillar that is holding back New Zealand's overall rank the most is Vocational and Technical Skills (20th), where a relatively weak pool of Mid-Level Skills (41st) suggests the need for additional efforts to raise secondary education and improve vocational and technical training.

**Australia** (12th) makes it into the top 10 in three pillars: Attract (8th), Grow (10th), and Global Knowledge Skills (8th). With respect to attracting talent, the country performs well in both External Openness (9th) and Internal Openness (10th). As for growing talent, the pillar's result is driven by Australia being top of the class in Formal Education (1st), whereas the sub-pillars related to Lifelong Learning and Access to Growth Opportunities (both 17th) could improve. The strong pool of Global Knowledge Skills is a result of good performances in both High-Level Skills (11th) and Talent Impact (8th). Enable (19th) and Vocational and Technical Skills (21st) are the two pillars where Australia ranks lowest, mainly as a result of sub-par levels of Cluster development (48th), Labour-employer cooperation (67th), and Mid-Level Skills (33rd).

**Iceland** (13th) is behind only Singapore when it comes Global Knowledge Skills, with a good pool of higher competences and the ability to innovate (ranking 5th in both the High-Level Skills and Talent Impact sub-pillars). The country is also a top 10 performer in retaining talent (9th) as a result of both strong social protection (12th in Sustainability) and a desirable quality of life (7th in Lifestyle). Its solid performance in Vocational and Technical Skills (12th) is driven by very good Employability (9th), whereas it is dragged down by relatively low Mid-Level Skills (30th). Iceland is the world's highest-ranked country in terms of attracting domestic talent (1st in Internal Openness), but has a significantly lower ability to lure foreign resources and talent (52nd in External

Openness), which means that there is still room for improvement in attracting talent (it ranks 18th in the Attract pillar).

**Germany** (14th) breaks into the top 15—at the expense of Ireland—in the GTCI 2019. Its prime asset is a world-class pool of Vocational and Technical Skills (3rd), with high Mid-Level Skills (3rd) and a strong ability to match labour market demand and workforce supply (8th in Employability). Germany is also a leading country in enabling talent (8th), which is primarily driven by a favourable Market Landscape (3rd). Whereas it makes solid performances in the Grow (13th) and Retain (10th) pillars, it is outside the top 15 when it comes to Attract (20th) and Global Knowledge Skills (23rd). In the case of attracting talent, there is ample room for improvement in both the External Openness (17th) and Internal Openness (18th) sub-pillars. Similarly, the pool of Global Knowledge Skills is a result of relatively weak performances in both High-Level Skills (26th) and Talent Impact (29th).

**Canada** (15th) is a top 10 performer for attracting talent (7th), which is achieved as a result of high levels of External Openness (10th) and Internal Openness (5th). A favourable Regulatory Landscape (7th) and positive Business and Labour Landscape (8th) contribute to a good showing in enabling talent (11th), despite a lacklustre Market Landscape (21st). A leading country in terms of High-Level Skills (4th), Canada's pool of Global Knowledge Skills (12th) is dragged down by a relatively low Talent Impact (22nd). In the case of Vocational and Technical Skills (19th), however, it is the Mid-Level Skills (46th) sub-pillar that lowers the ranking, whereas the country performs relatively well in linking the education system to the labour market needs (12th in Employability). There is also scope for improvement in retaining talent (18th), particularly as it relates to Lifestyle (24th) indicators.

## ANALYSIS BY INCOME AND REGIONAL GROUPS

The GTCI top performers are all high-income countries. In fact, there is only one country in the fourth quartile that is not classified as a high-income country—Malaysia (overall rank: 27th). Another manifestation of the dominance of high-income countries in the upper half of the rankings is that all but one have GTCI scores above the median (the exception, Kuwait, is the first country below it). As shown in Table A2, the Philippines leads the group of lower-middle-income countries and Rwanda is the leading low-income country.

Apart from Europe and Northern America, the regions comprising (1) Eastern, Southeastern Asia and Oceania and (2) Northern Africa and Western Asia feature in the top 31 countries (i.e., the fourth quartile), with five and three countries, respectively. By contrast, no country from Central and Southern Asia, Latin America and the Caribbean, or Sub-Saharan Africa is found in the top quartile (although Chile—ranked 32nd—is just outside it).

## Income Groups

It has already been seen in Chapter 1 that there is a strong correlation between the GTCI score and GDP per capita (Chapter 1 Figure 5). This association can also be seen in Annex Figure A4, which shows average scores by pillar for each income group. A cursory glance at these pillar-specific performances

Table A2

**Countries with highest GTCI scores by income and regional group**

| COMPARISON GROUP                       | TOP 3 COUNTRIES                       |
|----------------------------------------|---------------------------------------|
| <b>By region</b>                       |                                       |
| Central and Southern Asia              | Kazakhstan, India, Tajikistan         |
| Eastern, Southeastern Asia and Oceania | Singapore, New Zealand, Australia     |
| Europe                                 | Switzerland, Norway, Denmark          |
| Latin America and the Caribbean        | Chile, Costa Rica, Uruguay            |
| Northern America                       | United States, Canada                 |
| Northern Africa and Western Asia       | United Arab Emirates, Israel, Qatar   |
| Sub-Saharan Africa                     | Mauritius, Botswana, South Africa     |
| <b>By income group</b>                 |                                       |
| High-income countries                  | Switzerland, Singapore, United States |
| Upper-middle-income countries          | Malaysia, Costa Rica, Azerbaijan      |
| Lower-middle-income countries          | Philippines, Ukraine, Indonesia       |
| Low-income countries                   | Rwanda, Gambia, Senegal               |

is enough—yet again—to underline the dominance of high-income countries in talent competitiveness, as the average scores of the high-income group in the six pillars are considerably higher than the corresponding scores of the other income groups. The chart suggests further that the group is particularly strong with respect to retaining talent. Indeed, of the 49 high-income countries included in GTCI 2019 the lowest-ranked country in the Retain pillar can be found in position 57. This finding is not surprising, though, as high levels in the two sub-pillars of Retain—Sustainability and Lifestyle—would be expected to be closely

associated with high-income countries in particular. Three pillars where high-income countries are somewhat less dominant are Attract, Grow, and Global Knowledge Skills. In some cases, this might be attributed to the countries in question being primarily engaged in the production of commodities rather than in extensive knowledge-intensive industries and services.

It is equally clear from Figure A4 that the dominance of higher-income groups over lower-income groups across pillars extends beyond high-income countries alone. Thus, the average upper-middle-income country performs better in all six pillars than its lower-middle-income country counterpart, which, in turn, has higher scores than the average low-income country. It is, however, also apparent that the gaps between these three income groups are narrower than the distance they each have to the high-income group. Indeed, average score differences between upper-middle-income countries and high-income countries are greater in each of the six pillars than they are between upper-middle-income countries and low-income countries.

Turning now to country performances within each income group, Table A3–A6 on pages 28–30 tabulates the best-performing (top 10) countries in each pillar by income group. What is immediately striking by a first look at all panels of the table is how frequently the same countries recur. That is, countries that are in the top 10 of their income group are often among the top performers in the respective pillars. For instance, each of the top 5 high-income countries—Switzerland, Singapore, the United States, Norway, and Denmark—feature in the top of at least four of the six pillars. This is clearly expected insofar as the calculation of the GTCI is based on the average pillar scores, but it also suggests the degree to which synergies occur across pillars.

A second observation is that the Attract pillar is more likely than other pillars to include countries that are outside the top 10 of each income group. Thus, five high-income countries,

Figure A4

**Average pillar scores, by income group**

Note: The figure shows the average scores for each pillar of all countries within each group. GK Skills = Global Knowledge Skills; VT Skills = Vocational and Technical Skills.



Table A3

**Best performers by income group: High-income countries (49 countries)**

| GTCI               | ENABLE             | ATTRACT            | GROW               | RETAIN          | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--------------------|--------------------|--------------------|--------------------|-----------------|---------------------------------|-------------------------|
| Switzerland (1)    | Singapore (2)      | Singapore (2)      | United States (3)  | Switzerland (1) | Switzerland (1)                 | Singapore (2)           |
| Singapore (2)      | Switzerland (1)    | Luxembourg (10)    | Switzerland (1)    | Norway (4)      | United States (3)               | Iceland (13)            |
| United States (3)  | Denmark (5)        | UAE (19)           | Netherlands (8)    | Austria (18)    | Germany (14)                    | United States (3)       |
| Norway (4)         | United States (3)  | New Zealand (11)   | Finland (6)        | Denmark (5)     | Finland (6)                     | Switzerland (1)         |
| Denmark (5)        | New Zealand (11)   | Switzerland (1)    | Norway (4)         | Finland (6)     | Norway (4)                      | United Kingdom (9)      |
| Finland (6)        | Japan (22)         | Qatar (24)         | Denmark (5)        | Sweden (7)      | Netherlands (8)                 | Israel (20)             |
| Sweden (7)         | Norway (4)         | Canada (15)        | Sweden (7)         | Netherlands (8) | Singapore (2)                   | Denmark (5)             |
| Netherlands (8)    | Germany (14)       | Australia (12)     | Belgium (17)       | Luxembourg (10) | UAE (19)                        | Australia (12)          |
| United Kingdom (9) | United Kingdom (9) | United Kingdom (9) | United Kingdom (9) | Iceland (13)    | Austria (18)                    | Luxembourg (10)         |
| Luxembourg (10)    | Sweden (7)         | Sweden (7)         | Australia (12)     | Germany (14)    | Denmark (5)                     | Sweden (7)              |

Note: Numbers in parentheses are overall GTCI ranks.

five upper-middle-income countries, and seven lower-middle-income countries that are among the best-performing economies in attracting talent are not among the highest GTCI scorers in their respective income group.<sup>3</sup>

With regard to high-income countries, the performances of the best-performing countries have already been discussed above in the section on the top 15 countries in the GTCI 2019. It might therefore be of greater interest to consider countries at the other end of the scale: the worst-performing high-income countries. The high-income countries that are not part of the top 50 are **Panama** (52nd), **Hungary** (53rd), **Croatia** (55th), **Argentina** (60th), and **Kuwait** (64th). **Oman** and **Trinidad and Tobago** have improved their positions and broken into the top 50 (ranking 48th and 50th, respectively). Two countries have joined the group of high-income countries this year (as per the World Bank classification of July 2018): Argentina and Panama. Neither country makes a strong showing in the GTCI 2019, though. Argentina's highest rank is in the Grow (37th) pillar; in the other pillars it ranks outside the top 50. Similarly, Panama ranks in the top 50 in only one pillar: Attract (22nd).

As for the eight countries new to the GTCI this year, **Brunei Darussalam** (36th) is the only one classified as a high-income country. It performs the strongest in the pillars related to Enable (39th) and Vocational and Technical Skills (24th), while its main constraint is in growing (65th) talent.

As for upper-middle-income countries, it was seen earlier that **Malaysia** (27th) is the only non-high-income country to make it into the fourth quartile of top-performing countries. In fact, it appears in the top quartile in all pillars apart from Retain (where it is just outside, at rank 34th). Unsurprisingly, Malaysia dominates other countries in the same income group, being the leading country in three pillars (Enable, Retain, and Vocational

and Technical Skills) and the second-best country in the remaining pillars. Of particular note at the pillar level is the country's performance in the Vocational and Technical Skills (16th) pillar, as a result of a strong showing in Employability (11th) that offsets its weak pool of Mid-Level Skills (49th). Malaysia's best performance at the sub-pillar level, however, is its top 10 rank in the Business and Labour Landscape (9th), which boosts its Enable (23rd) pillar. Most scope for improvement, meanwhile, is with respect to retaining (34th) talent and, in particular, in indicators related to improving quality of life (it ranks 60th in Lifestyle). Not far behind Malaysia in the overall rankings is **Costa Rica**—the second-best performer among the upper-middle-income countries. Its strengths are primarily in attracting and growing talent (25th and 30th, respectively), which are boosted by solid scores in External Openness and Lifelong Learning, respectively (both in the 23rd position). The most sluggish pillar is Global Knowledge Skills (60th), where there is ample room for improvement with respect to both High-Level Skills (65th) and Talent Impact (55th).

There are two lower-middle-income countries in the third quartile (i.e., those ranked 32nd to 63rd): the **Philippines** (58th) and **Ukraine** (63rd). The Philippines has a good pool of Global Knowledge Skills (34th), scoring quite well in both High-Level Skills (37th) and Talent Impact (30th). It is also relatively adept in growing talent (41st), where its strengths in Lifelong Learning (27th) and Access to Growth Opportunities (42nd) offset a sub-standard Formal Education (85th). More discouragingly, the country's weak Sustainability (88th) and Lifestyle (91st) sub-pillars result in a low ability to Retain (92nd) talent. Ukraine's main strength is in the Output-related pillars: it is ranked 45th in terms of Vocational and Technical Skills and 37th when it comes to Global Knowledge Skills. In particular, it performs relatively well in matching labour market demand and workforce supply (it



Table A4

**Best performers by income group: Upper-middle-income countries (32 countries)**

| GTCI            | ENABLE          | ATTRACT             | GROW              | RETAIN          | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|-----------------|-----------------|---------------------|-------------------|-----------------|---------------------------------|-------------------------|
| Malaysia (27)   | Malaysia (27)   | Costa Rica (34)     | China (45)        | Malaysia (27)   | Malaysia (27)                   | Russia (49)             |
| Costa Rica (34) | Mauritius (47)  | Malaysia (27)       | Malaysia (27)     | Costa Rica (34) | Azerbaijan (43)                 | Malaysia (27)           |
| Azerbaijan (43) | Costa Rica (34) | Namibia (78)        | Costa Rica (34)   | Azerbaijan (43) | Montenegro (51)                 | Lebanon (59)            |
| China (45)      | China (45)      | Botswana (62)       | Mexico (70)       | Bulgaria (54)   | Costa Rica (34)                 | Bulgaria (54)           |
| Mauritius (47)  | Thailand (66)   | Mauritius (47)      | Russia (49)       | Mauritius (47)  | Lebanon (59)                    | China (45)              |
| Russia (49)     | Azerbaijan (43) | Azerbaijan (43)     | South Africa (71) | Russia (49)     | Mauritius (47)                  | Armenia (61)            |
| Montenegro (51) | Botswana (62)   | Jordan (57)         | Botswana (62)     | Jordan (57)     | Russia (49)                     | Montenegro (51)         |
| Bulgaria (54)   | Jordan (57)     | South Africa (71)   | Colombia (65)     | Kazakhstan (56) | Armenia (61)                    | Kazakhstan (56)         |
| Kazakhstan (56) | Bulgaria (54)   | Albania (75)        | Guatemala (88)    | Romania (69)    | Serbia (68)                     | Romania (69)            |
| Jordan (57)     | Kazakhstan (56) | Dominican Rep. (90) | Brazil (72)       | Turkey (74)     | Kazakhstan (56)                 | Turkey (74)             |

Note: Numbers in parentheses are overall GTCI ranks.

ranks 44th in Employability) and has a fairly good pool of High-Level Skills (24th). By contrast, Ukraine has considerable room for improvement with respect to enabling (96th) and attracting (105th) talent, with one of the weakest Regulatory Landscapes (118th) in the GTCI 2019—a result of its current political instability.

Although in recent years we have witnessed a cooling off in the growth of emerging markets, the **BRICS** (Brazil, Russia, India, China, and South Africa) cannot be ignored in the global talent race. **China** (45th) continues to lead the pack. China is ranked in the top quartile in the Grow (24th) pillar, mainly as a result of having a top 10 Formal Education (8th) based on the reading, maths, and science competences of Chinese students (7th) and the rise of Chinese universities in international rankings (3rd). The country performs relatively well in the pillars related to enabling (43rd) talent and Global Knowledge Skills, where a top quartile rank with respect to Talent Impact (23rd) is driven by a high degree of innovation. The areas that need improvement have to do with personal rights and tolerance of both immigrants and minorities, and also variables linked to quality of life.

China is followed by **Russia** (49th), which has a strong pool of Global Knowledge Skills (28th) as a result of the High-Level Skills (12th) available in the country. The country has a solid system of Formal Education (30th), which contributes to a rank of 44th in growing talent despite poor Access to Growth Opportunities (91st). A poor Regulatory Landscape (103rd) impedes Russia's ability to enable (81st) talent. But its biggest challenge continues to be the attraction of talent (109th), where both External and Internal Openness show a poor performance (96th and 112th, respectively).

**South Africa** is the third-highest ranked BRICS member (71st). Although its system of Formal Education is not exemplary (77th), its private sector does facilitate Lifelong Learning (42nd)

and Access to Growth Opportunities (33rd), which leads to a rank of 45th in the Grow pillar. The country also makes it into the third quartile in the Attract (52nd) pillar, boosted by well-balanced performances in External Openness (56th) and Internal Openness (55th). The one dimension that drags down its overall ranking is South Africa's weak ability to retain (102nd) talent, where it is affected by poor Sustainability (103rd) and Lifestyle (99th).

Just behind South Africa in the GTCI 2019 is **Brazil** (72nd), which does its best job in growing (54th) and retaining (63rd) talent. In the former case, its result is driven by decent Access to Growth Opportunities (43rd), while in the latter, it primarily performs well on indicators related to Sustainability (52nd). In the other four pillars, Brazil finds itself in the second quartile, where areas in urgent need of attention include the ability to address skills gaps and labour mismatches (it ranks 110th in Employability), the lack of attraction to foreign resources and talent (97th in External Openness), and the weak business-labour nexus (86th in Business and Labour Landscape).

**India** (80th) remains the laggard of this group. It performs better than its lower-income peers when it comes to growing (48th) talent, primarily by virtue of the possibilities for Lifelong Learning (38th) and Access to Growth Opportunities (41st). An above-average Business and Labour Landscape (38th) and Employability (34th) raise the scores of the pillars related to Enable (70th) and Vocational and Technical Skills (72nd) that are otherwise hampered by the remaining sub-pillars. Notwithstanding the scope for improvement across the board, India's biggest challenge is to improve its ability to Attract (95th) and Retain (96th) talent. Above all, there is a need to address its poor level of Internal Openness (116th)—in particular with respect to weak gender equality and low tolerances towards minorities and

Table A5

**Best performers by income group: Lower-middle-income countries (27 countries)**

| GTCI             | ENABLE           | ATTRACT          | GROW             | RETAIN          | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|------------------|------------------|------------------|------------------|-----------------|---------------------------------|-------------------------|
| Philippines (58) | Bhutan (83)      | Ghana (94)       | Philippines (58) | Georgia (76)    | Ukraine (63)                    | Philippines (58)        |
| Ukraine (63)     | Georgia (76)     | Kenya (85)       | India (80)       | Ukraine (63)    | Indonesia (67)                  | Ukraine (63)            |
| Indonesia (67)   | Indonesia (67)   | Zambia (104)     | Indonesia (67)   | Tunisia (84)    | Kyrgyzstan (95)                 | Mongolia (77)           |
| Georgia (76)     | Philippines (58) | Lao PDR (91)     | Ukraine (63)     | Egypt (96)      | Sri Lanka (82)                  | Tunisia (84)            |
| Mongolia (77)    | Sri Lanka (82)   | Nigeria (99)     | Honduras (98)    | Lao PDR (91)    | Nigeria (99)                    | Georgia (76)            |
| India (80)       | India (80)       | Philippines (58) | Kenya (85)       | Sri Lanka (82)  | India (80)                      | Egypt (96)              |
| Sri Lanka (82)   | Lao PDR (91)     | Indonesia (67)   | Ghana (94)       | Moldova (89)    | Philippines (58)                | Moldova (89)            |
| Bhutan (83)      | Kenya (85)       | Honduras (98)    | Mongolia (77)    | Bhutan (83)     | Kenya (85)                      | Viet Nam (92)           |
| Tunisia (84)     | Ghana (94)       | Nicaragua (103)  | Bhutan (83)      | Kyrgyzstan (95) | Georgia (76)                    | India (80)              |
| Kenya (85)       | Viet Nam (92)    | Mongolia (77)    | Moldova (89)     | Mongolia (77)   | Tunisia (84)                    | Kyrgyzstan (95)         |

Note: Numbers in parentheses are overall GTCI ranks.

Table A6

**Best performers by income group: Low-income countries (17 countries)**

| GTCI            | ENABLE          | ATTRACT          | GROW            | RETAIN          | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|-----------------|-----------------|------------------|-----------------|-----------------|---------------------------------|-------------------------|
| Rwanda (73)     | Rwanda (73)     | Gambia (93)      | Rwanda (73)     | Tajikistan (81) | Tajikistan (81)                 | Tajikistan (81)         |
| Tajikistan (81) | Gambia (93)     | Rwanda (73)      | Senegal (102)   | Rwanda (73)     | Gambia (93)                     | Ethiopia (117)          |
| Gambia (93)     | Uganda (109)    | Tanzania (111)   | Gambia (93)     | Gambia (93)     | DR Congo (124)                  | Zimbabwe (121)          |
| Senegal (102)   | Senegal (102)   | Senegal (102)    | Tajikistan (81) | Ethiopia (117)  | Rwanda (73)                     | Malawi (115)            |
| Uganda (109)    | Tajikistan (81) | Uganda (109)     | Tanzania (111)  | Senegal (102)   | Senegal (102)                   | Madagascar (119)        |
| Tanzania (111)  | Malawi (115)    | Liberia (114)    | Uganda (109)    | Malawi (115)    | Nepal (120)                     | Rwanda (73)             |
| Liberia (114)   | Tanzania (111)  | Mozambique (122) | Mali (116)      | Tanzania (111)  | Madagascar (119)                | Nepal (120)             |
| Malawi (115)    | Liberia (114)   | Madagascar (119) | Zimbabwe (121)  | Liberia (114)   | Zimbabwe (121)                  | Senegal (102)           |
| Mali (116)      | Mali (116)      | Tajikistan (81)  | Liberia (114)   | Mali (116)      | Mali (116)                      | Yemen (125)             |
| Ethiopia (117)  | Ethiopia (117)  | Malawi (115)     | Nepal (120)     | Nepal (120)     | Burundi (123)                   | Tanzania (111)          |

Note: Numbers in parentheses are overall GTCI ranks.

immigrants—and its disappointing showing in Lifestyle (112th) indicators.

Only three low-income countries make it into the second quartile of the GTCI 2019: **Rwanda** (73rd), **Tajikistan** (81st), and **Gambia** (93rd). Rwanda's greatest strengths are in the Input-related pillars, especially Enable and Attract (ranking 36th in both). It performs particularly well in the Business and Labour Landscape (27th) and Internal Openness (28th) sub-pillars, partly as a result of the positive impact of labour-employer relations in the former case and of gender equality in the latter. The country's sub-par performance in the Output-related pillars—both of which are ranked in the bottom quartile—is primarily due to a weak pool of

Mid-Level (118th) and High-Level (114th) Skills, although a weak Talent Impact (94th) also leaves a lot to be desired. Tajikistan is one of the new countries included in the GTCI 2019. The two pillars where it performs best are Retain (58th) and Vocational and Technical Skills (55th), with a relatively strong showing in Sustainability (40th) leading the way in the former pillar. The country's performances in the other three Input-related pillars are, however, discouraging: Enable (98th), Attract (101st), and Grow (100th). All in all, there are only two sub-pillars—Business and Labour Landscape (52nd) and Lifelong Learning (69th)—in these dimensions that are not in the bottom quartile. Gambia makes an impressive showing in the Attract (32nd) pillar, which is particularly

Figure A5

## Average pillar scores, by regional group



Note: The figure shows the average scores for each pillar of all countries within each group. GK Skills = Global Knowledge Skills; VT Skills = Vocational and Technical Skills.

boosted by a high degree of External Openness (28th). It also performs fairly well with respect to Enable (63rd), where a strong Business and Labour Landscape (33rd) offsets weaker Regulatory (90th) and Market (84th) Landscapes. The country's weakest dimension, however, is its pool of Global Knowledge Skills (122nd), with both sub-pillars—High-Level Skills (122nd) and Talent Impact (121st)—almost at the very bottom of the rankings.

Apart from Tajikistan, three low-income countries in this year's GTCI were not included in the index last year: **Burundi** (123rd), the **Democratic Republic of the Congo** (124th), and **Liberia** (114th). In addition, **Yemen**—the lowest-ranked country in the GTCI (125th)—has been classified as a low-income country this year, a drop from its previous lower-middle-income status.

### Regional Groups

It has already been seen in Figure A1 that there are considerable differences among regions in how well they perform in the GTCI. No surprises there, since the proportion of various income groups can vary significantly across regions and there is a strong positive correlation between GTCI score and income level. In view of the above discussion on how higher-income groups dominate lower-income groups in each of the six pillars (see Figure A4), it would also be reasonable to expect that the same goes for regions.

This is indeed the case, as can be clearly seen in Figure A5, which shows how regions perform across the various pillars of the GTCI model. Thus, to give two examples, Northern America—which consists of only two high-income countries (the United States and Canada)—occupies the top position across the board, while Europe is in 2nd place in all six pillars. There are two exceptions, however. First, Sub-Saharan Africa outperforms Central and Southern Asia when it comes to attracting talent, albeit

with the lowest score of all regions in all other pillars. Second, the region comprising Northern Africa and Western Asia has the fourth-highest average scores in all pillars but Grow, where Latin America and the Caribbean—otherwise ranking 5th—has a higher average.

An interesting takeaway from Figure A5 is that the differences among regions are somewhat less pronounced with respect to the Attract pillar, with the gap between the highest-scoring and lowest-scoring regional averages narrower than in the other pillars. The standard deviation of the group averages is also smaller when it comes to attracting talent. A more detailed analysis suggests that the Attract pillar might be slightly different than the other pillars as a result of the varied ability of countries to be magnets for foreign resources and talent.

The degree of heterogeneity in the various regional groups is obvious from a cursory glance at Table A7, which lists the top 10 performers by regional group. It ranges from the homogeneous two high-income countries that make up Northern America to the 24 countries in Sub-Saharan Africa that include low-income, lower-middle-income, and upper-middle-income countries.

**Central and Southern Asia (10 countries):** Six countries in this region are classified as belonging to the lower-middle-income group, whereas the four remaining countries are equally divided in the low- and upper-middle-income groups. As would be expected, the top performer of the group, **Kazakhstan** (56th), is an upper-middle-income country. Its dominance within the region is such that it is either the highest or next-highest scorer in each of the six pillars. Kazakhstan is quite a consistent performer across the pillars, with a rank of 50–63 in all but one of them. The exception is the Grow (78th) pillar, where a lack of personal rights and a low use of virtual networks hamper Access to Growth Opportunities (99th). The second-highest ranked

country in the region is also the largest: India (80th). As discussed in the previous section, it performs relatively well in the Grow (48th) pillar, while much remains to be done to improve its ability to Attract (95th) and Retain (96th) talent. **Tajikistan** (81st) has the third-highest score in the region, albeit only just followed by **Sri Lanka** (82nd) and **Bhutan** (83rd). This might seem surprising given that Tajikistan is a low-income country, but one should bear in mind that it was classified as a lower-middle-income country as late as last year.

#### **Eastern, Southeastern Asia and Oceania (15 countries):**

This region is one of the most heterogeneous in the GTCI 2019—ranging from **Singapore** ranked 2nd to **Cambodia** ranked 107th. It includes six high-income countries, three upper-middle-income countries, and six lower-middle-income countries. Within the region, the top three countries in the overall GTCI—Singapore, New Zealand (11th), and Australia (12th)—also occupy the top three spots in three of the six pillars. **Japan** (22nd) makes it into the regional top three in the Enable and Retain pillars. At the global level, it is one of the leading countries in enabling (6th) talent, with strong performances in all three sub-pillars. The area with the most scope for improvement is the Attract (45th) pillar, where improving gender equality indicators presents a particular challenge. Attracting talent is also the biggest issue facing the **Republic of Korea** (South Korea, 30th), which finds itself in 81st position globally in that pillar. Like Japan, it performs particularly poorly with respect to the gender equality indicators. Expanding the opportunities for people to improve their socioeconomic situation regardless of background (i.e., Social mobility) is another issue in need of reform. More positively, South Korea has a good pool of Global Knowledge Skills (20th), with solid performances in both High-Level Skills (19th) and Talent Impact (20th). Sandwiched in between Japan and South Korea in the regional rankings is Malaysia (27th), which, as seen in the previous section, performs particularly well with regard to Vocational and Technical Skills (16th). It is in the top quartile in all other pillars apart from Retain (34th) as a result of a poor showing in the Lifestyle (60th) indicators.

**Europe (37 countries):** The dominance of European countries in the GTCI 2019 is a function of the large share of high-income countries in the region, with 28 of its economies belonging to this income group. Seven of the remaining countries in Europe are classified as upper-middle income, while two are lower-middle-income countries. Thus the region includes quite varied performance—from the top position of Switzerland to the 89th rank of the **Republic of Moldova**. All the top 10 performing countries have been discussed earlier in the section on the top 15 countries in the GTCI 2019. Next in the list of highest-ranked European countries is **Ireland** (16th), which was a top 15 country last year. It performs well across all six pillars, ranking in the 11–20 span in each of them. At the sub-pillar level, it is a global leader when it comes to Talent Impact (7th), as a result of strong innovative and entrepreneurship skills. Although it does well in Internal Openness (11th), Ireland's ability to attract (11th) talent would increase substantially if gender equality were to improve. Among the larger European economies not already discussed, **France** (21st) and **Italy** (38th) are both impeded by

lacklustre performances in the Enable and Attract pillars. In the case of France, a weak Business and Labour Landscape (81st) has a negative impact on enabling (30th) talent, while a low level of Internal Openness (46th) reduces its ability to attract (33rd) talent. As for Italy, its enabling (53rd) environment would improve substantially by a better Business and Labour Landscape (105th), whereas its low level in the Attract (84th) pillar would rise considerably if both External Openness (82nd) and Internal Openness (71st) were strengthened.

**Latin America and the Caribbean (18 countries):** This region consists primarily of upper-middle-income countries: 10 in total. In addition, it includes five high-income countries and three lower-middle-income countries. None of the countries in the region makes it into the top quartile at the global level, although **Chile** (32nd) is as close as it gets. Above all, Chile does well with respect to growing (27th) talent, with solid performances in all Grow sub-pillars. Its ability to retain (40th) talent is primarily due to its level of Sustainability (31st) offsetting a relatively weak quality of life (61st in Lifestyle). **Costa Rica** (34th) is the next-highest performer in Latin America and the Caribbean, occupying 2nd place in each pillar within the region. An impressive ability to match labour market demand and workforce supply (19th in Employability) is cancelled out by weak Mid-Level Skills (79th) to yield an overall rank of 36th in the pillar concerned with Vocational and Technical Skills. However, most scope for improvement at the pillar level relates to Global Knowledge Skills (60th), where Costa Rica shows relatively weak scores in both High-Level Skills (65th) and Talent Impact (55th). Brazil (72nd) and Mexico (70th), the two economic powerhouses of the region, are below the median in terms of GTCI score. Mexico, like Brazil (already discussed above in the context of BRICS), performs relatively well in the Grow (42nd) pillar, which is built on fairly solid performances in all three sub-pillars. Its greatest challenges, meanwhile, are in areas related to Internal Openness (107th) and the Business and Labour Landscape (102nd), which decrease the country's ability to, respectively, attract (87th) and enable (82nd) talent.

**Northern Africa and Western Asia (19 countries):** This is the only region that includes countries from all income groups: eight high-income economies, six upper-middle-income economies, four lower-middle-income economies, and one low-income economy. The top three regional countries—the **United Arab Emirates** (UAE, 19th), **Israel** (20th), and **Qatar** (24th)—are all part of the top quartile in the global rankings. Both the UAE and Qatar are particularly strong with respect to Attract (3rd and 6th, respectively), primarily by virtue of their impressive levels of External Openness (2nd and 5th). They also have strong Vocational and Technical Skills (8th and 14th) that can be attributed to high degrees of Employability (10th and 4th). The pillar with most scope for improvement in both countries is that of Global Knowledge Skills (49th and 52nd). Israel is, in some ways, the inverse of the UAE and Qatar in that its pool of Global Knowledge Skills (6th) is world class, whereas its ability to attract (49th) talent is weak. In the former case, this is mainly due to the country's unmatched High-Level Skills (1st); in the latter case, it is a direct consequence of a dismal level of Internal Openness (109th)

Table A7

**Ten best performers by regional group**

| GTCI                                                         | ENABLE                 | ATTRACT                | GROW                   | RETAIN                 | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--------------------------------------------------------------|------------------------|------------------------|------------------------|------------------------|---------------------------------|-------------------------|
| <b>Central and Southern Asia (10 countries)</b>              |                        |                        |                        |                        |                                 |                         |
| Kazakhstan (56)                                              | Bhutan (83)            | Kazakhstan (56)        | India (80)             | Kazakhstan (56)        | Tajikistan (81)                 | Kazakhstan (56)         |
| India (80)                                                   | Kazakhstan (56)        | Bhutan (83)            | Kazakhstan (56)        | Tajikistan (81)        | Kazakhstan (56)                 | Iran (97)               |
| Tajikistan (81)                                              | Sri Lanka (82)         | India (80)             | Bhutan (83)            | Iran (97)              | Kyrgyzstan (95)                 | India (80)              |
| Sri Lanka (82)                                               | India (80)             | Tajikistan (81)        | Sri Lanka (82)         | Sri Lanka (82)         | Sri Lanka (82)                  | Kyrgyzstan (95)         |
| Bhutan (83)                                                  | Tajikistan (81)        | Kyrgyzstan (95)        | Iran (97)              | Bhutan (83)            | India (80)                      | Tajikistan (81)         |
| Kyrgyzstan (95)                                              | Bangladesh (118)       | Sri Lanka (82)         | Tajikistan (81)        | Kyrgyzstan (95)        | Iran (97)                       | Sri Lanka (82)          |
| Iran (97)                                                    | Kyrgyzstan (95)        | Nepal (120)            | Pakistan (108)         | India (80)             | Pakistan (108)                  | Pakistan (108)          |
| Pakistan (108)                                               | Iran (97)              | Pakistan (108)         | Kyrgyzstan (95)        | Pakistan (108)         | Bhutan (83)                     | Bangladesh (118)        |
| Bangladesh (118)                                             | Pakistan (108)         | Bangladesh (118)       | Nepal (120)            | Nepal (120)            | Nepal (120)                     | Nepal (120)             |
| Nepal (120)                                                  | Nepal (120)            | Iran (97)              | Bangladesh (118)       | Bangladesh (118)       | Bangladesh (118)                | Bhutan (83)             |
| <b>Eastern, Southeastern Asia and Oceania (15 countries)</b> |                        |                        |                        |                        |                                 |                         |
| Singapore (2)                                                | Singapore (2)          | Singapore (2)          | Australia (12)         | Australia (12)         | Singapore (2)                   | Singapore (2)           |
| New Zealand (11)                                             | New Zealand (11)       | New Zealand (11)       | Singapore (2)          | New Zealand (11)       | Malaysia (27)                   | Australia (12)          |
| Australia (12)                                               | Japan (22)             | Australia (12)         | New Zealand (11)       | Japan (22)             | New Zealand (11)                | New Zealand (11)        |
| Japan (22)                                                   | Australia (12)         | Malaysia (27)          | Japan (22)             | Singapore (2)          | Australia (12)                  | South Korea (30)        |
| Malaysia (27)                                                | Malaysia (27)          | Brunei Darussalam (36) | China (45)             | Malaysia (27)          | Japan (22)                      | Japan (22)              |
| South Korea (30)                                             | South Korea (30)       | Japan (22)             | South Korea (30)       | South Korea (30)       | Brunei Darussalam (36)          | Malaysia (27)           |
| Brunei Darussalam (36)                                       | Brunei Darussalam (36) | Lao PDR (91)           | Malaysia (27)          | Brunei Darussalam (36) | South Korea (30)                | Philippines (58)        |
| China (45)                                                   | China (45)             | Philippines (58)       | Philippines (58)       | China (45)             | Indonesia (67)                  | Mongolia (77)           |
| Philippines (58)                                             | Thailand (66)          | Indonesia (67)         | Indonesia (67)         | Lao PDR (91)           | China (45)                      | China (45)              |
| Thailand (66)                                                | Indonesia (67)         | Thailand (66)          | Brunei Darussalam (36) | Thailand (66)          | Philippines (58)                | Brunei Darussalam (36)  |
| <b>Europe (37 countries)</b>                                 |                        |                        |                        |                        |                                 |                         |
| Switzerland (1)                                              | Switzerland (1)        | Luxembourg (10)        | Switzerland (1)        | Switzerland (1)        | Switzerland (1)                 | Iceland (13)            |
| Norway (4)                                                   | Denmark (5)            | Switzerland (1)        | Netherlands (8)        | Norway (4)             | Germany (14)                    | Switzerland (1)         |
| Denmark (5)                                                  | Norway (4)             | United Kingdom (9)     | Finland (6)            | Austria (18)           | Finland (6)                     | United Kingdom (9)      |
| Finland (6)                                                  | Germany (14)           | Sweden (7)             | Norway (4)             | Denmark (5)            | Norway (4)                      | Denmark (5)             |
| Sweden (7)                                                   | United Kingdom (9)     | Ireland (16)           | Denmark (5)            | Finland (6)            | Netherlands (8)                 | Luxembourg (10)         |
| Netherlands (8)                                              | Sweden (7)             | Norway (4)             | Sweden (7)             | Sweden (7)             | Austria (18)                    | Sweden (7)              |
| United Kingdom (9)                                           | Netherlands (8)        | Finland (6)            | Belgium (17)           | Netherlands (8)        | Denmark (5)                     | Ireland (16)            |
| Luxembourg (10)                                              | Finland (6)            | Netherlands (8)        | United Kingdom (9)     | Luxembourg (10)        | Sweden (7)                      | Norway (4)              |
| Iceland (13)                                                 | Austria (18)           | Denmark (5)            | Germany (14)           | Iceland (13)           | Iceland (13)                    | Estonia (23)            |
| Germany (14)                                                 | Ireland (16)           | Iceland (13)           | Ireland (16)           | Germany (14)           | Ireland (16)                    | Finland (6)             |

*(continued on next page)*

Table A7 (continued)

**Ten best performers by regional group**

| GTCI                                                   | ENABLE                 | ATTRACT                | GROW              | RETAIN                 | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--------------------------------------------------------|------------------------|------------------------|-------------------|------------------------|---------------------------------|-------------------------|
| <b>Latin America and the Caribbean (18 countries)</b>  |                        |                        |                   |                        |                                 |                         |
| Chile (32)                                             | Chile (32)             | Panama (52)            | Chile (32)        | Uruguay (46)           | Chile (32)                      | Chile (32)              |
| Costa Rica (34)                                        | Costa Rica (34)        | Costa Rica (34)        | Costa Rica (34)   | Costa Rica (34)        | Costa Rica (34)                 | Costa Rica (34)         |
| Uruguay (46)                                           | Uruguay (46)           | Uruguay (46)           | Argentina (60)    | Chile (32)             | Trinidad & Tobago (50)          | Mexico (70)             |
| Trinidad & Tobago (50)                                 | Trinidad & Tobago (50) | Trinidad & Tobago (50) | Uruguay (46)      | Panama (52)            | Colombia (65)                   | Peru (79)               |
| Panama (52)                                            | Colombia (65)          | Chile (32)             | Mexico (70)       | Argentina (60)         | Argentina (60)                  | Trinidad & Tobago (50)  |
| Argentina (60)                                         | Panama (52)            | Dominican Rep. (90)    | Colombia (65)     | Trinidad & Tobago (50) | Panama (52)                     | Uruguay (46)            |
| Colombia (65)                                          | Dominican Rep. (90)    | Argentina (60)         | Guatemala (88)    | Brazil (72)            | Peru (79)                       | Panama (52)             |
| Mexico (70)                                            | Guatemala (88)         | Peru (79)              | Brazil (72)       | Colombia (65)          | Mexico (70)                     | Colombia (65)           |
| Brazil (72)                                            | Brazil (72)            | Guatemala (88)         | Ecuador (87)      | Ecuador (87)           | Ecuador (87)                    | Brazil (72)             |
| Peru (79)                                              | Mexico (70)            | Paraguay (101)         | Venezuela (112)   | Mexico (70)            | Honduras (98)                   | Argentina (60)          |
| <b>Northern Africa and Western Asia (19 countries)</b> |                        |                        |                   |                        |                                 |                         |
| UAE (19)                                               | UAE (19)               | UAE (19)               | Israel (20)       | Israel (20)            | UAE (19)                        | Israel (20)             |
| Israel (20)                                            | Qatar (24)             | Qatar (24)             | UAE (19)          | UAE (19)               | Qatar (24)                      | Cyprus (33)             |
| Qatar (24)                                             | Israel (20)            | Bahrain (40)           | Qatar (24)        | Saudi Arabia (39)      | Israel (20)                     | Lebanon (59)            |
| Cyprus (33)                                            | Bahrain (40)           | Oman (48)              | Bahrain (40)      | Qatar (24)             | Azerbaijan (43)                 | Armenia (61)            |
| Saudi Arabia (39)                                      | Saudi Arabia (39)      | Cyprus (33)            | Saudi Arabia (39) | Azerbaijan (43)        | Cyprus (33)                     | UAE (19)                |
| Bahrain (40)                                           | Cyprus (33)            | Saudi Arabia (39)      | Cyprus (33)       | Cyprus (33)            | Saudi Arabia (39)               | Qatar (24)              |
| Azerbaijan (43)                                        | Azerbaijan (43)        | Kuwait (64)            | Lebanon (59)      | Kuwait (64)            | Lebanon (59)                    | Saudi Arabia (39)       |
| Oman (48)                                              | Oman (48)              | Azerbaijan (43)        | Turkey (74)       | Oman (48)              | Armenia (61)                    | Tunisia (84)            |
| Jordan (57)                                            | Georgia (76)           | Jordan (57)            | Oman (48)         | Jordan (57)            | Bahrain (40)                    | Georgia (76)            |
| Lebanon (59)                                           | Jordan (57)            | Israel (20)            | Azerbaijan (43)   | Bahrain (40)           | Oman (48)                       | Turkey (74)             |
| <b>Northern America (2 countries)</b>                  |                        |                        |                   |                        |                                 |                         |
| United States (3)                                      | United States (3)      | Canada (15)            | United States (3) | United States (3)      | United States (3)               | United States (3)       |
| Canada (15)                                            | Canada (15)            | United States (3)      | Canada (15)       | Canada (15)            | Canada (15)                     | Canada (15)             |
| <b>Sub-Saharan Africa (24 countries)</b>               |                        |                        |                   |                        |                                 |                         |
| Mauritius (47)                                         | Mauritius (47)         | Namibia (78)           | South Africa (71) | Mauritius (47)         | Mauritius (47)                  | South Africa (71)       |
| Botswana (62)                                          | Rwanda (73)            | Gambia (93)            | Botswana (62)     | Rwanda (73)            | South Africa (71)               | Botswana (62)           |
| South Africa (71)                                      | Botswana (62)          | Botswana (62)          | Mauritius (47)    | Botswana (62)          | Nigeria (99)                    | Namibia (78)            |
| Rwanda (73)                                            | Namibia (78)           | Rwanda (73)            | Kenya (85)        | Namibia (78)           | Kenya (85)                      | Mauritius (47)          |
| Namibia (78)                                           | Gambia (93)            | Mauritius (47)         | Rwanda (73)       | Gambia (93)            | Gambia (93)                     | Kenya (85)              |
| Kenya (85)                                             | South Africa (71)      | Ghana (94)             | Ghana (94)        | South Africa (71)      | Botswana (62)                   | Nigeria (99)            |
| Gambia (93)                                            | Kenya (85)             | South Africa (71)      | Namibia (78)      | Ghana (94)             | Ghana (94)                      | Ethiopia (117)          |
| Ghana (94)                                             | Ghana (94)             | Kenya (85)             | Senegal (102)     | Ethiopia (117)         | DR Congo (124)                  | Cameroon (113)          |
| Nigeria (99)                                           | Uganda (109)           | Zambia (104)           | Cameroon (113)    | Senegal (102)          | Rwanda (73)                     | Ghana (94)              |
| Senegal (102)                                          | Lesotho (110)          | Nigeria (99)           | Lesotho (110)     | Malawi (115)           | Zambia (104)                    | Zimbabwe (121)          |

Note: Numbers in parentheses are overall GTCI ranks.

that, in turn, is caused by bottom levels of Tolerance to minorities (125th) and immigrants (110th). As the table on the regional top 10 shows, Western Asian countries outshine Northern African countries in the GTCI 2019. Indeed, it is the Northern African countries that, together with **Yemen** (125th), bring up the rear of the regional rankings.

**Northern America (2 countries):** Both Northern American economies—the United States (3rd) and Canada (15th)—feature in the top 15 high performers of this year's GTCI. As can be seen in the table, the United States tops its neighbouring country in every pillar apart from Attract. It is also the more consistent performer of the two, ranking inside the top 15 in all pillars. As their performances are extensively discussed in the section on the top 15 of the GTCI 2019, the reader is referred to that section for further analysis.

**Sub-Saharan Africa (24 countries):** It has already been seen that this region has the weakest average performance in the GTCI 2019. In fact, no fewer than 16 of the Sub-Saharan African countries are found at the bottom quartile of the index. This is not a surprising result given that 14 of the countries in the region belong to the low-income group, while the rest of Sub-Saharan Africa is represented by six lower-middle-income countries and four upper-middle-income ones. The top performer in the region, **Mauritius** (47th), is one of only two countries with an overall score above the GTCI median. This stems above all from its solid performance in the Enable (32nd) pillar, where it performs relatively well in all three sub-pillars. At the other end of the spectrum, the country faces a challenge to improve its pool of Global Knowledge Skills (86th), particularly with respect to High-Level Skills (89th). The other country with a score above the GTCI median is **Botswana** (62nd). Its main strength lies in attracting (35th) talent, which is boosted by a high degree of Internal Openness (21st). More discouraging is the country's performance in the Retain (94th) pillar, which is due to weak ranks in both Sustainability (85th) and Lifestyle (94th). **South Africa** (71st) is the third-best performing country in the region, registering a relatively high score in the Grow (45th) pillar that can be attributed to good Access to Growth Opportunities (33rd). When it comes to retaining (102nd) talent, however, the country's performance is well below par as a result of disappointing levels of Sustainability (103rd) and Lifestyle (99th). A welcome feature of the GTCI 2019 is that the country coverage of Sub-Saharan Africa has expanded by six countries compared with last year. Among the six is the largest economy in the region: **Nigeria** (99th). Its most encouraging performance is related to attracting (61st) talent, which is chiefly driven by luring foreign resources and talent (it ranks 57th in External Openness). All the same, the country finds itself in the bottom quartile in four of the six pillars (Enable: 95th; Grow: 103rd; Retain: 120th; Global Knowledge Skills: 97th); clearly Nigeria has plenty of scope to strengthen its talent competitiveness.

## ENDNOTES

- 1 Countries are grouped according to the World Bank Income Classifications. Economies are divided based on their 2017 gross national income (GNI) per capita, calculated using the World Bank Atlas method (see <https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2018-2019>). The groups are: low income; lower-middle income; upper-middle income; and high income. Regional groups are based on United Nations Regional Classifications: Central and Southern Asia; Eastern, Southeastern Asia and Oceania; Europe; Latin America and the Caribbean; Northern Africa and Western Asia; Northern America; and Sub-Saharan Africa.
- 2 The eight new countries this year are Brunei Darussalam, Burundi, Cameroon, the Democratic Republic of the Congo, Liberia, Nigeria, Tajikistan, and Zambia.
- 3 This finding is of less relevance to low-income countries, since there are only 17 of them in total.





## CHAPTER 2

# Education 2.0: Getting Ready for the Future of Work

**Alain Dehaze**

*The Adecco Group*

It is often said that it is not the strongest of the species that survive, nor even the quickest, but the most adaptable. Look no further than the chameleon, able to instantaneously adapt to its surroundings by changing colour. The same rules apply to those who will succeed in the future world of work.

The way we work is constantly evolving. Like the chameleon, we need to learn to adapt in real time if we are to prosper. To do this, we need to be the entrepreneurs of our own destinies.

## THE CHALLENGE

First, we must understand the scale of the challenge. At the Adecco Group, our strategy identifies six megatrends that are influencing the world of work:

- Geopolitical and economic uncertainty
- New demographic mix
- Digitalisation, big data, and analytics
- Skill imbalances
- Automation, artificial intelligence, and machine learning
- The 'gig' economy

These megatrends contribute to a world where volatility, uncertainty, complexity, and ambiguity (VUCA) have become the norm. Like our friends in the animal kingdom, we must be flexible and nimble in this environment. With the right support in place, it can be an environment ripe with opportunity.

In this changing world, talent is the key lever of success. It has the power to unlock innovation and prosperity and to enhance competitiveness for businesses and individuals alike. But talent is an increasingly scarce resource. The competition for that talent is intensifying every day: the labour market is transitioning from an employer-driven environment to one where human talent has more and more bargaining power.

At the same time, it is no longer enough to be a master of one trade or follow only a solitary career path. The skills gap is already entrenched in our economies—and it looks set to grow. In the European Union, the European Commission revealed that some 70 million people lacked adequate reading and writing skills: more than one in ten people in the world's second-largest economy is at risk of long-term unemployment, poverty, and

social exclusion because they do not have even the most basic work skills.<sup>1</sup> Our education system is failing large sections of our societies. The labour market can be equally dysfunctional, with many workers in Europe engaged in jobs that bear little resemblance to their education or training. On top of that, by one estimate, four in every ten employers cannot find the workers they need who have the right skills.

Those figures make for sober reading. They demand a full and urgent response at policy, business, and individual levels. We need to be better prepared for the future of work.

The candidates with the greatest array of talent and skills, much like in the animal kingdom, will be best placed to thrive. But what about those with fewer skills and those businesses struggling to attract the right talent?

The Adecco Group's vision is to make the future work for everyone. If we are to do this, even as megatrends disrupt our economies, we need to find solutions for businesses to attract the right talent and for individuals to always have the right skills.

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## The Adecco Group's vision is to make the future work for everyone.

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It is our view that companies must change the way they perceive and manage their workforces and their workforce needs. The age of long-term, permanent roles may have to make way for an era where flexible, short-term project teams play a more significant part. Companies must also commit to continuous training for their workers. As the leading HR solutions partner serving more than 100,000 clients every day, we see encouraging evidence that this is slowly starting to happen.

Individuals must look at their careers as self-driven journeys with many different pathways. They will need to engage in lifelong learning to keep up with changing demands and trends. As we support candidates around the world, we also see a growing understanding of this change in perspective.

Finally, the public sector, in close co-creation with the business community, must reshape our education and social protection systems to equip the workers of tomorrow with the right skills—both hard and soft—alongside the ability and personality to adapt and transform at any point in their careers. And the right incentives must be found to encourage more businesses to train their teams.

### EDUCATION 2.0

We are often told that there is no silver bullet for the challenges that face our economies in this VUCA world. But an updated education system really can make the difference—we call it *Education 2.0*.

It's important to understand what the future holds for our workers before we can appreciate what Education 2.0 looks like.

An example of the successful workers of the future, and what their career paths might look like, demonstrates this point. At the start of his or her working life, a young worker emerges from the education system not just with academic or test-based qualifications, but also with work-based knowledge (including perhaps some vocational training or an apprenticeship), relevant soft and hard skills, and—most importantly—the ability to learn. This young worker enters the workforce at a junior level working for a company on a project-by-project basis before working his or her way up the ladder into a more permanent and senior role, changing disciplines and receiving the right training from the employer at every step. As this worker matures, the opportunity to go freelance becomes attractive as a lifestyle choice. He or she sets up shop and builds a client base, focusing on one area of expertise. As time goes by, our worker is able to tap into a social protection fund for lifelong learning to up- and re-skill as the needs of the economy fluctuate. This enables our worker to offer different services and to keep up with the pace of change.

We could imagine that our worker's freelance business may not grow forever. In this case, he or she retrain in a new discipline and re-enters the more traditional world of work. This pathway may have been made possible by companies such as the Adecco Group's latest acquisition, General Assembly (GA), which offers digital skills education that people and firms need for the 21st century. Our worker trains in software design and finds a new role in a small tech start-up. This leads to a new career that grows through different companies and results in a senior management position in a large consumer tech firm. Eventually, our worker decides to step away from the tech world and feed back in to the education system. The government has a late career teacher training programme, and our worker sees out the rest of his or her career as a computer science teacher in a high school.

At every twist and turn of this varied and flexible career, education empowers our worker to move forward. How can we make this future of opportunity a reality?

It is likely that the transformation gripping the world of work will become permanent, whether through rapid advances in technology, socio-political and demographic changes, or environmental challenges. It will lead to a fundamental change in the demand for labour, skills, the labour market, and the work environment. We must rewrite the rulebook of education and employment.

To achieve this, we need the right tools, and the right attitude. It is obvious that traditional education systems are fast becoming inadequate for the demands of the new age. The private sector can fill part of this gap.

At the Adecco Group, we're reshaping our ecosystem of brands and services to align with these demands. We view each branch of this ecosystem—from temporary staffing and permanent placement to freelancing and entire workforce management—as one intertwined and complementary whole that offers clients and candidates a 360-degree service throughout the entire work-life cycle.

In the future career example above, I mentioned GA, which offers bespoke in-demand skills training remotely, onsite, or on campus to companies and individuals. There is a whole new breed of company and worker that wants high-level skills training as a service. For example, the French bank BNP Paribas has asked GA to help them up-skill 10% of their workforce, or more than 1,000 workers, over the next five years.

The majority of roles in the future world of work call for a type and level of education that exceeds the scope of standard teaching provided by mandatory education up to the secondary school level in today's world. And here the public sector must step up. It is a matter of some urgency that we redesign our education and social protection systems to reflect those needs. If we fail to take that step, we will only see more companies struggling because of a lack of available skills and more workers falling behind in the skills race. Our education system will be failing everyone.

There are signs that employees appreciate the scale challenge. A recent study by the Adecco Group and the Boston Consulting Group,<sup>2</sup> involving about 4,700 workers in nine countries, showed that 62% of respondents saw themselves as primarily responsible for acquiring new skills.

There are some areas, such as technology, where change is moving so fast that it is hard for our workforces to keep up. Take the example of automation. This breakthrough in science has replaced or reshaped many traditional manufacturing and services roles. As automation has replaced the demand for certain hard skills in the workplace, the demand for soft, transferable, flexible skills has also grown. These are the skills of the future: problem solving & critical thinking, leadership & people management, and creativity & communication.

Unfortunately, these valuable skills are often learned outside of the classroom because school curricula have failed to keep up with the pace of change. It is vital that these skills become part of a standard education, driven by close interaction with the business world.

Our future skilling study with the Boston Consulting Group found that two-thirds of employees anticipate that their job will change significantly every five years because of technological advancement. Most employees are concerned about the impact of change and what it will mean for their job security.

It is clear that we need to find solutions that enable our workers to re- or up-skill on multiple occasions through their lives. This must become a core policy for companies and a central pillar of our social systems—a lifelong learning account as part of social protection schemes would be ideal.

## BEYOND EDUCATION

While we need an overhaul of our education system and a new mindset when it comes to learning new skills throughout our working lives, we must also recognise that this demand for change goes beyond education: it is not just about skills or talent.

In a VUCA world, everyone needs to learn the entrepreneurial spirit of the best survivors in the natural world. Governments and education institutions must acknowledge that preparing our young people for the world of work means ensuring that

they develop the right personality traits, an informed view of the world and the forces at work within it, and the ability to learn and adapt throughout life.

While so much of our traditional education revolves around acquiring academic knowledge or hard skills, it is far more valuable to know how to apply relevant knowledge in the world of work. Education systems cannot teach only facts and theories, they must also teach us how to apply and exploit that knowledge in the real world. They need to teach us to become entrepreneurs, just like the chameleon.

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An updated education system really can make the difference—we call it *Education 2.0*.

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## CONCLUSION: EDUCATION MUST BE FIT FOR PURPOSE

As the world changes, so must we. The successful worker of tomorrow will be an entrepreneur in his or her own personal development, geared for lifelong learning with the right kind of skills. Some are already getting the message: while our future skilling study found that only 39% of total respondents had acquired digital skills, that figure rose to 57% of participants in China and 63% in India.

The successful businesses of tomorrow will be flexible and adaptable to change, reimagining ways to manage their workforce needs and investing in the skills of their workers as standard. Crucially, our future skilling survey found that 77% of respondents took the training policies of a future employer into account when considering a new job. Employers take note!

The visionary governments of tomorrow will redesign traditional education systems to focus just as much on soft skills as on hard skills and academic knowledge. They will facilitate lifelong learning and establish social protection schemes such as education accounts that allow individuals to contribute to the cost of their own up- and re-skilling. And the HR industry will help shape the future of work, with cutting-edge services such as those offered by Lee Hecht Harrison and GA.

We stand on the cusp of a world of work that will enable individuals to develop and evolve in ways never imagined before—to follow their passions and not just follow the herd. It's a world where businesses can unleash new levels of productivity and competitiveness. And it's a world where governments can future-proof their economies and unlock untapped prosperity.

In a future that works for everyone, we will be not just chameleons, but grand designers of our own destinies.

## ENDNOTES

- 1 European Commission (2016).
- 2 Adecco Group & Boston Consulting Group (2018).

## REFERENCES

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## CHAPTER 3

# Leading through Change

**Vinod Kumar**

*Tata Communications*

*'Move fast and break things'* used to be the Silicon Valley motto, and it's certainly true that technology is moving faster than businesses, governments, and society know what to do with. Decades ago, when dial-up internet connectivity was the new big thing, technologies such as the internet of things (IoT), Artificial Intelligence (AI), cloud computing, and blockchain were not even on the radar. The pace of change is making simply keeping up a big challenge for everyone, but the huge changes afoot for businesses pose many more opportunities than drawbacks. Governments cannot create legislation fast enough to keep pace with disruptive new business models, and innovations being introduced are rapidly changing the face of cities and workforces the world over. Legacy businesses are struggling to implement the meaningful changes they need quickly enough to remain competitive. Leaders in business and politics, however, *can* lead through this environment—one in which the only constant is change—by cultivating a culture that champions continuous learning above all else.

Through my conversations with our customers, I know that technology is the great enabler of our time. It's a force for positive change that works best in conjunction with people. Technology improves lives, but only by harnessing it with a positive intent can we make the world a better place for everyone.

## THE TALENT GAP IS INCREASING

For the first time, this year's study includes a long-term analysis based on the first six years of GTCI data collection. This analysis shows that global talent competitiveness inequality is on the rise, with a talent gap between rich and poor nations that is increasing year on year. All of us have a responsibility to ensure that we are working towards a democratised technology revolution that bridges this gap, through whatever means necessary. Only when government, business, and civil society work in conjunction with each other can the biggest global challenges be addressed. Indeed, the implementation of the Global Data Protection Regulation (GDPR) in Europe during May 2018 was one such way

government sought to rein in technology and allow citizens to regain control over their data.<sup>1</sup>

Globalisation 4.0, the theme of this year's World Economic Forum Annual Meeting in Davos, is extremely timely considering the speed of change we are now going through in the world and the opportunities this change is presenting us with, if we're willing to look. Globalisation 4.0 means we can no longer work in corporate silos. Globalisation must now work hand in hand with Industry 4.0 and the march towards automation and data exchange.<sup>2</sup> Globalisation can be used as a force for good: to help businesses become more inclusive, sustainable, job-creating, and equitable. After all, we spend a large portion of our time at

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The only way we can experience the benefits that technology has to offer is to acknowledge that, at the end of the day, it's all about people.

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work, and humans find meaning through doing. The future of work is in our pursuit of growth, both personal and professional.

The impact of technology goes beyond the four walls of our businesses, and we must examine and address it based on a human-centric approach. As leaders in our fields, it is our responsibility to equip the next generation of workers with the tools they need, not only to succeed in businesses that are now becoming embedded within the Fourth Industrial Revolution, but also to create a shared, self-perpetuating, and sustainable future, where technology generates opportunities for everyone.

### ENTREPRENEURIAL TALENT IS CRUCIAL

Businesses, of course, are about people, and success can be found by hiring entrepreneurial minds with diverse cognitive backgrounds. Business culture therefore plays a crucial role by instilling the open atmosphere required to promote entrepreneurial talent. No one can predict where the next great idea will come from, so learning must be championed and 'failure' viewed as a lesson learned. This approach will ensure that businesses will thrive with their culture of intrapreneurship, driving their talent to discover what more can be achieved. People who are curious about the world and seek out ways to learn will spot opportunities; contribute to a re-evaluation of business practices; attract like-minded, cognitively diverse talent; and discover new revenue streams. Technology's positive impacts can be felt through its usefulness in inspiring and enabling people to create. Start-ups are a good example of how creatively minded

businesses can grow from just a single person with an idea to a fully fledged icon of business in the digital world.

### CREATING A CULTURE OF LIFELONG LEARNING

The only way we can experience the benefits that technology has to offer is to acknowledge that, at the end of the day, it's all about people. To unlock the positive potential that technology brings, we require a fundamental shift in the collective mindset. We need one that builds a culture that fosters change and cultivates a spirit of continuous learning—that is, un-learning and re-learning. We cannot change the past, so we need to focus our attention on these lessons to find creative digital solutions for the future and continue to look forward.

If you look at the economic development of the world and how technology in various forms has been adopted over centuries, human beings have always benefited—as long as they have made themselves versatile from a skills standpoint. To be successful, I would argue that everyone in the business must assume an element of personal responsibility.

More importantly, organisations and leaders need to be sincere in their efforts and enact measures to enable learning and prepare people for the future of work. Before business leaders can advocate to the rest of the world, they must ensure that they are practicing what they preach—a business must embrace and adopt the digital experience internally before attempting to fly the flag externally.

Take AI—at Tata Communications, it is our belief that AI diversifies human thinking, rather than replaces it. Further, we passionately believe that a future of multiplicity, where groups of machines and humans collaborate to innovate and solve problems, will contribute to a more productive and inclusive world. This is a sentiment echoed in our recent study, *Cognitive Diversity: AI & the Future of Work*.<sup>3</sup> The study finds that 90% of global business leaders believe that AI will enhance decision making and 75% anticipate that AI will create new roles within their businesses.

Far from being considered a threat to jobs, AI will allow humans to be *more* human in business, freeing them up to bring the very human traits of creativity, empathy, and communication to business proceedings.

### THE BETA MINDSET

Through our discussions with C-suite leaders across the world, we have identified common cultural challenges to digital transformation as well as the behaviours and competencies required by leaders to help pave the way to creating a diverse and inclusive future. For example, teams will embrace change only if they understand why transformation is needed and if they have faith in their leaders. All of the C-suite executives we questioned in our recent study *Cultural Transformation in the Digital World* agreed that digitalisation is the new normal, with a universal belief that embracing digital transformation is urgent and critical for the organisation to not only thrive, but, in fact, to survive.<sup>4</sup>

To address these obstacles, we believe that business leaders need to act as digital stewards. Discussions regarding the importance of technology and the place that it has within a business need to take place at all levels of an organisation. Business

leaders must reach and communicate to staff a common understanding of their direction, their goals, and what kind of digital futures they want to create. They must enact policies and training schemes that allow their staff to upskill. Giving staff the right tools to succeed is the surest way to success, and all teams should see themselves in this context—approaching their work with a beta mindset—always seeking out ways to learn and grow and add value to their lives and, by extension, to their organisations. This mindset will help them move forward, try new things, and learn from missteps.

To successfully unleash the positive potential that technology can bring requires a fundamental shift in the collective mindset of an organisation. Such a mindset requires ongoing focus to build a culture that fosters change and cultivates a spirit of continuous, or lifelong, learning as well as a focus on the value of entrepreneurial talent. By encouraging staff to take personal responsibility, they will feel more empowered to engage in learning behaviours that will benefit both them and their organisation.

## CREATING A COLLABORATIVE WORLD

We can make businesses work for people by helping companies navigate the opportunities technology brings and also helping them evolve to ensure they are well placed to reap the rewards of a proactive, learning-first strategy. It's all about how you, as a leader, look at the world and how you bring your staff and stakeholders along on that ride.

The world is changing, fast. It's messy, it's incomplete, and it will never slow down. Therefore, society, and indeed business, should focus on the elements they *can* control. Part of this process is instilling resilience and adaptability in your people, so that they are able to spot and seize opportunities as they appear. It's about learning, re-learning, and always being willing to think collaboratively.

In my experience, businesses and people thrive when we are all set up to be open to opportunity and new ideas. Change doesn't have to be scary.

## ENDNOTES

- 1 Details about the GDPR can be found at <https://eugdpr.org/>
- 2 *Industry 4.0*, also called the *Fourth Industrial Revolution*, is the current trend of automation and data exchange, including cyber-physical systems and IoT, among others.
- 3 Tata Communications (2018a).
- 4 Tata Communications (2018b).

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## CHAPTER 4

# Gaining Global Competitiveness through *Rendanheyi*: Case Studies from the Haier Group

*Haier Model Research Institute*

The Haier Group is a leading provider of better-life solutions; its white goods business brand has been recognised as the most famous worldwide for nine consecutive years according to Euromonitor data.<sup>1</sup> In the era of the internet and the internet of things (IoT), Haier has evolved from a traditional manufacturing enterprise (which in 1984 had been a failing and demoralised manufacturer of refrigerators) into a win-win IoT community ecosystem, guiding global companies to take the lead in igniting the IoT economy. Haier endeavours to inspire every employee to become a CEO of their own, thus embodying the concept put forward by Immanuel Kant: *'Act in such a way that you treat humanity, whether in your own person or in the person of any other, never merely as a means to an end but always at the same time as an end'*<sup>2</sup>—that is, each person (or in this case, each worker as well as

each customer/product user) should be treated as an end rather than merely a means to an end.

## A DEFINITION OF ENTREPRENEURIAL TALENTS

According to *The Global Entrepreneurship Index 2018*, an *'entrepreneur is a person with the vision to see an innovation and the ability to bring it to market'*.<sup>3</sup> In this context, Haier constitutes an interesting (or even unique) example: At Haier the hope is that everyone can be an entrepreneur. Haier empowers its employees and gives them three areas of authority: the authority to make on-site decisions, the authority to select and appoint personnel, and the authority to distribute profit. In the industrial era, enterprises were inflexible. They aimed only to become bigger and stronger, like dinosaurs. In contrast, in the internet era, enterprises aim to be

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The Haier Model Research Institute (HMRI) is a think tank in the Haier Group. It provides services to global research bodies and companies, ranging from basic theoretical research and training classes to solutions, and integrating the elements of manufacturing, learning, and research with interactions throughout the process. The open and co-creative ecosystem of HMRI incorporates world-class academic research resources such as the Harvard Business School, the Stanford Business School, and so on; it has also established close relationships with well-known management institutes and medias around the world, such as theThinkers50, the Global Peter Drucker Forum, and so on.

Table 1

**Characteristics of old-style employees and entrepreneurs in Haier**

| FEATURE          | OLD-STYLE EMPLOYEES                         | ENTREPRENEURS IN HAIER                                                                                                                         |
|------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Driving force    | Driven by management                        | Self-driven                                                                                                                                    |
| Organising force | Organised by the enterprise                 | Self-organised                                                                                                                                 |
| Working status   | Passively execute orders                    | Self-motivated with on-site authority to make decisions, the authority to select and appoint personnel, and the authority to distribute profit |
| Working target   | Accomplishing tasks determined by superiors | Meeting the needs of users and providing best services                                                                                         |

flexible. Even if they are as large as elephants, they must know 'how to dance'.<sup>4</sup> For example, decentralisation, self-organisation, and flattening are the hallmarks of a complex, adaptable entity, while a simple and inflexible entity is characterised by centralisation, absence of self-organisation, hierarchy, and bureaucracy.

The Haier story began in 2000. In that year, after attending the World Economic Forum meeting in Davos, Zhang Ruimin, the CEO of Haier, realised the turning point that the networked economy was bringing to the business world. The biggest rivals of a manufacturer are not its present competitors, but the networked information systems of the future. Based on this premise, in 2005 Haier proposed the *Rendanheyi* model and the entire company began to reform.

The basic meaning of *Ren* refers to employees; *Dan* refers to user value; *HeYi* refers to the integration of employees' value realisation and user value creation. *Rendanheyi* means that each employee creates value directly for users (customers) while also realising his or her own value. Employees do not serve the position itself, but instead serve users' demands. Where there is *Dan*, there is *Ren*. This approach cannot be classified according to traditional business or profit models. It is a model for innovation in networked enterprises that are constantly developing in the iterative course of disruptive, systematic, and dynamic innovation in several fields—strategic positioning, organisational structure, operational processing, and resource allocation. It incorporates the perspectives of the overall enterprise, each employee, and each user in order to adapt to the internet era. It features zero distance to the customer, decentralisation, and disintermediation.

At Haier the organisation was transformed and the middle management level was removed. The number of registered employees has decreased by 45% since its peak, and the Haier ecosystem now creates more than 1.9 million work opportunities for the entire society—it provides opportunities for people to run shops online, and also provides job opportunities for people in the supply chain indirectly. Haier has become a networked organisation where there are only three types of people: the platform owner, the microenterprise owner, and the entrepreneur. No one is a passive executive any longer, but rather a self-motivated person who is self-employed, self-organised, and self-driven. In this way, Haier employees create value for clients and, at the same time, can realise their great potential in the business process by themselves. They are all considered to be the entrepreneurial talents we need and the time calls for.

Haier has set up a standard for employees' pay raises, thus encouraging employees to pursue users' values and transform themselves into entrepreneurs. In the first phase, employees only get regular pay from Haier if they cannot reach the valuation adjustment mechanism (VAM) bottom line. In the second phase, when employees are capable of achieving preset targets, they can achieve the paid-by-user rate (that is, entrepreneurs are paid only when they create value for users). In the third phase, when employees are capable of achieving preset targets and attracting co-investors, they can get a bonus by opting for VAM and co-investment: in this phase, microenterprises sign a contract with Haier based on the VAM before a project begins. Sometimes microenterprises will co-invest with Haier or other co-investors, thus they share the profits and take risks together. In addition, Haier has an incubation platform (HCH) to help entrepreneurs start and run businesses, which also helps Haier to shape and appeal to a growing number of entrepreneurial talents.

**WHY WE NEED ENTREPRENEURIAL TALENTS**

The term *internet of things* (IoT) was coined by Professor Kevin Ashton, director of the MIT Auto-ID Center in 1991. Since then, with the booming of information technology, IoT has been gaining more and more attention. In the IoT age, eventually everyone and everything will be connected through the internet. Uncertainty in business caused by the fast pace of change will rise and companies will face even more rapid change. An enterprise with employees who have little decision-making authority, who can only listen to commands from a manager but not respond directly to changes as quickly as possible, will fall behind its competitors. Therefore, to meet clients' changing needs and deal with the challenges in the coming age of IoT, every employee must be free to make decisions on the ground. They are no longer old-style employees. They are *entrepreneurs* (see Table 1). They are the ones who can truly provide value for the users.

**HOW TO SHAPE AND APPEAL TO ENTREPRENEURIAL TALENTS: RENDANHEYI**

According to *The Global Human Capital Report 2017*, on average, the world has developed only 62% of its human capital. Conversely, nations are neglecting, or wasting, an average of 38% of their talent.<sup>5</sup> To release more potential human capital, the best way is to give people the freedom to do what they can do best. The Haier approach is called *Rendanheyi*. *Rendanheyi* is a

Table 2

**The evolution of Haier's organisational structure**

|                               | STAGE                                                                          |                                                                               |                                                     |                                                                                           |
|-------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------|
|                               | Bureaucratic enterprise<br>1984–1991                                           | Divisional enterprise<br>1991–2005                                            | Networked enterprise<br>2005–2012                   | Platform-based enterprise<br>2012–2019                                                    |
| <b>Background and context</b> | Reform and opening up                                                          | Southern Tour Talk by Deng Xiaoping; China's accession to the WTO             | The age of the internet                             | The fourth industrial revolution                                                          |
| <b>Technology support</b>     | Simple mechanical technologies                                                 | Complex mechanical technologies                                               | The internet technology                             | The technology of the internet of things                                                  |
| <b>Strategy</b>               | Brand strategy                                                                 | Diversification and internationalisation strategies                           | Globalisation strategy                              | Network strategy                                                                          |
| <b>Organisational form</b>    | Triangle                                                                       | Expanded triangle                                                             | Inverted triangle, community of interest            | Microenterprise                                                                           |
| <b>Organisational logic</b>   | Heter-organisation (centralisation of authority)                               | Heter-organisation (decentralisation of authority)                            | Self-organisation (delegation of authority)         | Self-organisation (no hierarchy)                                                          |
| <b>Resource allocation</b>    | Vertical integration (integrated management)                                   | Longitudinal integration (M&A)                                                | Horizontal integration (outsourcing)                | Platform integration (sharing)                                                            |
| <b>Model case</b>             | Zhang Ruimin smashed defective refrigerators; comprehensive quality management | 'Stunned fish'* factory construction and M&A in domestic and overseas markets | <i>Rendanheyi</i> model; independent operation unit | Development of microenterprises (e.g., Thunderobot's growth and development) <sup>†</sup> |

Source: Translated from Hu (2018a).

Notes: M&A = mergers and acquisitions; WTO = World Trade Organization.

\* A 'stunned fish' is a metaphor for companies with good hardware/technology/equipment/factories and weak management. Once effective management is implemented in these companies, they can achieve great performance (see Paine & Crawford, 2001).

† Thunderobot is a typical successful microenterprise. It was founded by three post-1980s generation entrepreneurs. The team captures the needs of the users and always follows those users' needs for gaming computers and accessories. They used the *Rendanheyi* model with great success. Details can be found at <http://thunderobot.com/>.

business model that shapes an effective entrepreneurial talent system including a paid-by-user system—an effective motivation mechanism. Since *Rendanheyi* was proposed 13 years ago, Haier has developed and extended this model extensively (see Table 2 for a timeline of this process).

By adopting *Rendanheyi*, Haier has fostered great entrepreneurial talent and achieved great financial performance. For example, Haier's incubation, investment, and acceleration platform, HCH Ventures, is a platform to help entrepreneurs start and run their business.<sup>6</sup> By the end of 2017, 2,483 entrepreneurship projects had been gathered on HCH, 256 entrepreneurship projects had moved on to incubators, and 4,325 entrepreneurship and innovation incubation resources were available on the platform. Haier has established 24 incubators in nine countries around the world, providing rich innovative resources for entrepreneurs. At present, Haier has more than 200 microenterprises, more than 3,800 service and support microenterprises, and 1.22 million micro-stores that are working hard to create an open platform to attract human resources and investment from society. Haier's HCH platform also shows the transformation from manufacturing products to incubating entrepreneurs. Already more than 100 microenterprises have an annual revenue of more than 100 million yuan and 19 microenterprises have a valuation of more than 100 million yuan.

## THE PROMOTION AND APPLICATION OF RENDANHEYI ACROSS INDUSTRIES AND REGIONS

The *Rendanheyi* model yields great results not only in Haier, but also in other companies, industries, and countries. These results can be seen in examples such as GE Appliances and Sanyo in other countries and cultures. Each enterprise has customer-facing microenterprises and service and support microenterprises. The practice of *Rendanheyi* in hospitals and logistics are examples of its experience in different industries. By adopting the *Rendanheyi* model, these companies and organisations help realise people's potential and achieve growth as well as industry leadership at the same time. This section provides details about how *Rendanheyi* has been applied in these four instances.

### GE Appliances in the United States

At first the *Rendanheyi* model was not totally understood at GE Appliances, and it was difficult to change the company's long-standing hierarchy and linear management thinking and adopt the new approach. However, Haier encourages employees in GE Appliances to launch a pilot project first. First, the water heater department tested *Rendanheyi* and found that it did not harm the interests of employees as some people feared it would. On the contrary, it stimulated the enthusiasm and creativity of the staff. Each employee was able to respond to the market and the needs of users faster.

GE Appliances was then divided into seven ‘mini’ categories, representing seven household appliances: kitchen appliances, refrigerators, washing machines, dishwashers, water heaters, a complete set of terminal air conditioners, and FirstBuild and Giddy (two GE Appliance platforms for crowdsourcing innovation). In 2017, GE Appliances began to hold elections for micro-enterprise owners, electing three senior executives to form a management committee.

This model of transforming the company’s approach to management was immediately successful. The overall market competitiveness of GE Appliances has been significantly enhanced. In 2017, in the first year after its acquisition, GE Appliances achieved its best performance of the decade, with revenue growth outpacing that of the industry and the company exhibiting double-digit profit growth.

### Sanyo in Japan

At the beginning, it was hard to promote the Haier model at Sanyo because the culture of Japanese companies was strong and entrenched. But with the initial success of a pilot programme and a comprehensive understanding of the culture, the enterprise-centric and boss-centric approach in Sanyo was gradually replaced by the *Rendanheyi* model. The real change was to care about and move the company’s focus to users of the products. *Ren* needed to combine with *Dan*. Actually, Sanyo’s technology is very good and their products are good. The problem was that they did not care whether the product was what users actually wanted, and instead they were concerned merely to implement the suggestions of superiors. But eight months after the merger and acquisition of Sanyo and moving to the *Rendanheyi* model, the company’s loss was reversed.

### Health Industry: A Hospital and U-Blood

In the past, the number of patient falls in Ying Kang Nursing Hospital in Shanghai was high: the hospital recorded 50 falls a month and the chance of the fall causing complications was as high as 50%. Since adopting the *Rendanheyi* model in 2016, the number of patient falls per month has dropped to 0.5, and no one has experienced complications. In addition, the proportion of all prescribed drugs to gross earnings decreased by 5%, the bed occupancy rate increased by 4%, and the nurses earned 18% more than they had before the *Rendanheyi* model was adopted.

This remarkable result has come about because the *Rendanheyi* method truly cares about people and focuses on people’s needs. In the hospital, *Rendanheyi* combines the needs of the doctor and the patient. Where there is a patient, there is a doctor. Through floor reform, doctors, nurses, and janitors not only take the initiative to assume responsibility, but they also take the patient’s experience as an important point of reference. The work of the doctors, nurses, and janitors reflects the increase in focus on the satisfaction of patients and their families, thus truly achieving ‘doctor-patient integration’.

Humanistic care is regarded as a top priority in Ying Kang because it is related to the patient’s experience. Ying Kang uses the floor management method and patients can choose their own floor and doctors. Bed occupancy, patient evaluation, and

staff performance of each floor are linked. Since the hospital has adopted this method, the enthusiasm of every doctor and nurse has been fully mobilised because they are always paying attention to the patient’s physical condition and proactively caring about the patient’s feedback.

The floor-based model is the embodiment of ‘decentralisation’. In this model, all the departments are divided into 15 microenterprises, with 15 teams. Doctors and nurses are no longer the executors of the medical system, but the real entrepreneurs. In short, by turning the medical staff into practitioners of a ‘microenterprise’ (from Haier’s microenterprise concept), with clear rewards and penalties and a healthy competition among staff members, after deducting the costs of running each floor, a small amount of income will be used for microenterprise members to share. Driven by the management mechanism, Ying Kang’s development has entered the stage where the model has been accepted and operates well, and the income of doctors and nurses has been greatly improved, thus realising the comprehensive transformation into sharing and creating.

Furthermore, in a breakthrough in innovative practices of the IoT and the good practice of *Rendanheyi*, the U-Blood IoT blood solution (hereinafter referred to as *U-Blood*) is creating an ecosystem of large data-sharing platforms for the entire process of blood information, temperature monitoring, and traceability. To this end, Haier biomedical and the Affiliated Hospital of Qingdao University began a joint exploration process. After several iterations, the IoT-based model achieved remarkable results.

U-Blood uses radio frequency identification (RFID) and can trace every unit of blood. Every unit has a unique ID. When a surgery needs blood, staff can scan the bar code on the list of requirements and get the detailed position of the blood needed. Refrigerators are also designed specifically for the storage and positioning of the blood. U-blood updates dynamically—so whether the available blood is sufficient for the hospital’s needs can be traced in a timely manner.

Through U-Blood, the South Hospital District’s Qingdao University-affiliated hospital has successfully saved 13,000 millilitres of blood. That is to say, in less than two months, the amount of blood saved by U-Blood could support 10 major operations. In the future, after U-Blood covers the entire hospital area, according to conservative estimates of the numbers of surgeries that need blood, if calculated as 1,000 units per month, the amount of the blood saved could support 200 more operations per month.

U-Blood results in considerably more efficient blood management. Because of the adoption of U-Blood in the hospital, the rate of inefficient blood use dropped from 20% to less than 5%; more importantly, it is possible to perform 20% more surgeries.

By moving to the U-Blood blood bank, blood resources can be dispersed into independent wards or operating room areas. This has enabled an evolution from searching for blood to checking blood. But for the hospital’s Department of Blood Transfusion, hospital-wide supervision of the relevant blood storage equipment and the corresponding alarm function—which gives a warning when there is a problem—needs to increase. Grassroots departments can find an abnormality or error, such

as the wrong temperature or a shortage of a particular type of blood, by themselves, and can solve the problem in the category of a first-level alarm. Or they can start a second-level alarm, classify the problem layer by layer, control the problem layer by layer, and realise the effective decentralisation of management. The ultimate embodiment of the U-Blood security management supervision and classification is to improve management efficiency and reduce dissipation of human and material resources.

### Logistics Industry: Goodaymart

The Haier enterprise Goodaymart combines the strengths of virtual (internet) networks, marketing networks, logistics networks, and services networks. The entrepreneurship programme of the Goodaymart Lejia express locker aims to cover 80,000 communities and 200 million users within three years. Under this programme, Lejia provides the services and the lockers to store packages. Users can get their packages by scanning the QR code on the Lejia locker in their community. If this goal is achieved, this community service microenterprise will rank 1st in the logistics industry.

Starting from nothing, the former microenterprise owner, Zhang Yi, raised RMB 140 million with his team in only four months after crowdfunding in service outlets (express service centres) across the country. However, believing that such an amount was far from sufficient, they also focused on attracting outside capital. Venture capital investment got involved, which was large in amount yet came with an important requirement: the leading goal determined with VAM would need to be achieved within three years, otherwise the entire RMB 9 million co-invested by Zhang Yi's team would be 'returned' to the VC firms. To achieve the goal within the allotted time, the team decided to recruit more talent and expand their footprint in more communities.

By the end of January 2016, over 10,000 communities had established contracts with Zhang Yi's team and more than 2,500 communities have had Lejia express lockers installed, with a further increase of 100 per day. This means that people who live in these 2,500 communities can use the services provided by Lejia. They do not have to come home in a hurry to get their packages or ask others to help them when they are not at home. They can scan the QR code to get their packages from the Lejia express locker when they return home. This is safer for the packages and more convenient for both couriers and customers.

When people want to send a package, they can scan the QR code to open a locker/case to put the package in and pay the fees using their mobile phones. When a package has arrived for them, they will receive a reminder on their phones and can get the package by scanning the QR code on the locker when they get back home. In addition, through the win-win value-added model, the team has attracted over 200 advertisers and 1,100 suppliers of agricultural products, and has established partnerships with a number of convenience service providers and financial companies. As a result of these moves, a value-added service system that covers logistics services in communities, community convenience services, direct supply, and customisation of

agricultural products and new media operations in communities has begun to take shape.

### Compensation with the Rendanheyi Model

The change to the compensation system results from the change of contract structure principles within Haier. Haier replaces the principal-agent incentive contract of Western enterprises with an all-taking-part contract.

The former principal-agent contract covers only a few people and easily breeds deceptive behaviour. Under the win-win model of *Rendanheyi* it is necessary to change the contract mechanism to truly combine employees and users, and to orient the incentive contract towards all employees rather than only a few people. In the all-taking-part contract model, each employee has a contract with the market. Their earnings link with their market value—namely, the user value they create. The more value they create, the more they earn.

After stepping into the company's Networking Strategy stage,<sup>7</sup> the exploration of 'paid-by-user' becomes deeper and broader. Haier cuts off supplies to microenterprises that have their own independent authority to distribute profit and implements a zero-base fixed salary and a zero fund policy for these microenterprises—that is, the base salary of each employee is zero, and there is no automatic funding for core programmes. To drive employees to transform themselves into true entrepreneurs, all employee compensation comes from the value they create for users. With paid-by-user as the goal, Haier establishes a system of dynamic partners, value adjustment and co-investment, and goal-based gathering and dispersing. A radical change centring on paid-by-user is made throughout the entire compensation system. Paid-by-user is a driving force for transformation in the internet era that also creates a platform for employees to create their own value.

An important management tool to achieve the paid-by-user goal is the Win-Win Value Added Statement. In the income statement of traditional enterprises, profit equals revenue minus costs and expenses. The compensation of all employees depends on the total profit of the enterprise. Now each microenterprise has a Win-Win Value Added Statement and the employees cannot share value without creating user resources. The aim of the Win-Win Value Added Statement is to add value for all stakeholders in the ecosystem. Thus Haier proposes a *common target and salary source*. Under this concept, all members of the microenterprise will receive compensation only corresponding to the effort they make together to achieve the common target. Lack of such effort affects the end-to-end compensation of the ecosystem. This mechanism successfully avoids haggling and shifting of responsibility among nodal microenterprises.

### CONCLUSIONS

The examples of good practice as seen in the experiences of GE Appliances, Sanyo, Ying Kang Hospital, U-Blood, Goodaymart, and many others demonstrate the incontrovertible value of *Rendanheyi*. On the basis of *Rendanheyi*, an industrial networked platform—COSMOPlat (a manufacturer that customises products by using big data and IoT)—has been built. This platform

allows users to participate in the production process through the community, thus achieving mass customisation. The international standard organisations—the Institute of Electrical and Electronics Engineers (IEEE), the International Organization for Standardization (ISO), and the International Electrotechnical Commissions (IEC)—all chose Haier to take the lead in the study and the establishment of the international standard of mass customisation model. All these achievements originate from the stimulation of personal values by the model of *Rendanheyi*. No matter in which country or industry this model is used, it can be adopted successfully and gain good performance. We call it a *salad culture system*—it respects the cultures of every country while the *Rendanheyi* model is unified, like a salad in Western food. Vegetables keep their original shape, but salad dressing is unified.

In the era of uncertainty, every leader has to forge ahead and turn the fear into power toward self-improvement and fulfilment to maximise personal values. After 13 years of practice at Haier, it has been clearly demonstrated that the *Rendanheyi* model can help cultivate entrepreneurial talents and achieve leadership in global competition. It has become a symbol of the management thought of the integration of Chinese wisdom, the spirit of the times, and the world pattern.<sup>8</sup> It breaks the bureaucratic system and it has more abundant theoretical connotation and practical significance in the history of human organisation evolution.<sup>9</sup>

The *Rendanheyi* model is leading the world management trend, showing that China's business management model can be the best model. It is hoped that the *Rendanheyi* model will be applied to diverse fields globally to help more enterprises and organisations gain global competitiveness.

## ENDNOTES

- 1 Euromonitor issued a certification of claim validation to the Haier Group. See Euromonitor International Limited, Consumer Appliance 2018 edition; details can be found at <https://www.euromonitor.com/consumer-appliances>.
- 2 Kant (1998).
- 3 GEDI (2017), p. 17.
- 4 Gerstner (2003).
- 5 World Economic Forum (2017).
- 6 Details can be found at the HCH website <http://www.ihaier.com/>; the website for the lab is <http://lab.haier.com/>.
- 7 The Haier strategy begins with a Brand Building Strategy and moves through a Diversification Strategy, an Internationalisation Strategy and a Global Brand Strategy to the Networking Strategy.
- 8 Hu (2018a).
- 9 Hu (2018b).

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## CHAPTER 5

# Entrepreneurial Talent and Global Competition: A Unicorn's View

**An interview with Frédéric Mazzella\***

*Founder and Chairman of BlaBlaCar*

Over the last couple of decades, competition between businesses, governments, and all types of organisations has taken a different turn. Against the background of unprecedented technological change, new *modus operandi*, new business models, and new forms of innovation have emerged. Entire segments of national economies have been displaced, and value creation has shifted from traditional advantages to new, more mobile, and more diversified ones. In this rapidly changing, increasingly digitalised environment, all organisations need the talent that will help them take appropriate risks, articulate and communicate a vision that will transcend cyclical changes, and manage their assets in an agile way. In other words, they will need

entrepreneurial talent who will need to work with other, often very different players, in an environment that allows or even promotes that type of collaboration.

Our editors Bruno Lanvin and Felipe Monteiro conducted an interview with Frédéric Mazzella, Founder and Chairman of BlaBlaCar, who has a number of clear, audacious ideas around entrepreneurial talent. Let us note that BlaBlaCar is Europe's leading online long-haul ridesharing platform. Present in 22 countries, featuring a community of 65 million members and over 18 million travellers every quarter, BlaBlaCar is nowadays a great example of a trusted framework in what we refer to as *the sharing economy*.

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\* Interview carried out at BlaBlaCar global headquarters in Paris by Bruno Lanvin and Felipe Monteiro, September 2018.



## What is your definition of *entrepreneurial talent*?

### Frédéric Mazzella:

The face of entrepreneurship has changed a lot over the last decade because of digitalisation and because of the transformation of labour markets, where the concept of loyalty has changed since people have become free agents. As for a definition of *entrepreneurial talent*, I would say it is threefold: we need to look at **mindset, ability to learn, and the acceptance of failing**. Being innovative, without any fear of judgement, is yet another crucial element of entrepreneurial talent. Whether innovative, creative, or operational, the common denominator should be dedication and passion but always specific to the required skill/activity.

What's more, different types of talents might be needed according to a given task, although entrepreneurial talent seems very relevant in today's digital world, especially from the perspective of organisations that are either starting or scaling up. The importance of talent is also directly proportional to the size of the organisation: in larger structures it might be acceptable if some of the workforce isn't passionate, whereas in a small structure, and in the case of a start-up particularly, passion for what you do is a must, which means hiring talent that's not passionate would lead to more complexity. Talent and passion are therefore the keys to success, not to mention that they will help in reacting to challenges and unknowns.

## Do you think that *entrepreneurial talent* can be taught and learned? Or is it a trait of character that needs to be nurtured and steered?

### Frédéric Mazzella:

At BlaBlaCar, we most certainly promote and focus on learning; the word *learning* is actually featured in two of our six core principles, which to me represent the best two learning processes there are: experimenting yourself and learning from the experience of others. Our 'Fail, Learn, Succeed' principle acknowledges the approach of experimenting yourself and learning from your own failures; our other core principle 'Share More, Learn More' encourages our collaborators to really learn from each other; the lessons learned will then serve as best practices for the whole team. Having the right mindset to progress as fast as possible is therefore an obvious requirement.

While I'm not sure if a mindset can be taught or not, the work of Professor Carol Dweck points to two types of mindsets: the fixed mindset and the growth mindset. I believe organisations should aim at encouraging and nurturing growth mindsets, which occurs when individuals are taking pleasure in doing what they've already learned and are willing to try new things, not to mention that they won't be afraid of being judged since they anticipate that failure always translates into an invaluable learning journey. This acceptance of such a learning process is actually embedded in the company culture. As a matter of fact, it starts in the beginning, with the hiring process.

## How has *entrepreneurial talent* been important in the different stages (i.e., from founding to global scaling up) of BlaBlaCar's history so far?

### Frédéric Mazzella:

Ten core principles were articulated in 2013 and have been revised in 2017. We've also produced a book—*BlaBlaCar the Inside Story: 10 years, 10 values, 10 stories*—which looks at our 10 first years through the lens of those 10 principles, and over the years we've published many reports, especially around building trust and our social impact. Funding requires passionate people, then **growing requires all kinds of talents**, not necessarily entrepreneurial so long as they each have their own expertise, and obviously sharing the passion would be a plus. Another factor would be the ability to launch innovative and creative initiatives. In terms of recruiting, we ensure that individuals who aren't creative are at least in agreement with creativity, which will help avoiding conflict. Attracting and hiring talent is therefore a thorough (eight-step) process that's been tough but successful so far. The key is to make the company as attractive as possible using clear statements, principles, and customer value propositions (creating an employer branding that attracts only the best and most aware talent) while making the selection process tough enough to create a spirit of competition. This strikes a balance and ensures you don't get unmotivated, underskilled talent, thus compensating for the demanding recruiting requirements.

## What is the role of specific locations (cities, regions, countries) in producing, attracting, growing, and retaining *entrepreneurial talent*?

### Frédéric Mazzella:

I believe it's all about **building an ecosystem** where all stand alone components are cooperating—from education to funding to entrepreneurial context—which means the ecosystem revolves around two main factors: **talent and money**. Indeed, these are the two main ingredients for start-ups to grow and they need to be fostered and boosted by the environment. As for talent, I would say some locations in particular attract young talents from all around the world while they convert them as their alumni. If we look at the universities of Stanford and Sichuan, where—through job fairs and tours—we see it's easier for companies to get ahold of talented graduates and hire them eventually. On another note, this circles back to the capacity individuals should have to 'learn to learn' and to consistently be eager to learn, which means that academia should develop more and more lifelong learning programmes.

When it comes to money, start-ups must prove their product and test their results, which means that after finishing the product race and ensuring their product is better than the competition's, they must then inject a lot of money to develop and grow, not to mention cover the marketing and PR costs. By doing so they enter into the capital race zone. Not being able to raise funds when the time is appropriate (from business angels



up to typical successive rounds of financing) at this specific stage would lead to missing an opportunity to 'go big', hence the importance of being able to rely on a solid funding system during each and every stage of the company—one where funding is not a one-off and where investors may very well differ and have different stakes one from another.

To some extent, **France is now being compared to Silicon Valley**: the components are being built and the ecosystem is taking over, especially if we look at how markets have evolved over the last 10 years. Nowadays companies who raise dozens of millions do not make headlines anymore, while 5 years ago they did! In 2014 when BlaBlaCar raised \$100 million we were all over the headlines whereas it wouldn't be the case today because it's more common for European companies to raise this much. That being said, we hear only about the companies that succeed in Silicon Valley—in other words, we barely hear about all the ones that don't. This success/failure ratio is important and has influenced the price of building a start-up, not to mention the salaries that are being paid in the tech industry. This has led to another very important consequence: some investors have been looking at other locations since salaries in Silicon Valley are beginning to be too expensive. As a matter of fact, I have personally heard investors advising they'd give the funds provided that the start-up doesn't settle in the Valley!

Looking at numbers, we now operate in 22 countries with long-distance carpooling at the country level and it's been common practice for us to have a physical presence in the capital (e.g., Moscow, Sao Paulo, Madrid). Nonetheless, the **talent policy is global**. For the moment, we are focusing only on finding someone local (i.e., a General Manager) and having them recruit their local team. This way, because management can't be involved in 20 locations at the same time, local managers are being held accountable for their respective regions. We're currently experimenting in France with a product for shorter distances to carpool on commute trips, mainly in the Paris region. This means that if successful we will be able to roll out a service city by city in the future instead of country by country and with a possibly different way of hiring locally.

### What are some of the best examples to follow regarding the stimulation and leverage of entrepreneurial talent (among countries, cities, organisations)?

#### Frédéric Mazzella:

Ikea and Spotify immediately come to mind, followed by Booking.com (Priceline), Adyen, Trivago, Delivery Hero, and Zalando if we look at European examples, while Uber is the striking American illustration.

Location-wise, I would say Paris and Amsterdam, Switzerland and Singapore.

### How important will entrepreneurial talent be in an increasingly digital world in the future?

#### Frédéric Mazzella:

Are locations interchangeable as we go digital? Is a company in Berlin able to move to Düsseldorf without affecting the bottom line, and vice versa? I'm afraid not. The fact that our BlaBlaCar headquarters is in Paris is actually very important since we believe **international cities attract international talent**, who are themselves seeking international (work) opportunities. Featuring 35 nationalities, our company has a great many non-French staff, and living in Paris sets the perfect cosmopolitan tone. To be honest, the BlaBlaCar ambiance feels a bit like the INSEAD one! Talent attraction is therefore clearly linked to the location of a company and this clearly translates into the fact that we don't imagine our HQ being anywhere else than in the French capital. On a side note, should we build a development centre, we might indeed consider other large cities.

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## CHAPTER 6

# JRC Statistical Audit of the Global Talent Competitiveness Index 2019

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More than capital, talents and individual skills are considered to be the driving forces that will enable human beings to thrive in the future. Since 2013 the business school INSEAD has developed the Global Talent Competitiveness Index (GTCI), which aims to summarise complex and versatile concepts related to human capital and talent competitiveness at the national scale worldwide. In so doing, it raises some conceptual and practical challenges, which are discussed in the GTCI 2019 report. This chapter focuses on the practical challenges related to the data quality and the methodological choices made in the grouping of 68 variables into 14 sub-pillars, six pillars, two sub-indices, and an overall index for a total of 125 countries.

The GTCI 2019 has a very high statistical reliability (it has a Cronbach's alpha value of 0.97) and captures the single latent phenomenon underlying the six main dimensions of the GTCI conceptual framework. Country ranks are also robust to methodological choices related to the treatment of missing values, weighting, and aggregation rule (with a shift less than or equal to  $\pm 2$  positions with respect to the simulated median in 89% of

the countries). The added value of the GTCI lies in its ability to summarise different aspects of talent competitiveness in a more efficient and parsimonious manner than is possible with the variables and pillars taken separately. In fact, the overall ranking differs from any of the six pillar rankings by 10 positions or more in at least one-third of the countries included in this year's GTCI.

The European Commission's Competence Centre on Composite Indicators and Scoreboards at the Joint Research Centre (JRC) has been invited to assess the statistical properties of the GTCI each year since its first release in 2013. Thus this audit represents the sixth analysis of the GTCI performed by the JRC. Overall, the JRC concluded that the GTCI 2019 is robust and reliable, with a statistically coherent and balanced multi-level structure. The analysis has been performed in order to ensure the transparency and reliability of the GTCI and thus to enable policymakers to derive more accurate and meaningful conclusions about human capital and national competitiveness, and potentially to guide their choices on priority setting and policy formulation.

As in the previous audits, the present JRC assessment of the GTCI 2019 focuses on two main issues: (1) the statistical coherence of the structure and (2) the impact of key modelling assumptions on the GTCI scores and ranks.<sup>1</sup> The JRC analysis complements the reported country rankings for the GTCI, and for the Input and Output sub-indices, with confidence intervals in order to better appreciate the robustness of these ranks to the computation methodology (in particular, the missing data estimation, weights, and aggregation formula). Furthermore, the JRC analysis includes an assessment of the added value of the GTCI and a comparison with other global measures of human capital, competitiveness, and innovation. Its main conclusions can be summarised as follows: the version of the GTCI model presented in 2019 is coherent, balanced, and robust, displaying strong associations between the underlying variables and the GTCI sub-pillars, pillars, and sub-indices, and hence offers a sound basis for policy interpretations. Some minor issues, which are outlined in this chapter, are also recommended for examination in the next version of the GTCI.

The practical items addressed in this chapter relate to the statistical soundness of the GTCI, which should be considered to be a necessary (though not necessarily sufficient) condition for a sound index. Given that the present statistical analysis of the GTCI will mostly, though not exclusively, be based on correlations, the correspondence of the GTCI to a real-world phenomenon needs to be critically addressed because *'correlations need not necessarily represent the real influence of the individual indicators on the phenomenon being measured'*.<sup>2</sup> The point is that the validity of the GTCI relies on the combination of both statistical and conceptual soundness. In this respect, the GTCI has been developed following an iterative process that went back and forth between the theoretical understanding of human capital and talent competitiveness on the one hand, and empirical observations on the other.

## STATISTICAL COHERENCE IN THE GTCI FRAMEWORK

An initial assessment of the GTCI 2019 data set was undertaken by the JRC in July 2018. The latest GTCI model provided by the development team largely incorporated the issues identified and discussed in previous editions. In particular, the full normalisation of the data was addressed in order to scale all variables onto the same scale. No critical issues were identified in the 2019 model during this preliminary phase of the audit.

The underlying concepts and framework used to describe global talent competitiveness in the GTCI 2019 have remained essentially the same as those in the GTCI 2018, although there are some minor adjustments in this year's edition. The first one relates to the denominator of the variable Scientific journal articles (variable 6.2.5), which has changed from being GDP-based to being population-based. The second consists of a refinement of the variable New product entrepreneurial activity (variable 6.2.3).

Following the iterative process during which the index has been fine-tuned, the current assessment of the statistical coherence in this final version of the GTCI 2019 followed four steps:

### Step 1: Relevance

Variables were selected for their relevance to a specific pillar on the basis of the literature review, expert opinion, country coverage, and timeliness. To represent a fair picture of country differences, variables were scaled either at the source or by the GTCI team as appropriate and where needed.

### Step 2: Data Checks

The most recently released data were used for each country. The cut-off year was set to 2007. Countries were included if data availability was at least 80% at the index level and at least 40% at the sub-pillar level. As a result, the GTCI 2019 data set comprises 125 countries and 68 variables.<sup>3</sup> Consequently, data availability is at least 88% at the Input sub-index level and 63% at the Output sub-index level. Potentially problematic variables that could bias the overall results were identified by the GTCI development team as those having absolute skewness greater than 2 and kurtosis greater than 3.5,<sup>4</sup> and were treated either by Winsorisation or by taking the natural logarithm (in the case of five or more outliers). In total, only three indicators were treated: 2.1.3 Migrant stock, 2.1.4 International students, and 6.2.2 High-value exports (see the Technical Notes of the main GTCI report for details). These criteria follow the WIPO-INSEAD Global Innovation Index practice (formulated with the JRC in 2011).

### Step 3: Statistical Coherence

This section presents the JRC's analysis of the statistical coherence of the GTCI 2019, which consists of a principal component analysis to study the structure of the data, a multi-level analysis of the correlations of variables, and a comparison of GTCI rankings with its pillars and with other similar indices. This latter investigation demonstrates the added value of the GTCI both against its component pillars and vis-à-vis other relevant indices on competitiveness, innovation, and human capital.

#### 1. Principal Component Analysis and Reliability Item Analysis

Principal component analysis (PCA) was used to assess the extent to which the conceptual framework is compatible with statistical properties of the data. PCA confirms the presence of a single statistical dimension (i.e., no more than one principal component with an eigenvalue significantly greater than 1.0) in the great majority (13) of the 14 sub-pillars, which captures 41% (Internal Openness) to 87% (Employability) of the total variance in the underlying variables.<sup>5</sup> A more detailed analysis of the correlation structure within and across the six pillars confirms the expectation that the GTCI sub-pillars are more correlated with their own pillar than with any other. This result suggests that the allocation of sub-pillars to pillars in the GTCI is consistent both from conceptual and statistical perspectives. Furthermore, all correlations within a pillar are positive, strong, and similar and well above 0.7, which suggests that roughly 50% (or more) of the variance in the GTCI pillar scores can be explained by an underlying sub-pillar (see Table 1). These results suggest that the conceptual grouping of GTCI sub-pillars into pillars is statistically confirmed and that the six pillars are statistically well balanced.

Table 1

**Statistical coherence in the GTCI: Correlations between sub-pillars and pillars**

|        | SUB-PILLAR                         | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--------|------------------------------------|--------|---------|------|--------|---------------------------------|-------------------------|
| INPUT  | 1.1 Regulatory Landscape           | 0.95   | 0.87    | 0.86 | 0.86   | 0.82                            | 0.80                    |
|        | 1.2 Market Landscape               | 0.94   | 0.77    | 0.90 | 0.88   | 0.89                            | 0.86                    |
|        | 1.3 Business and Labour Landscape  | 0.91   | 0.79    | 0.75 | 0.73   | 0.76                            | 0.69                    |
|        | 2.1 External Openness              | 0.81   | 0.93    | 0.71 | 0.67   | 0.70                            | 0.62                    |
|        | 2.2 Internal Openness              | 0.78   | 0.90    | 0.75 | 0.70   | 0.69                            | 0.63                    |
|        | 3.1 Formal Education               | 0.70   | 0.51    | 0.86 | 0.81   | 0.76                            | 0.83                    |
|        | 3.2 Lifelong Learning              | 0.84   | 0.81    | 0.94 | 0.75   | 0.82                            | 0.75                    |
|        | 3.3 Access to Growth Opportunities | 0.90   | 0.85    | 0.94 | 0.84   | 0.86                            | 0.84                    |
|        | 4.1 Sustainability                 | 0.92   | 0.82    | 0.90 | 0.95   | 0.87                            | 0.84                    |
|        | 4.2 Lifestyle                      | 0.75   | 0.57    | 0.75 | 0.94   | 0.81                            | 0.83                    |
| OUTPUT | 5.1 Mid-Level Skills               | 0.66   | 0.49    | 0.65 | 0.79   | 0.83                            | 0.74                    |
|        | 5.2 Employability                  | 0.80   | 0.77    | 0.83 | 0.69   | 0.83                            | 0.69                    |
|        | 6.1 High-Level Skills              | 0.79   | 0.63    | 0.82 | 0.86   | 0.86                            | 0.96                    |
|        | 6.2 Talent Impact                  | 0.81   | 0.68    | 0.86 | 0.83   | 0.79                            | 0.95                    |

Source: European Commission, Joint Research Centre (2019).

Note: The values are the bivariate Pearson correlation coefficients ( $n = 125$ ). Shaded values represent the coefficients between sub-pillars and the respective pillar based on the GTCI conceptual framework. Values greater than 0.70 within the shaded areas are desirable as they imply that the pillar captures at least 50% ( $\approx 0.70 \times 0.70$ ) of the variation in the underlying sub-pillars and vice-versa.

The six pillars also share a single statistical dimension that summarises 87% of the total variance, and the six loadings (correlation coefficients) are quite high and very similar to each other, ranging from 0.86 (Attract pillar) to 0.96 (Enablers pillar). The latter suggests that the six pillars contribute in a similar way to the variation of the GTCI scores, as envisaged by the development team: all six pillars are assigned equal weights. The reliability of the GTCI, measured by the Cronbach's alpha value, is very high at 0.97—well above the 0.70 threshold for a reliable aggregate.<sup>6</sup>

An important part of the analysis relates to clarifying the importance of the Input and Output sub-indices with respect to the variation of the GTCI scores. As mentioned above, the GTCI is built as the simple arithmetic average of the four Input sub-pillars and the two Output sub-pillars, which implies that the Input sub-index has a weight of 4/6 versus a weight of 2/6 for the Output sub-index. Yet this does not imply that the Input aspect is twice as important as the Output aspect in determining the variation of the GTCI scores. In fact, the correlation coefficient between the GTCI scores and the Input or Output sub-index is 0.99 and 0.97, respectively, which suggests that the sub-indices are effectively placed on an equal footing. Overall, the tests so far show that the grouping of variables into sub-pillars, pillars, and an overall index is statistically coherent, and that the GTCI has a balanced structure, whereby all six pillars are equally important in determining the variation in the GTCI scores.

## 2. Importance of the Variables in the GTCI Framework

The GTCI and its components are simple arithmetic averages of the underlying variables. Developers and users of composite indicators often consider that the weights assigned to the variables coincide with the variables' importance in the index. However, in

practice, the correlation structure of the variables and their different variances do not always allow the weights assigned to the variables to be considered equivalent to their importance.<sup>7</sup>

This section assesses the importance of all 68 variables at the various levels of aggregation in the GTCI structure. As a statistical measure of the importance of variables in an index we use the squared Pearson correlation coefficient (otherwise known as the *coefficient of determination*  $R^2$ ). The importance of the selected variables is taken to be equivalent to the contribution of those variables to the variation of the aggregate scores, be those sub-pillars, pillars, sub-indices, or the overall GTCI. The overarching consideration made by the GTCI development team was that all variables should be important at all levels of aggregation. The results of our analysis appear in Table 2. Examining the importance measures of the 68 variables, we see that almost all variables are important at the various levels of aggregation. For example, country variations in 1.1.1 Government effectiveness scores can capture 92% of the variance in the respective sub-pillar scores (Regulatory Landscape), and 90% of the variance in the respective pillar (Enable), Input sub-index, and overall GTCI scores. Similarly, country variations in 2.1.1 Foreign direct investment (FDI) and technology transfer scores can capture 64%, 60%, 62%, and 59% of the variance in the External Openness, Attract, Input, and GTCI scores, respectively.

Five variables in the 2019 data set have a very low impact on the GTCI variance (less than 10%): 1.3.1 Ease of hiring, 1.3.2 Ease of redundancy, 2.2.5 Gender earnings gap, 3.1.3 Tertiary education expenditure, and 3.2.2 Prevalence of training in firms. Therefore these variables are not found to be important at the overall index level in the 2019 framework.<sup>8</sup> In fact, 1.3.1 Ease of hiring has consistently been a low-impact variable in the overall

Table 2

**Importance measures for the variables at the various levels of the GTCI structure**

| PILLAR                             | SUB-PILLAR                         | VARIABLE NAME                                | SUB-PILLAR | PILLAR | INPUT/OUTPUT | GTCI INDEX |
|------------------------------------|------------------------------------|----------------------------------------------|------------|--------|--------------|------------|
| 1. ENABLE                          | 1.1 Regulatory Landscape           | Government effectiveness                     | 92%        | 90%    | 90%          | 90%        |
|                                    |                                    | Business-government relations                | 43%        | 41%    | 31%          | 26%        |
|                                    |                                    | Political stability                          | 71%        | 52%    | 53%          | 48%        |
|                                    |                                    | Regulatory quality                           | 89%        | 84%    | 84%          | 84%        |
|                                    |                                    | Corruption                                   | 90%        | 83%    | 85%          | 83%        |
|                                    | 1.2 Market Landscape               | Competition intensity                        | 59%        | 46%    | 40%          | 39%        |
|                                    |                                    | Ease of doing business                       | 66%        | 66%    | 62%          | 63%        |
|                                    |                                    | Cluster development                          | 68%        | 60%    | 57%          | 55%        |
|                                    |                                    | R&D expenditure                              | 68%        | 54%    | 55%          | 58%        |
|                                    |                                    | ICT infrastructure                           | 70%        | 61%    | 70%          | 74%        |
|                                    |                                    | Technology utilisation                       | 85%        | 80%    | 81%          | 80%        |
|                                    | 1.3 Business and Labour Landscape  | Ease of hiring                               | 39%        | 18%    | 10%          | 8%         |
|                                    |                                    | Ease of redundancy                           | 30%        | 15%    | 10%          | 9%         |
|                                    |                                    | Active labour market policies                | 70%        | 76%    | 74%          | 74%        |
|                                    |                                    | Labour-employer cooperation                  | 70%        | 65%    | 60%          | 56%        |
|                                    |                                    | Professional management                      | 66%        | 75%    | 76%          | 73%        |
| 2. ATTRACT                         | 2.1 External Openness              | Relationship of pay to productivity          | 78%        | 70%    | 61%          | 60%        |
|                                    |                                    | FDI and technology transfer                  | 64%        | 60%    | 62%          | 59%        |
|                                    |                                    | Prevalence of foreign ownership              | 57%        | 53%    | 43%          | 39%        |
|                                    |                                    | Migrant stock                                | 52%        | 43%    | 32%          | 31%        |
|                                    |                                    | International students                       | 71%        | 58%    | 44%          | 42%        |
|                                    |                                    | Brain gain                                   | 69%        | 64%    | 46%          | 40%        |
|                                    | 2.2 Internal Openness              | Tolerance of minorities                      | 60%        | 45%    | 41%          | 37%        |
|                                    |                                    | Tolerance of immigrants                      | 31%        | 28%    | 15%          | 12%        |
|                                    |                                    | Social mobility                              | 63%        | 75%    | 73%          | 69%        |
|                                    |                                    | Female graduates                             | 20%        | 12%    | 15%          | 17%        |
|                                    |                                    | Gender earnings gap                          | 16%        | 4%     | 2%           | 1%         |
| 3. GROW                            | 3.1 Formal Education               | Leadership opportunities for women           | 51%        | 46%    | 37%          | 35%        |
|                                    |                                    | Vocational enrolment                         | 51%        | 30%    | 21%          | 23%        |
|                                    |                                    | Tertiary enrolment                           | 71%        | 44%    | 39%          | 44%        |
|                                    |                                    | Tertiary education expenditure               | 21%        | 14%    | 8%           | 8%         |
|                                    |                                    | Reading, maths, and science                  | 70%        | 52%    | 50%          | 53%        |
|                                    | 3.2 Lifelong Learning              | University ranking                           | 62%        | 64%    | 51%          | 54%        |
|                                    |                                    | Quality of management schools                | 78%        | 70%    | 62%          | 62%        |
|                                    |                                    | Prevalence of training in firms              | 42%        | 23%    | 7%           | 6%         |
|                                    | 3.3 Access to Growth Opportunities | Employee development                         | 80%        | 75%    | 78%          | 76%        |
|                                    |                                    | Delegation of authority                      | 83%        | 73%    | 73%          | 70%        |
|                                    |                                    | Personal rights                              | 50%        | 46%    | 42%          | 42%        |
|                                    |                                    | Use of virtual social networks               | 60%        | 48%    | 54%          | 54%        |
|                                    |                                    | Use of virtual professional networks         | 72%        | 68%    | 68%          | 68%        |
| 4. RETAIN                          | 4.1 Sustainability                 | Collaboration within organisations           | 78%        | 67%    | 66%          | 66%        |
|                                    |                                    | Collaboration across organisations           | 67%        | 60%    | 59%          | 58%        |
|                                    |                                    | Pension system                               | 65%        | 79%    | 58%          | 63%        |
|                                    | 4.2 Lifestyle                      | Social protection                            | 86%        | 72%    | 79%          | 74%        |
|                                    |                                    | Brain retention                              | 57%        | 34%    | 56%          | 50%        |
|                                    |                                    | Environmental performance                    | 81%        | 78%    | 65%          | 68%        |
|                                    |                                    | Personal safety                              | 63%        | 65%    | 58%          | 58%        |
|                                    |                                    | Physician density                            | 80%        | 65%    | 43%          | 47%        |
| 5. VOCATIONAL AND TECHNICAL SKILLS | 5.1 Mid-level Skills               | Sanitation                                   | 76%        | 60%    | 40%          | 44%        |
|                                    |                                    | Workforce with secondary education           | 73%        | 30%    | 27%          | 18%        |
|                                    |                                    | Population with secondary education          | 74%        | 33%    | 30%          | 20%        |
|                                    |                                    | Technicians and associate professionals      | 79%        | 71%    | 72%          | 64%        |
|                                    | 5.2 Employability                  | Labour productivity per employee             | 49%        | 64%    | 63%          | 68%        |
|                                    |                                    | Ease of finding skilled employees            | 84%        | 49%    | 44%          | 46%        |
|                                    |                                    | Relevance of education system to the economy | 87%        | 59%    | 54%          | 59%        |
|                                    |                                    | Skills matching with secondary education     | 87%        | 74%    | 68%          | 71%        |
| 6. GLOBAL KNOWLEDGE SKILLS         | 6.1 Higher-Level Skills            | Skills matching with tertiary education      | 90%        | 59%    | 52%          | 60%        |
|                                    |                                    | Workforce with tertiary education            | 84%        | 75%    | 68%          | 55%        |
|                                    |                                    | Population with tertiary education           | 81%        | 68%    | 62%          | 52%        |
|                                    |                                    | Professionals                                | 80%        | 78%    | 75%          | 68%        |
|                                    |                                    | Researchers                                  | 79%        | 80%    | 78%          | 73%        |
|                                    |                                    | Senior officials and managers                | 52%        | 47%    | 41%          | 35%        |
|                                    | 6.2 Talent impact                  | Availability of scientists and engineers     | 55%        | 51%    | 58%          | 55%        |
|                                    |                                    | Innovation output                            | 80%        | 79%    | 74%          | 71%        |
|                                    |                                    | High-value exports                           | 38%        | 32%    | 26%          | 24%        |
|                                    |                                    | New product entrepreneurial activity         | 40%        | 29%    | 26%          | 24%        |
|                                    |                                    | Scientific journal articles                  | 45%        | 34%    | 26%          | 26%        |
|                                    |                                    |                                              | 77%        | 79%    | 78%          | 77%        |

Source: European Commission Joint Research Centre (2019).

Note: The values are the squared Pearson correlation coefficients, expressed as percentages ( $n = 125$  countries). Cells with coefficients less than 10% are in a lighter shade.

Table 3

**Distribution of differences between pillar and GTCI rankings**

| Shifts with respect to the overall GTCI rank  | GTCI INPUT SUB-INDEX |             |             |             | GTCI OUTPUT SUB-INDEX           |                         |
|-----------------------------------------------|----------------------|-------------|-------------|-------------|---------------------------------|-------------------------|
|                                               | Enable               | Attract     | Grow        | Retain      | Vocational and Technical Skills | Global Knowledge Skills |
| More than 30 positions                        | 5%                   | 21%         | 8%          | 2%          | 2%                              | 7%                      |
| 20 to 29 positions                            | 6%                   | 17%         | 9%          | 9%          | 8%                              | 14%                     |
| 10 to 19 positions                            | 22%                  | 18%         | 17%         | 21%         | 35%                             | 21%                     |
| <b>More than 10 positions*</b>                | <b>33%</b>           | <b>57%</b>  | <b>34%</b>  | <b>33%</b>  | <b>45%</b>                      | <b>42%</b>              |
| 5 to 9 positions                              | 27%                  | 21%         | 22%         | 27%         | 23%                             | 31%                     |
| Less than 5 positions                         | 33%                  | 20%         | 38%         | 34%         | 25%                             | 26%                     |
| 0 positions                                   | 7%                   | 2%          | 6%          | 7%          | 7%                              | 1%                      |
| <b>Total</b>                                  | <b>100%</b>          | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b>                     | <b>100%</b>             |
| Pearson correlation coefficient with the GTCI | 0.96                 | 0.86        | 0.95        | 0.95        | 0.95                            | 0.92                    |

Source: European Commission Joint Research Centre (2019).

Note: \* This row is the sum of the prior three rows.

Table 4

**Distribution of differences between the GTCI 2019 and other international rankings**

| Shifts with respect to the GTCI 2018 | 2018 Global Innovation Index (Cornell, INSEAD, and WIPO) | 2017–2018 Global Human Capital Index (World Economic Forum) | 2017–2018 Global Competitiveness Index (World Economic Forum) |
|--------------------------------------|----------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|
| More than 30 positions               | 6%                                                       | 5%                                                          | 8%                                                            |
| 20 to 29 positions                   | 15%                                                      | 21%                                                         | 8%                                                            |
| 10 to 19 positions                   | 23%                                                      | 23%                                                         | 22%                                                           |
| <b>More than 10 positions*</b>       | <b>44%</b>                                               | <b>49%</b>                                                  | <b>38%</b>                                                    |
| 5 to 9 positions                     | 25%                                                      | 27%                                                         | 23%                                                           |
| Less than 5 positions                | 25%                                                      | 21%                                                         | 36%                                                           |
| 0 positions                          | 5%                                                       | 3%                                                          | 3%                                                            |
| <b>Total</b>                         | <b>100%</b>                                              | <b>100%</b>                                                 | <b>100%</b>                                                   |
| Countries in common with the GTCI    | 115                                                      | 115                                                         | 124                                                           |

Source: European Commission Joint Research Centre (2019).

Notes: The comparison between the GTCI and the other indices was based on the common set of countries. \*This row is the sum of the prior three rows.

index and has been flagged in the JRC's audits since 2014, and the variables 2.2.5 Gender earnings gap and 3.1.3 Tertiary education expenditure were already flagged as not statistically important in last year's report. That said, and given that these five variables are influential at the first and second aggregation levels (sub-pillars and pillars), their inclusion in the GTCI framework is corroborated by the analysis. The JRC recommendation to the GTCI development team is to carefully monitor how these five variables behave in the coming releases of the index and eventually to fine-tune the framework in this respect.

### 3. Added Value of the GTCI

A very high statistical reliability among the main components of an index can be the result of redundancy of information. This is not the case in the GTCI. In fact, the overall GTCI 2019 ranking differs from any of the six pillar rankings by 10 positions or more in at least one-third of the 125 countries included in the 2019 edition, peaking at 57% of the countries in the case of the Attract pillar (see Table 3). This is a desired outcome because it evidences

the added value of the GTCI ranking, which helps to highlight other components of human capital and talent competitiveness that do not emerge directly by looking into the six pillars separately. At the same time, this result also points towards the value of duly taking into account the individual pillars, sub-pillars, and variables on their own merit. By doing so, country-specific strengths and bottlenecks in human capital and talent competitiveness can be identified and serve as an input for evidence-based policymaking.

In addition, we compared the GTCI 2019 with both the World Economic Forum's 2017–2018 Global Competitiveness Index and the Human Capital Index, and with Cornell University, INSEAD, and WIPO's 2018 Global Innovation Index. After having extracted data from both projects' websites, we find that the rank correlation between GTCI 2019 with all three indices is substantially high (correlation  $\approx 0.9$ ), which suggests that the GTCI framework has many aspects in common with the frameworks on global innovation, global competitiveness, and human capital. Looking at the shifts in rankings (see Table 4), we nevertheless



find that 38%, 49%, and 44% of the countries included in the GTCI 2019 that feature in the other three indices differ in ranking by more than 10 positions when comparing the GTCI 2019 with, respectively, the 2017–2018 Global Competitiveness Index, the 2017 Global Human Capital Index, and the 2018 Global Innovation Index. This indicates that the GTCI 2019 offers additional insights into nations' human capital and competitiveness compared to the three other international indices.

#### Step 4: Qualitative Review

Finally, the GTCI results, including overall country classifications and relative performances in terms of the Input and Output sub-indices, were evaluated by the development team and external experts to verify that the overall results are, to a great extent, consistent with current evidence, existing research, or prevailing theory.

Notwithstanding these statistical tests and the positive outcomes regarding the statistical soundness of the GTCI, it is important to mention that the GTCI has to remain open to future improvements as better data, more comprehensive surveys and assessments, and new relevant research studies become available.

#### IMPACT OF MODELLING ASSUMPTIONS ON THE GTCI RESULTS

Every country score on the overall GTCI and its two sub-indices depends on modelling choices: the six-pillar structure, the selected variables, the imputation or not of missing data, and the weights and aggregation method, among other elements. These choices are based on expert opinion (e.g., selection of variables) or common practice (e.g., min-max normalisation in the [0,100] range) and driven by statistical analysis (e.g., treatment of outliers) or simplicity (e.g., no imputation of missing data). The robustness analysis is aimed at assessing the simultaneous and joint impact of these modelling choices on the rankings. The data are assumed to be error-free since potential outliers and any errors and typos were corrected during the computation phase.

As suggested in the relevant literature on composite indicators,<sup>9</sup> the robustness assessment of the GTCI was based on a combination of a Monte Carlo experiment and a multi-modelling approach that dealt with three issues: pillar weights, missing data, and the aggregation formula. In general, the uncertainty analysis aims to respond to some extent to possible criticisms that the country scores associated with aggregate measures are generally not calculated under conditions of certainty, even though they are frequently presented as such.

While the term *multi-modelling* refers to testing alternative assumptions—that is, alternative aggregation methods and missing data estimation methods—the Monte Carlo simulation explored the issue of weighting and comprised 1,000 runs, each corresponding to a different set of weights for the six pillars, randomly sampled from uniform continuous distributions centred in the reference values. The choice of the range for the weights' variation was driven by two opposite needs: to ensure a wide enough interval to have meaningful robustness checks, and to respect the rationale of the GTCI that places equal importance on all six pillars. Given these considerations, the limit values of

uncertainty intervals for the pillar weights are 15% to 35% for the four Input pillars for the calculation of the Input sub-index, and 40% to 60% for the two Output pillars for the calculation of the Output sub-index (see Table 5). For the calculation of the GTCI, the limit values of uncertainty intervals for all six pillar weights are 12% to 20%. In all simulations, sampled weights are rescaled so that they always sum to 1.

The GTCI development team, for transparency and replicability, opted not to estimate the missing data (only 4.8% of data were missing in the data set of 125 countries for all 68 variables). The 'no imputation' choice, which is common in similar contexts, might encourage countries not to report low data values. The consequence of the 'no imputation' choice in an arithmetic average is that it is equivalent to replacing an indicator's missing value for a given country with the respective sub-pillar score. Hence the available data (indicators) in the incomplete pillar may dominate, sometimes biasing the ranks up or down. To test the impact of this assumption, the JRC also estimated missing data using the Expectation Maximisation (EM) algorithm.<sup>10</sup>

Regarding the aggregation formula, decision-theory practitioners have challenged the use of simple arithmetic averages because of their fully compensatory nature, in which a comparatively high advantage for a few variables can compensate for a comparative disadvantage for many variables.<sup>11</sup> Despite the arithmetic averaging formula receiving statistical support for the development of the GTCI, as discussed in the previous section, the geometric average was considered as a possible alternative. This is a partially compensatory approach that rewards countries with similar performance in all pillars; it motivates those countries with uneven performance to improve in those pillars in which they perform poorly, and not just in any pillar.

Four models were tested based on the combination of no imputation versus EM imputation, and arithmetic versus geometric average, combined with 1,000 simulations per model (random weights versus fixed weights), for a total of 4,000 simulations for the GTCI and each of the two sub-indices (see Table 5 for a summary of the uncertainties considered in the GTCI 2019).

#### Uncertainty Analysis Results

The main results of the robustness analysis are shown in Figures 1a–1c, with median ranks and 90% confidence intervals computed across the 4,000 Monte Carlo simulations for the GTCI and the two sub-indices. Countries are ordered from best to worst according to their reference rank (black line), the dot being the simulated median rank. Error bars represent, for each country, the 90% interval across all simulations. Table 6 reports the published rankings and the 90% confidence intervals that account for uncertainties in the missing data estimation, the pillar weights, and the aggregation formula. All published country ranks lay within the simulated intervals, and these are narrow enough for most countries (less than or equal to 10 positions) to allow for meaningful inferences to be drawn.

GTCI ranks are shown to be both representative of a plurality of scenarios and robust to changes in the imputation method, the pillar weights, and the aggregation formula. If one considers the median rank across the simulated scenarios as being



Table 5

**Uncertainty analysis for the GTCI 2019: Weights, missing data, and aggregation**

|                                                                   |                                 | REFERENCE                                                | ALTERNATIVE                                                             |
|-------------------------------------------------------------------|---------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|
| <b>I. Uncertainty in the treatment of missing values</b>          |                                 | <b>No estimation of missing data</b>                     | <b>Expectation Maximisation (EM)</b>                                    |
| <b>II. Uncertainty in the aggregation formula at pillar level</b> |                                 | <b>Arithmetic average</b>                                | <b>Geometric average</b>                                                |
| <b>III. Uncertainty in the weights</b>                            |                                 | Reference value for the weight<br>(within the sub-index) | Distribution assigned for robustness analysis<br>(within the sub-index) |
| GTCI sub-index                                                    | Pillar                          |                                                          |                                                                         |
| <b>Input</b>                                                      | Enable                          | 0.25                                                     | U[0.15,0.35]                                                            |
|                                                                   | Attract                         | 0.25                                                     | U[0.15,0.35]                                                            |
|                                                                   | Grow                            | 0.25                                                     | U[0.15,0.35]                                                            |
|                                                                   | Retain                          | 0.25                                                     | U[0.15,0.35]                                                            |
| <b>Output</b>                                                     | Vocational and Technical Skills | 0.50                                                     | U[0.40,0.60]                                                            |
|                                                                   | Global Knowledge Skills         | 0.50                                                     | U[0.40,0.60]                                                            |

Source: European Commission, Joint Research Centre (2019).

representative of these scenarios, then the fact that the GTCI rank is close to the median rank (differing by two positions or less) for 89% of the countries suggests that the GTCI is a suitable summary measure. Furthermore, the narrow confidence intervals for the majority of the countries' ranks (less than or equal to 10 positions for 95% of the countries) imply that the GTCI ranks are also, for the vast majority of the countries, robust to changes in the pillar weights, the imputation method, and the aggregation formula.

Results for the Input and Output sub-indices are also robust and representative of the plurality of scenarios considered. The Input rank is close to the median rank (less than or equal to two positions away) for 97% of the countries, and the rank intervals are less than or equal to 10 positions for 86% of the countries. Similarly, the Output rank is close to the median rank (less than or equal to two positions away) for 84% of the countries, and the rank intervals are less than or equal to 10 positions for 90% of the countries.

Overall, country ranks in the GTCI and its two sub-indices are fairly robust to changes in the pillar weights, the imputation method, and the aggregation formula for the majority of the countries considered. For full transparency and information, Table 6 reports the GTCI country ranks (and those of the sub-indices) together with the simulated intervals (90% of the 4,000 scenarios) in order to better appreciate the robustness of these ranks to the computation methodology.

### Sensitivity Analysis Results

Complementary to the uncertainty analysis, sensitivity analysis has been used to identify which of the modelling assumptions have the highest impact on certain country ranks. Figure 2 plots the GTCI and both sub-index rankings versus one-at-a-time changes of either the EM imputation method or the geometric aggregation formula (assuming equal weights for the six pillars as in the GTCI).

The most influential methodological assumption turns out to be the choice of geometric aggregation versus arithmetic aggregation (given that a lower rank correlation indicates greater

sensitivity). This choice has the largest impact on differences in ranking for the GTCI 2019 and the Output sub-index; it has less impact on differences for the Input sub-index. For example, in the most extreme case, Gambia falls by 15 positions in the Output ranking when geometric aggregation is applied, yet the country increases by four positions if missing data are imputed. Note, however, that these assumptions concern methodological choices only and might overall be less influential than choices related to the background assumptions in the conceptual framework.<sup>12</sup>

Overall, given the fairly modest ranges of uncertainty in the final rankings, the JRC recommendation is not to alter the GTCI methodology at this point, but to consider country ranks in the GTCI 2019 and in the Input and Output sub-indices within the 90% confidence intervals, as reported in Table 6, in order to better appreciate to what degree a country's rank depends on the modelling choices. It is reassuring that, for an overwhelming majority of the countries included in the GTCI, their ranks in the overall GTCI 2019 and the Input and Output sub-indices are the result of the underlying data and not of modelling choices.<sup>13</sup>

### CONCLUSIONS

The European Institute of Business Administration INSEAD released the sixth edition of the Global Talent Competitiveness Index (GTCI) with a view to attracting attention to the growing challenges of talent attraction, development, and retention faced by countries worldwide. The JRC statistical audit has investigated the workings of the GTCI framework to assess the statistical properties of the data and the methodology used in the index construction. The JRC analysis suggests that the conceptualised multi-level structure of the GTCI 2019 is statistically coherent and balanced (i.e., not dominated by any pillar or sub-pillar; all variables contribute to the variation of the respective Input/Output sub-indices and to the overall GTCI). Furthermore, the analysis has offered statistical justification for the use of equal weights and arithmetic averaging at the various levels of aggregation, showing that the GTCI is statistically reliable in its current form as the simple average of the six pillars (as measured by a

Figure 1a

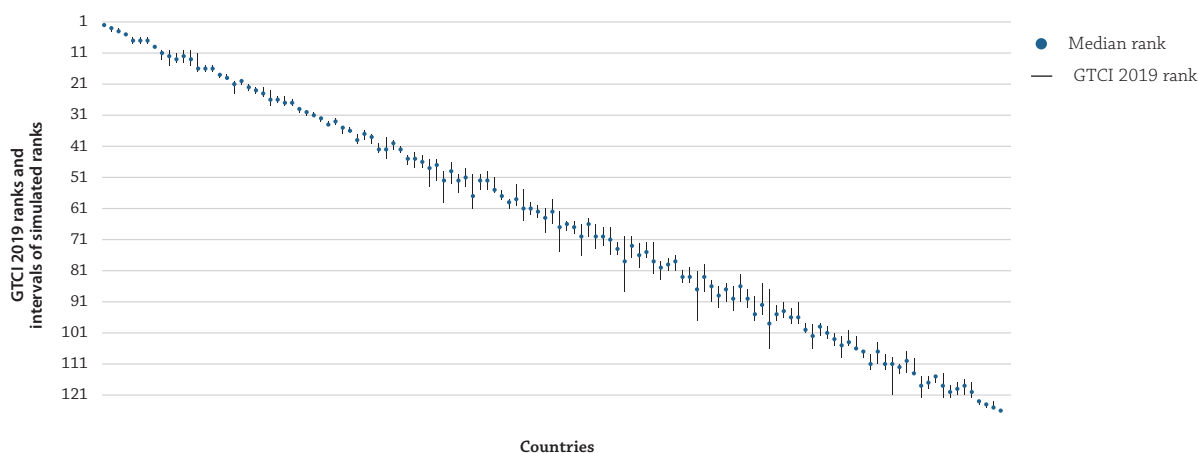
**Robustness analysis (GTCI rank vs. median rank, 90% confidence intervals)**

Figure 1b

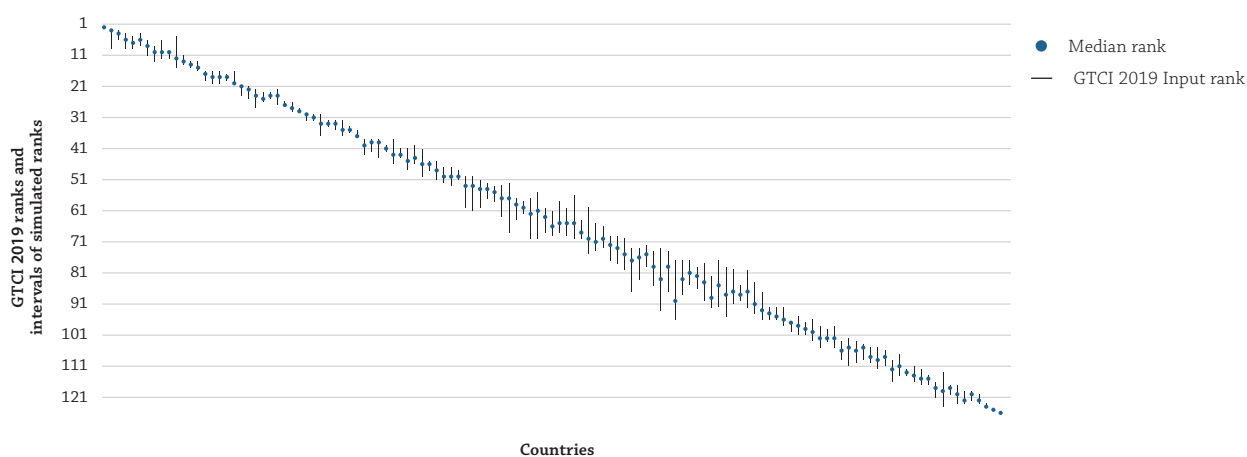
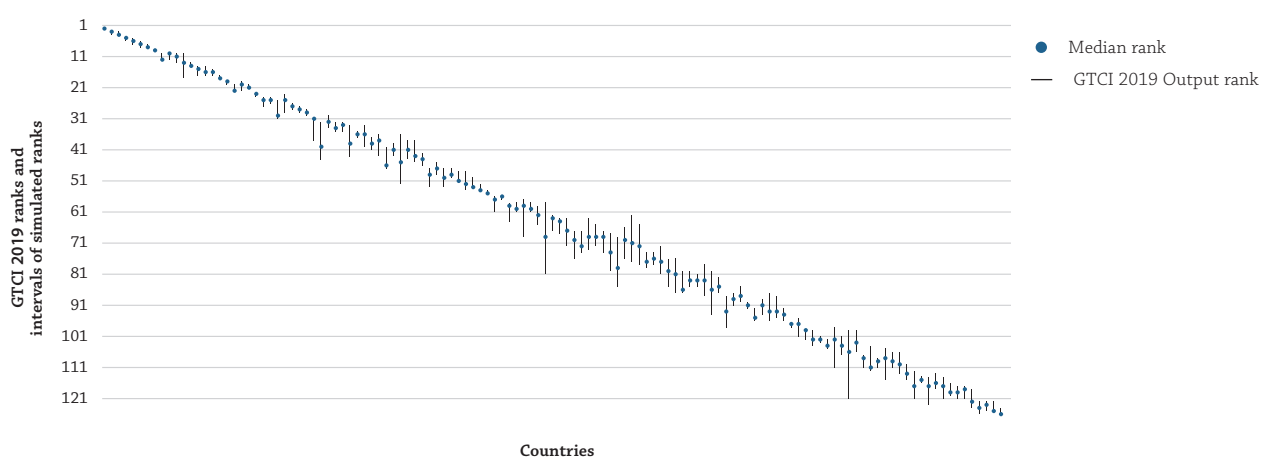
**Robustness analysis (Input rank vs. median rank, 90% confidence intervals)**

Figure 1c

**Robustness analysis (Output rank vs. median rank, 90% confidence intervals)**

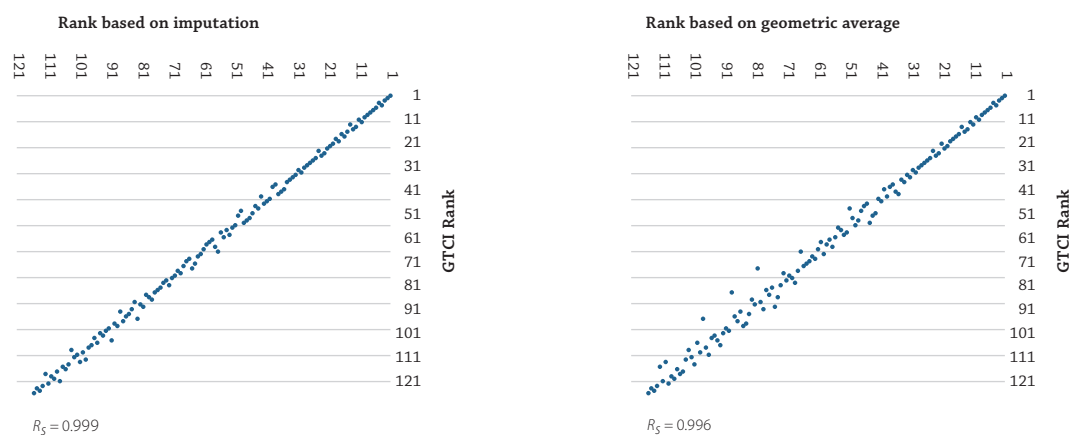
Source: European Commission Joint Research Centre (2019).

Notes: The Spearman rank correlation between the median rank and the GTCI 2019 rank is 0.999 ( $n = 125$ ); between the median rank and the GTCI 2019 Output rank it is 0.998; and between the median rank and the GTCI 2019 Input rank it is 0.999. Median ranks and intervals are calculated over 4,000 simulated scenarios combining random weights, imputation versus no imputation of missing values, and geometric versus arithmetic average at the pillar level.

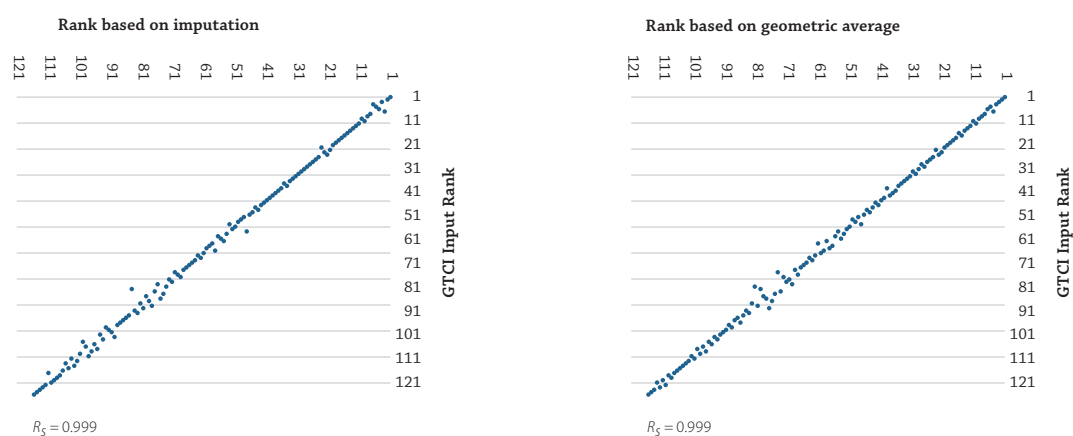
Figure 2

**Sensitivity analysis: Impact of modelling choices**

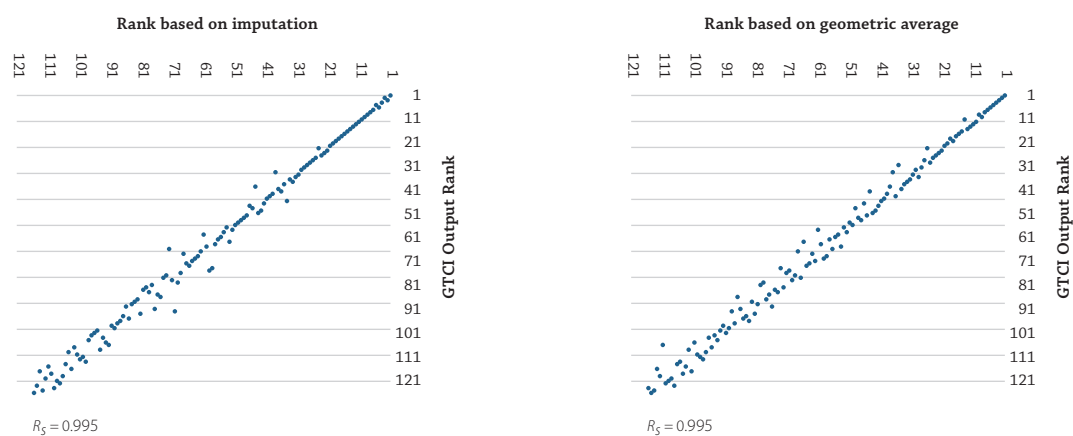
Global Talent Competitiveness Index 2019



GTGI Input Sub-Index 2019



GTGI Output Sub-Index 2019



Source: European Commission Joint Research Centre (2019).

Note:  $R_s$  represents the Spearman rank correlation coefficient ( $n = 125$ ).

Table 6

**Country ranks and 90% confidence intervals for the GTCI 2017 and its Input/Output sub-indices**

| COUNTRY                  | GTCI 2018 |          | INPUT SUB-INDEX |          | OUTPUT SUB-INDEX |          |
|--------------------------|-----------|----------|-----------------|----------|------------------|----------|
|                          | RANK      | INTERVAL | RANK            | INTERVAL | RANK             | INTERVAL |
| Switzerland              | 1         | [1, 1]   | 1               | [1, 1]   | 1                | [1, 1]   |
| Singapore                | 2         | [2, 3]   | 2               | [2, 8]   | 3                | [2, 3]   |
| United States of America | 3         | [2, 3]   | 4               | [3, 8]   | 2                | [2, 3]   |
| Norway                   | 4         | [4, 4]   | 3               | [2, 5]   | 6                | [5, 7]   |
| Finland                  | 6         | [5, 7]   | 8               | [7, 12]  | 4                | [4, 5]   |
| Sweden                   | 7         | [5, 7]   | 6               | [3, 7]   | 8                | [8, 8]   |
| Denmark                  | 5         | [5, 7]   | 5               | [4, 8]   | 7                | [6, 7]   |
| Netherlands              | 8         | [8, 8]   | 7               | [5, 10]  | 9                | [9, 11]  |
| United Kingdom           | 9         | [9, 12]  | 10              | [9, 11]  | 15               | [13, 16] |
| New Zealand              | 11        | [10, 13] | 9               | [5, 11]  | 17               | [16, 17] |
| Australia                | 12        | [9, 13]  | 12              | [10, 13] | 13               | [12, 13] |
| Luxembourg               | 10        | [9, 14]  | 11              | [4, 14]  | 16               | [14, 16] |
| Iceland                  | 13        | [9, 14]  | 18              | [16, 18] | 5                | [4, 6]   |
| Germany                  | 14        | [10, 16] | 14              | [12, 15] | 12               | [9, 17]  |
| Canada                   | 15        | [14, 16] | 13              | [12, 14] | 14               | [13, 16] |
| Ireland                  | 16        | [14, 16] | 15              | [15, 18] | 10               | [9, 11]  |
| Belgium                  | 17        | [17, 18] | 17              | [15, 19] | 18               | [18, 19] |
| Austria                  | 18        | [17, 18] | 16              | [15, 19] | 19               | [19, 21] |
| United Arab Emirates     | 19        | [19, 23] | 19              | [15, 19] | 25               | [24, 30] |
| Israel                   | 20        | [19, 20] | 25              | [21, 26] | 11               | [9, 12]  |
| Japan                    | 22        | [21, 23] | 21              | [20, 24] | 22               | [22, 23] |
| France                   | 21        | [20, 22] | 22              | [21, 27] | 21               | [19, 20] |
| Estonia                  | 23        | [21, 24] | 26              | [25, 26] | 20               | [18, 21] |
| Qatar                    | 24        | [22, 27] | 20              | [20, 23] | 30               | [30, 37] |
| Czech Republic           | 25        | [24, 26] | 24              | [22, 24] | 28               | [26, 28] |
| Malta                    | 26        | [24, 27] | 23              | [22, 25] | 29               | [27, 29] |
| Malaysia                 | 27        | [25, 27] | 27              | [25, 28] | 23               | [23, 26] |
| Portugal                 | 28        | [28, 29] | 28              | [27, 28] | 32               | [29, 33] |
| Korea, Rep.              | 30        | [29, 30] | 34              | [31, 36] | 26               | [22, 28] |
| Slovenia                 | 29        | [29, 30] | 33              | [31, 34] | 27               | [25, 27] |
| Spain                    | 31        | [31, 32] | 29              | [29, 31] | 39               | [35, 42] |
| Chile                    | 32        | [32, 33] | 32              | [31, 33] | 36               | [34, 36] |
| Cyprus                   | 33        | [31, 33] | 38              | [37, 41] | 24               | [23, 25] |
| Costa Rica               | 34        | [34, 36] | 30              | [29, 31] | 48               | [46, 52] |
| Lithuania                | 35        | [34, 35] | 35              | [33, 35] | 43               | [37, 43] |
| Italy                    | 38        | [36, 39] | 41              | [37, 45] | 33               | [31, 34] |
| Latvia                   | 37        | [35, 38] | 40              | [39, 41] | 34               | [31, 34] |
| Brunei Darussalam        | 36        | [36, 39] | 39              | [37, 43] | 31               | [31, 43] |
| Saudi Arabia             | 39        | [39, 42] | 37              | [37, 42] | 46               | [46, 52] |
| Bahrain                  | 40        | [37, 44] | 31              | [29, 36] | 59               | [56, 68] |
| Slovakia                 | 41        | [38, 41] | 42              | [40, 43] | 41               | [38, 42] |
| Poland                   | 42        | [40, 42] | 46              | [44, 47] | 38               | [36, 40] |
| China                    | 45        | [43, 47] | 45              | [40, 49] | 53               | [51, 53] |
| Azerbaijan               | 43        | [43, 46] | 48              | [46, 51] | 42               | [35, 51] |
| Greece                   | 44        | [42, 47] | 49              | [46, 52] | 45               | [41, 45] |
| Mauritius                | 47        | [44, 51] | 44              | [39, 45] | 57               | [57, 63] |
| Uruguay                  | 46        | [44, 53] | 36              | [34, 36] | 83               | [80, 84] |
| Oman                     | 48        | [48, 58] | 43              | [40, 47] | 74               | [61, 76] |
| Panama                   | 52        | [49, 60] | 47              | [44, 50] | 67               | [66, 73] |
| Russian Federation       | 49        | [45, 52] | 61              | [54, 69] | 37               | [32, 39] |
| Montenegro               | 51        | [47, 53] | 59              | [57, 61] | 40               | [39, 46] |
| Trinidad and Tobago      | 50        | [49, 55] | 50              | [47, 50] | 55               | [55, 60] |
| Hungary                  | 53        | [49, 54] | 56              | [52, 62] | 50               | [47, 50] |
| Bulgaria                 | 54        | [48, 54] | 54              | [51, 56] | 52               | [49, 52] |
| Croatia                  | 55        | [50, 55] | 60              | [56, 69] | 47               | [44, 48] |
| Jordan                   | 57        | [57, 60] | 55              | [52, 57] | 60               | [57, 60] |
| Kazakhstan               | 56        | [54, 57] | 58              | [56, 63] | 54               | [53, 54] |
| Lebanon                  | 59        | [54, 64] | 81              | [76, 87] | 35               | [32, 42] |
| Philippines              | 58        | [52, 59] | 66              | [55, 69] | 51               | [47, 53] |
| Argentina                | 60        | [58, 62] | 53              | [50, 59] | 68               | [62, 72] |
| Armenia                  | 61        | [59, 63] | 75              | [72, 82] | 49               | [46, 49] |
| Botswana                 | 62        | [60, 68] | 52              | [49, 60] | 80               | [75, 86] |
| Colombia                 | 65        | [64, 67] | 65              | [59, 68] | 65               | [62, 71] |

Table 6 (continued)

**Country ranks and 90% confidence intervals for the GTCI 2018 and its Input/Output sub-indices**

| COUNTRY                    | GTCI 2018 |            | INPUT SUB-INDEX |            | OUTPUT SUB-INDEX |            |
|----------------------------|-----------|------------|-----------------|------------|------------------|------------|
|                            | RANK      | INTERVAL   | RANK            | INTERVAL   | RANK             | INTERVAL   |
| Ukraine                    | 63        | [57, 65]   | 84              | [77, 89]   | 44               | [37, 44]   |
| Indonesia                  | 67        | [65, 75]   | 64              | [57, 67]   | 72               | [68, 84]   |
| Kuwait                     | 64        | [61, 74]   | 57              | [51, 67]   | 82               | [79, 84]   |
| Serbia                     | 68        | [63, 69]   | 76              | [71, 78]   | 56               | [55, 56]   |
| Thailand                   | 66        | [64, 68]   | 63              | [60, 68]   | 73               | [65, 75]   |
| Turkey                     | 74        | [69, 76]   | 72              | [68, 77]   | 75               | [64, 77]   |
| Romania                    | 69        | [65, 73]   | 71              | [68, 76]   | 61               | [58, 64]   |
| South Africa               | 71        | [66, 75]   | 73              | [69, 79]   | 58               | [57, 60]   |
| Mexico                     | 70        | [66, 72]   | 70              | [65, 72]   | 70               | [66, 73]   |
| Rwanda                     | 73        | [69, 87]   | 51              | [49, 59]   | 100              | [100, 102] |
| Brazil                     | 72        | [71, 75]   | 62              | [59, 67]   | 86               | [81, 86]   |
| Albania                    | 75        | [71, 79]   | 67              | [63, 69]   | 85               | [79, 93]   |
| Georgia                    | 76        | [71, 76]   | 74              | [72, 86]   | 64               | [62, 67]   |
| India                      | 80        | [75, 80]   | 79              | [73, 86]   | 77               | [73, 77]   |
| Peru                       | 79        | [76, 80]   | 83              | [78, 85]   | 66               | [66, 75]   |
| Mongolia                   | 77        | [71, 81]   | 82              | [76, 84]   | 62               | [57, 80]   |
| Namibia                    | 78        | [77, 83]   | 68              | [59, 74]   | 94               | [87, 94]   |
| Tajikistan                 | 81        | [80, 84]   | 91              | [83, 93]   | 71               | [67, 79]   |
| Sri Lanka                  | 82        | [79, 84]   | 88              | [79, 90]   | 79               | [75, 84]   |
| Bhutan                     | 83        | [80, 96]   | 69              | [64, 73]   | 102              | [97, 110]  |
| Guatemala                  | 88        | [85, 93]   | 77              | [73, 84]   | 96               | [96, 97]   |
| Tunisia                    | 84        | [78, 87]   | 95              | [91, 97]   | 63               | [61, 66]   |
| Kenya                      | 85        | [83, 90]   | 87              | [78, 94]   | 89               | [84, 89]   |
| Dominican Republic         | 90        | [86, 92]   | 85              | [81, 91]   | 90               | [89, 91]   |
| Ecuador                    | 87        | [84, 90]   | 90              | [79, 91]   | 88               | [86, 90]   |
| Moldova, Rep.              | 89        | [81, 90]   | 93              | [91, 95]   | 78               | [71, 80]   |
| Viet Nam                   | 92        | [84, 94]   | 89              | [84, 89]   | 93               | [86, 95]   |
| Lao PDR                    | 91        | [88, 96]   | 80              | [76, 95]   | 97               | [94, 100]  |
| Bosnia and Herzegovina     | 86        | [85, 92]   | 92              | [86, 95]   | 81               | [79, 86]   |
| Ghana                      | 94        | [91, 96]   | 86              | [76, 91]   | 99               | [98, 103]  |
| Gambia                     | 93        | [86, 105]  | 78              | [72, 92]   | 104              | [98, 120]  |
| Kyrgyzstan                 | 95        | [90, 95]   | 101             | [98, 102]  | 76               | [73, 78]   |
| Egypt                      | 96        | [92, 97]   | 100             | [97, 104]  | 84               | [77, 87]   |
| Iran, Islamic Rep.         | 97        | [90, 97]   | 104             | [101, 110] | 69               | [64, 71]   |
| Honduras                   | 98        | [97, 100]  | 99              | [95, 102]  | 98               | [98, 101]  |
| Morocco                    | 100       | [97, 101]  | 96              | [96, 99]   | 105              | [98, 105]  |
| Paraguay                   | 101       | [98, 102]  | 98              | [96, 100]  | 103              | [100, 106] |
| Zambia                     | 104       | [99, 104]  | 102             | [97, 104]  | 101              | [101, 104] |
| Senegal                    | 102       | [100, 104] | 97              | [94, 100]  | 106              | [106, 110] |
| Nigeria                    | 99        | [97, 105]  | 108             | [104, 111] | 87               | [87, 97]   |
| Nicaragua                  | 103       | [101, 108] | 94              | [91, 95]   | 117              | [113, 120] |
| Algeria                    | 105       | [101, 105] | 111             | [106, 113] | 91               | [91, 95]   |
| El Salvador                | 106       | [106, 108] | 106             | [103, 108] | 112              | [109, 114] |
| Cambodia                   | 107       | [107, 112] | 103             | [102, 108] | 120              | [116, 120] |
| Venezuela, Bolivarian Rep. | 112       | [106, 113] | 117             | [112, 123] | 92               | [88, 93]   |
| Pakistan                   | 108       | [103, 110] | 114             | [111, 116] | 95               | [91, 95]   |
| Tanzania, United Rep.      | 111       | [110, 113] | 107             | [104, 109] | 119              | [116, 120] |
| Uganda                     | 109       | [107, 112] | 105             | [102, 109] | 118              | [115, 119] |
| Lesotho                    | 110       | [108, 120] | 109             | [105, 110] | 115              | [113, 122] |
| Cameroon                   | 113       | [108, 113] | 113             | [110, 115] | 107              | [103, 111] |
| Liberia                    | 114       | [114, 121] | 110             | [108, 115] | 123              | [121, 124] |
| Mali                       | 116       | [114, 116] | 115             | [113, 116] | 114              | [113, 115] |
| Malawi                     | 115       | [114, 118] | 112             | [111, 113] | 121              | [117, 123] |
| Ethiopia                   | 117       | [113, 121] | 116             | [115, 120] | 116              | [112, 117] |
| Bangladesh                 | 118       | [117, 121] | 118             | [116, 119] | 113              | [111, 120] |
| Nepal                      | 120       | [115, 120] | 121             | [118, 121] | 108              | [107, 110] |
| Madagascar                 | 119       | [116, 120] | 120             | [118, 122] | 110              | [105, 110] |
| Zimbabwe                   | 121       | [116, 121] | 122             | [119, 122] | 111              | [105, 112] |
| Mozambique                 | 122       | [122, 123] | 119             | [116, 122] | 125              | [123, 125] |
| Burundi                    | 123       | [123, 124] | 123             | [122, 123] | 122              | [121, 125] |
| Congo, Dem. Rep.           | 124       | [122, 124] | 124             | [124, 124] | 109              | [104, 114] |
| Yemen                      | 125       | [125, 125] | 125             | [125, 125] | 124              | [121, 124] |

Source: European Commission, Joint Research Centre (2018).

very high Cronbach's alpha value of 0.97, well above the recommended 0.70 threshold for a reliable aggregate).

Points that call for possible refinements of the GTCI framework were also identified. These refinements mainly concern five out of the 68 variables, namely 1.3.1 Ease of hiring, 1.3.2 Ease of redundancy, 2.2.5 Gender earnings gap, 3.1.3 Tertiary education expenditure, and 3.2.2 Prevalence of training in firms. Although conceptually enriching the GTCI framework, and in most cases the statistical impact of these variables reaches the second aggregation level (the GTCI pillars), their impact on the GTCI ranking is low and can explain only a small (negligible) amount of variation in the GTCI scores. It is recommended that the GTCI development team delve into the formulation of these five indicators and to carefully monitor how they behave in the coming releases of the index, and eventually to fine-tune the GTCI framework in this respect.

On the whole, the analysis of the correlations at the sub-pillar level reveals that the statistical structure of the GTCI is coherent with its conceptual framework, given that sub-pillars correlate strongly with their respective pillars. Furthermore, all pillars correlate strongly and fairly evenly with the GTCI itself, which indicates that the framework is well balanced.

The GTCI and both sub-index country ranks are relatively robust to methodological assumptions related to the estimation of missing data, weighting, and aggregation formula. It is reassuring that for a large majority of the countries included in the GTCI, the overall rank and those in the Input and Output sub-indices are the result of the underlying data and not of the modelling choices. Consequently, inferences can be drawn for most countries in the GTCI, although some caution may be needed for a few countries.<sup>14</sup> Note that perfect robustness would have been undesirable because this would have implied that the GTCI components are perfectly correlated and hence redundant, which is not the case for the GTCI 2019. In fact, one way in which the GTCI helps to highlight other components of human capital and talent competitiveness is by pinpointing the differences in rankings that emerge from a comparison between the GTCI and each of the six pillars: the GTCI ranking differs from any of the six pillar rankings by 10 positions or more for at least one-third (up to almost 60%) of the countries. This outcome both evidences the added value of the GTCI ranking and points to the importance of taking into account the individual pillars, sub-pillars, and variables on their own merit. By doing so, country-specific strengths and bottlenecks in human capital and talent competitiveness can be identified and serve as an input for evidence-based policymaking.

The auditing conducted herein has shown the potential of the Global Talent Competitiveness Index 2019, subject to some minor hints for future releases, for reliably identifying weaknesses and best practices and ultimately monitoring national performance in human capital and competitiveness issues around the world. Readers and policy analysts should hence go beyond the overall GTCI scores and ranks and duly take into account the individual indicators and pillars on their own merit. By doing so, country-specific strengths and challenges in attracting, developing, and retaining talent can be identified and serve as an input

for data-informed policy analysis. The Global Talent Competitiveness Index cannot possibly serve as the ultimate and definitive yardstick of monitoring progress and performance on talent and competitiveness. Instead, the GTCI best represents an ongoing attempt by INSEAD to contribute to policy discussions on the very many challenges that national systems face in a world that is increasingly dependent on talent, continuously adapting the GTCI framework to reflect improved and new data sources and the theoretical advances on how to leverage talent as a tool for competitiveness.

## ENDNOTES

- 1 The JRC analysis was based on the recommendations of the OECD & EC JRC (2008) *Handbook on Constructing Composite Indicators* and on more recent research from the JRC. The JRC auditing studies of composite indicators are available at <http://composite-indicators.jrc.ec.europa.eu/> (all audits were carried out upon request of the index developers).
- 2 OECD & EC JRC (2008).
- 3 Compared to last year, eight new countries were added in the GTCI 2019: Brunei Darussalam, Burundi, Cameroon, Democratic Republic of Congo, Liberia, Nigeria, Tajikistan, and Zambia, while two countries are not included this year: Bolivia and the Former Yugoslav Republic of Macedonia.
- 4 Groeneveld & Meeden (1984) set the criteria for absolute skewness above 1 and kurtosis above 3.5. The skewness criterion was relaxed herein to account for the small sample (125 countries).
- 5 Only in one of the 14 sub-pillars is there a second principal component with an eigenvalue slightly above the 1.0 threshold: 2.2 Internal Openness (eigenvalue of 1.07). However, this eigenvalue is not statistically higher than 1.0 according to the bootstrapping hypothesis testing. This suggests that relevant information is not lost when directly aggregating the variables into the Internal Openness sub-pillar.
- 6 See Nunnally (1978).
- 7 See Becker et al. (2017) and Paruolo et al. (2013) for discussions on why the weights assigned to the variables do not necessarily coincide with the variables' importance in an index.
- 8 If the five variables that were not found to be sufficiently influential at the index level—1.3.1 Ease of hiring, 1.3.2 Ease of redundancy, 2.2.5 Gender earnings gap, 3.1.3, Tertiary education expenditure, and 3.2.2 Prevalence of training in firms—were deleted from the GTCI framework, the differences with the current GTCI ranking would be three positions or less for about 85% of the countries.
- 9 Saisana et al. (2005), (2011); Saisana & Saltelli (2011); Saltelli et al. (2008); Vértessy (2016); Vértessy & Deiss (2016).
- 10 The Expectation-Maximization (EM) algorithm (Little & Rubin, 2002) is an iterative procedure that finds the maximum likelihood estimates of the parameter vector by repeating two steps: (1) The expectation E-step: Given a set of parameter estimates, such as a mean vector and covariance matrix for a multivariate normal distribution, the E-step calculates the conditional expectation of the complete-data log likelihood given the observed data and the parameter estimates. (2) The maximization M-step: Given a complete-data log likelihood, the M-step finds the parameter estimates to maximize the complete-data log likelihood from the E-step. The two steps are iterated until the iterations converge.
- 11 Munda (2008).
- 12 Saltelli & Funtowicz (2014).
- 13 As already mentioned in the uncertainty analysis, about 89% of the simulated median ranks for the GTCI and 97% for the Input sub-index are less than two positions away from the reported 2019 rank—this percentage drops only to 84% in the Output sub-index.

- 14 Caution is needed when drawing inference on the relative standing of the following countries vis-a-vis other countries because of the very wide range of the confidence intervals, of almost 20 positions or more: Gambia's rank in the GTCI—with a rank confidence interval range of [86, 105], and in the Input and Output sub-indices with a confidence interval range of [72, 92] and [98, 120], respectively—and Mongolia's rank in the Output sub-index [57, 80].

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# **Special Section**

Cities and Regions



## Special Section

# Growing, Attracting, and Retaining Talents at City Level: Exploring the Local Dynamics around Entrepreneurial Talent

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This is the third year that the Global Talent Competitiveness Index (GTCI) includes a special section on cities. The rationale for this specific focus has remained the same since 2016, and stems from recognising that

innovative talent strategies are emerging from all parts of the world, and cities are playing an increasingly significant role in these strategies. Such strategies affect all aspects of talent competitiveness, including education, skilling and re-skilling, attracting external talents and fostering co-creation with local ones, as well as encouraging imported (or returning) talent to stay and contribute to long-term local objectives. When competing for talents, cities benefit from three key advantages over nation-states, namely (1) economic growth rates that can be significantly higher than the average national growth rate of their respective countries;

(2) specific advantages related to geography, culture, or quality of life (environment, culture, cost of living, safety); and (3) a higher degree of agility and branding abilities.<sup>1</sup>

This special section, and the model that underpins it, must still be regarded as a work in progress. The data available and the feedback received on previous editions continue to allow improvements both in terms of methodology and in terms of coverage. Those are described below and in relevant technical appendices.

The key signals emerging from this year's analysis are the following:

- Cities and regions continue to play an increasingly important (and sometimes leading) role in shaping talent policies and strategies, as well as in trying and adapting imaginative ways in which talent can be grown, attracted, and retained locally.

Figure 1

**The architecture of the Global Cities Talent Competitiveness Index**

- Entrepreneurial talent is critical to such local talent strategies, as smaller firms are generally more mobile. Municipal strategies developed around the creation of incubators and ‘innovation zones’ are directly targeting young entrepreneurs and start-ups.
- In this year’s ranking, European Nordic cities remain a strong component of the top talent performers (Copenhagen 2nd, Oslo 3rd, Helsinki 7th, Stockholm 11th); however, compared with previous years, we see a growth in (1) the proportion of large cities (New York 8th, Paris 9th, Seoul 10th), (2) the proportion of US cities (Washington, DC, 1st, Boston 6th, New York 8th, San Francisco 12th, Seattle 13th), and (3) the number of Chinese cities covered (12 this year, out of the 114 ranked)

Although a significant part of these results can be attributed to methodological improvements and better coverage, they can also be read as early signals announcing potential larger trends. The number of Chinese cities on the global talent radar screen is bound to continue to increase in the coming years, both for quantitative reasons (many are large entities, with a significant power to become talent magnets) and more qualitative ones (such as local efforts to develop smart cities all over China). Similarly, the improved rankings of both large metropolises and US cities is a result not only of a stabilisation of cities’ statistical definitions (which rely more on ‘metropolitan areas’ than on ‘cities’ in the strict sense), but also on the fact that cities are adopting more visible profiles around a number of issues such as sustainability and climate change.

### **BENCHMARKING CITIES’ TALENT COMPETITIVENESS: RATIONALE AND METHODOLOGY**

This year’s version of the GCTCI model has again undergone minor and major improvements in terms of its architecture, the variables/data used, and the city coverage.

### **Architecture of the GCTCI Model**

The five pillars of last year’s GCTCI model have been retained this year. The first four pillars therefore continue to follow the same logic as the input-related pillars of the GTCI model by analysing how cities (1) Enable, (2) Attract, (3) Grow, and (4) Retain talent. In their separate ways, each of these four dimensions shows different aspects of how talent is managed at the city level. In doing so, they can provide valuable insights into what sets some cities apart from others in the development and harnessing of talent. The fifth pillar—Be Global—aims to measure the degree of internationalisation of cities. Because it encompasses the development of global knowledge skills, global transport connectivity, and the city’s role in international relations, this last pillar can give a sense of the flows of talent to and from cities.

Final GCTCI scores have been calculated as the average of the corresponding five pillar scores of each city. The resulting GCTCI model is represented in Figure 1.

### **Data and Variables Used**

Using the same holistic definition of *talent* as the GTCI model, the GCTCI uses a significantly smaller number of variables (16) to assess the talent competitiveness of cities. This smaller number is the result of the ‘double threshold’ approach that is also used for the GTCI, whereby (1) a variable is included if it is available for at least half the number of cities included in the index, and (2) a city is included if it can be described by a sufficient number (50%) of variables in the model.

Of course, city-level data have been collected when possible. However, if city-level data have not been available, regional or national data have been used instead whenever these made sense as alternatives. Two general considerations have guided the data gathering process in order to arrive at coherent decisions about which data to use:

- **Data availability.** Some of the GCTCI’s variables are available only at national rather than sub-national levels. In some instances, this lack of availability was mitigated through the use of proxies.

Figure 2  
GCTCI variables



Note: IGO = intergovernmental organisation.

- **Data applicability.** Some GCTCI variables directly reflect trends and policies set by central governments (e.g., legal frameworks, labour laws). As such, they are of limited use when making direct comparisons of cities and regions on a global scale.

The main change at the level of variables in this year's GCTCI is the removal of variables 4.3 and 4.4 on monthly expenses and monthly rental, respectively. These two variables have been replaced by a new one that tracks the average monthly salary in comparison with the average monthly rental cost. The resulting ratio is intended to capture the affordability of a city.

Additional improvements have been brought to the GCTCI model through the identification of new sources, as described in Annex 1 to this section.

The resulting structure of the GCTCI model at the variable level is shown in Figure 2.

Typically, the following data sources have been used in populating the GCTCI:<sup>2</sup>

- European Union (EU)-wide statistical engines such as Eurostat and Eurobarometer
- National-level statistical bureaus
- Local sources, including government agency websites, reports, and related press releases
- Publicly available global rankings such as UN-Habitat

- Where applicable, recognised global data sets such as Forbes Global 2000 and the QS World University Ranking
- Survey- and self-report-based online data aggregators such as Numbeo

In addition, several types of proxies have been used:

- **Regional-level data points taken to represent cities.** These are used particularly where up-to-date, detailed information on EU regions was available and where 'Region X' and 'City of X' are often used interchangeably in a number of contexts.
- **Country-level GTCI data that are appropriate to represent cities.** These apply to smaller-sized cities located in small countries, where the city's population (without suburbs/adjacent metropolitan areas) amounts to at least 25% of the total country population.
- **Injecting data points from online tools into published indices.** Where existing branded indices such as UN-Habitat did not include a particular city listed in the GCTCI, an approximate value was calculated by weighting the city's corresponding score on numbeo.com. The value of the weight was based on a benchmark that was set by a city ranked as a leader in both sources (i.e., in UN-Habitat and Numbeo).



Figure 4

**A closer look at European cities**

Note: Highlighted cities are those in the top 10 of this year's GCTCI.

In sum, the computation of the GCTCI involved seven main steps. First, data were collected at the city level. Second, data not available at the city level, but available and relevant at the regional or national level, were collected and applied as proxies. Third, the data set was tested for missing data points through the use of the double threshold approach—that is, cities and variables where 50% or more of data points were not available were eliminated. Fourth, using the same methodology as the GTCI, the presence of outliers in the data set was tested and, where needed, the outliers were treated (see Appendix I for details on the detection and treatment of outliers). Fifth, the resulting data set was normalised. Sixth, pillar scores and ranks were computed by averaging their respective variables. Seventh, the overall GCTCI score and rank was calculated by averaging the scores of the five pillars.

**City Coverage**

This third edition of the GCTCI is the first one to include more than 100 cities (Figure 3). More specifically, the number of cities covered has increased from a total of 90 last year to 114 this year. The greater coverage is due to a combination of factors, including the proactivity of GCTCI's research team in identifying new

sources and indicators, as well as the contributions and feedback received from a number of municipalities around the world, which volunteered to share verifiable local data.

The GCTCI coverage remains largely European (51 cities out of 114; Figure 4), primarily because of the large availability of data that stem from the work produced by Eurostat in collecting data at the city level. However, a concerted effort has been made this year to expand the number of cities outside Europe. As a result, for the first time in the GCTCI, non-European cities outnumber European cities, with the following regional breakdown: 12 in Africa and the Middle East, 29 in Asia Pacific (11 from mainland China), 10 in Latin America, and 12 in Northern America (9 from the United States).

Like last year, the cities included in the index represent a mix of large and small urban centres, some of which are national capitals or leading urban centres while others could be seen as 'secondary hubs' or even 'remote locations'. The cities were identified on the basis of their reputation and growing footprint in attracting global talent rather than as a function of their size or national-capital status. The availability and comparability of data obviously also played a key role in this selection.<sup>3</sup>

Table 1

**Global City Talent Competitiveness Index rankings and overall scores**

| RANK | CITY                                    | OVERALL SCORE | RANK | CITY                                | OVERALL SCORE |
|------|-----------------------------------------|---------------|------|-------------------------------------|---------------|
| 1    | <i>Washington, DC (United States)</i>   | 69.2          | 58   | <i>Beijing (China)</i>              | 44.1          |
| 2    | Copenhagen (Denmark)                    | 68.0          | 59   | <i>Dubai (United Arab Emirates)</i> | 44.0          |
| 3    | Oslo (Norway)                           | 66.1          | 60   | Bucharest (Romania)                 | 43.1          |
| 4    | Vienna (Austria)                        | 65.7          | 61   | <i>Auckland (New Zealand)</i>       | 42.7          |
| 5    | Zurich (Switzerland)                    | 65.5          | 62   | Hanover (Germany)                   | 42.3          |
| 6    | <i>Boston (United States)</i>           | 65.4          | 63   | St. Petersburg (Russia)             | 42.3          |
| 7    | Helsinki (Finland)                      | 65.0          | 64   | Rome (Italy)                        | 41.7          |
| 8    | <i>New York (United States)</i>         | 64.6          | 65   | <i>Bangkok (Thailand)</i>           | 41.4          |
| 9    | Paris (France)                          | 63.5          | 66   | Vilnius (Lithuania)                 | 40.9          |
| 10   | <i>Seoul (Korea, Rep.)</i>              | 62.7          | 67   | <i>Istanbul (Turkey)</i>            | 40.8          |
| 11   | Stockholm (Sweden)                      | 62.6          | 68   | Birmingham (United Kingdom)         | 40.5          |
| 12   | <i>San Francisco (United States)</i>    | 62.5          | 69   | Riga (Latvia)                       | 39.9          |
| 13   | <i>Seattle (United States)</i>          | 62.1          | 70   | Nantes (France)                     | 39.8          |
| 14   | London (United Kingdom)                 | 62.1          | 71   | Bologna (Italy)                     | 39.8          |
| 15   | <i>Taipei (Chinese Taipei)</i>          | 60.5          | 72   | <i>Shanghai (China)</i>             | 39.4          |
| 16   | Geneva (Switzerland)                    | 59.1          | 73   | Milan (Italy)                       | 38.8          |
| 17   | <i>Singapore (Singapore)</i>            | 58.7          | 74   | Brno (Czech Republic)               | 38.7          |
| 18   | Brussels (Belgium)                      | 58.5          | 75   | <i>Nagoya (Japan)</i>               | 38.2          |
| 19   | <i>Tokyo (Japan)</i>                    | 58.4          | 76   | <i>Kuala Lumpur (Malaysia)</i>      | 37.3          |
| 20   | Munich (Germany)                        | 58.3          | 77   | <i>Buenos Aires (Argentina)</i>     | 37.3          |
| 21   | Amsterdam (Netherlands)                 | 58.1          | 78   | Sofia (Bulgaria)                    | 37.1          |
| 22   | <i>Los Angeles (United States)</i>      | 57.8          | 79   | Turin (Italy)                       | 36.2          |
| 23   | Madrid (Spain)                          | 56.9          | 80   | Zagreb (Croatia)                    | 35.2          |
| 24   | <i>Montreal (Canada)</i>                | 56.7          | 81   | Valletta (Malta)                    | 35.1          |
| 25   | Prague (Czech Republic)                 | 55.7          | 82   | <i>Hangzhou (China)</i>             | 33.2          |
| 26   | <i>Sydney (Australia)</i>               | 55.6          | 83   | Krakow (Poland)                     | 32.2          |
| 27   | <i>Hong Kong (SAR, China)</i>           | 55.2          | 84   | <i>Kuwait City (Kuwait)</i>         | 32.2          |
| 28   | Rotterdam-The Hague (Netherlands)       | 55.0          | 85   | <i>Bogota (Colombia)</i>            | 32.1          |
| 29   | <i>Ottawa (Canada)</i>                  | 54.4          | 86   | <i>Santiago (Chile)</i>             | 31.3          |
| 30   | <i>Melbourne (Australia)</i>            | 54.4          | 87   | <i>Guangzhou (China)</i>            | 31.0          |
| 31   | <i>Chicago (United States)</i>          | 54.2          | 88   | <i>Sao Paulo (Brazil)</i>           | 30.9          |
| 32   | Berlin (Germany)                        | 54.1          | 89   | <i>Bangalore (India)</i>            | 30.4          |
| 33   | <i>Toronto (Canada)</i>                 | 53.9          | 90   | <i>Montevideo (Uruguay)</i>         | 29.9          |
| 34   | Gothenburg (Sweden)                     | 53.2          | 91   | <i>Mexico City (Mexico)</i>         | 29.8          |
| 35   | Dublin (Ireland)                        | 52.7          | 92   | <i>Xi'an (China)</i>                | 29.7          |
| 36   | <i>Dallas (United States)</i>           | 52.5          | 93   | <i>Chengdu (China)</i>              | 29.6          |
| 37   | Bratislava (Slovakia)                   | 52.3          | 94   | <i>Shenzhen (China)</i>             | 28.6          |
| 38   | Luxembourg (Luxembourg)                 | 52.2          | 95   | <i>Delhi (India)</i>                | 28.1          |
| 39   | Frankfurt (Germany)                     | 52.1          | 96   | <i>Mumbai (India)</i>               | 27.0          |
| 40   | Eindhoven (Netherlands)                 | 50.9          | 97   | <i>Lima (Peru)</i>                  | 26.8          |
| 41   | <i>Osaka (Japan)</i>                    | 50.4          | 98   | <i>Manila (Philippines)</i>         | 26.4          |
| 42   | Moscow (Russia)                         | 50.2          | 99   | Belgrade (Serbia)                   | 26.2          |
| 43   | <i>Houston (United States)</i>          | 49.6          | 100  | <i>Jakarta (Indonesia)</i>          | 26.2          |
| 44   | Bilbao (Spain)                          | 49.5          | 101  | <i>Zhengzhou (China)</i>            | 25.1          |
| 45   | Lisbon (Portugal)                       | 49.3          | 102  | <i>Brasilia (Brazil)</i>            | 25.0          |
| 46   | Kiel (Germany)                          | 49.2          | 103  | <i>Wuhan (China)</i>                | 24.6          |
| 47   | Tallinn (Estonia)                       | 48.0          | 104  | <i>Tianjin (China)</i>              | 24.3          |
| 48   | Athens (Greece)                         | 47.7          | 105  | <i>Rio de Janeiro (Brazil)</i>      | 22.7          |
| 49   | Barcelona (Spain)                       | 47.1          | 106  | <i>Quito (Ecuador)</i>              | 22.4          |
| 50   | Ljubljana (Slovenia)                    | 47.0          | 107  | <i>Johannesburg (South Africa)</i>  | 21.9          |
| 51   | <i>Doha (Qatar)</i>                     | 46.8          | 108  | <i>Chongqing (China)</i>            | 21.6          |
| 52   | <i>Tel Aviv (Israel)</i>                | 46.7          | 109  | <i>Tunis (Tunisia)</i>              | 20.9          |
| 53   | Cardiff (United Kingdom)                | 46.0          | 110  | <i>Hanoi (Viet Nam)</i>             | 19.0          |
| 54   | Zaragoza (Spain)                        | 45.9          | 111  | <i>Casablanca (Morocco)</i>         | 17.9          |
| 55   | <i>Abu Dhabi (United Arab Emirates)</i> | 45.3          | 112  | <i>Cape Town (South Africa)</i>     | 17.6          |
| 56   | Warsaw (Poland)                         | 44.9          | 113  | <i>Cairo (Egypt)</i>                | 15.3          |
| 57   | Budapest (Hungary)                      | 44.4          | 114  | <i>Nairobi (Kenya)</i>              | 12.6          |

Note: Non-European cities are italicised. Colours indicate quartile, and range from dark (the top quartile) to light (the bottom quartile).



Table 2

**Top 10 city rankings and scores, by GCTCI pillar**

| Pillar 1: Enable |               |       | Pillar 2: Attract |                |       | Pillar 3: Grow |                |       | Pillar 4: Retain |           |       | Pillar 5: Be Global |                |       |
|------------------|---------------|-------|-------------------|----------------|-------|----------------|----------------|-------|------------------|-----------|-------|---------------------|----------------|-------|
| RANK             | CITY          | SCORE | RANK              | CITY           | SCORE | RANK           | CITY           | SCORE | RANK             | CITY      | SCORE | RANK                | CITY           | SCORE |
| 1                | Seoul         | 93.9  | 1                 | Seattle        | 81.2  | 1              | Boston         | 77.5  | 1                | Taipei    | 89.2  | 1                   | Paris          | 86.5  |
| 2                | San Francisco | 88.2  | 2                 | Luxembourg     | 79.4  | 2              | Singapore      | 76.3  | 2                | Zurich    | 81.7  | 2                   | London         | 82.5  |
| 3                | Hong Kong     | 83.5  | 3                 | Boston         | 74.8  | 3              | New York       | 74.5  | 3                | Kiel      | 78.7  | 3                   | Washington, DC | 81.9  |
| 4                | Boston        | 79.9  | 4                 | Ottawa         | 74.0  | 4              | Los Angeles    | 73.6  | 4                | Vienna    | 77.6  | 4                   | New York       | 73.9  |
| 5                | Tokyo         | 79.6  | 5                 | New York       | 71.9  | 5              | San Francisco  | 69.6  | 5                | Geneva    | 72.9  | 5                   | Oslo           | 71.6  |
| 6                | Copenhagen    | 79.0  | 6                 | Dublin         | 70.2  | 6              | Seoul          | 69.6  | 6                | Zaragoza  | 72.7  | 6                   | Brussels       | 70.6  |
| 7                | Stockholm     | 78.9  | 7                 | Washington, DC | 68.9  | 7              | Oslo           | 69.6  | 7                | Osaka     | 68.6  | 7                   | Moscow         | 69.6  |
| 8                | Los Angeles   | 78.5  | 8                 | Zurich         | 68.9  | 8              | Sydney         | 68.2  | 8                | Prague    | 68.0  | 8                   | Helsinki       | 68.0  |
| 9                | Seattle       | 75.7  | 9                 | San Francisco  | 68.3  | 9              | Washington, DC | 66.7  | 9                | Bangalore | 67.7  | 9                   | Copenhagen     | 66.7  |
| 10               | Paris         | 74.5  | 10                | Kiel           | 66.5  | 10             | Melbourne      | 66.3  | 10               | Munich    | 67.5  | 10                  | Stockholm      | 63.6  |

**GCTCI FINDINGS**

This section presents the findings of the GCTCI, looking first at the overall rankings of the 114 cities covered by the index, and then at the specific rankings in each of the five pillars of the GCTCI model.

**Overall GCTCI Rankings**

Table 1 presents the overall GCTCI rankings for all cities based on the average scores across the five pillars. The top-ranked city this year is Washington, DC—up from its 6th position last year. It is followed by four European cities: the Nordic cities of Copenhagen and Oslo in 2nd and 3rd place, respectively, and the central European cities of Vienna (4th) and Zurich (5th). Of the remaining five cities in the top 10, two are from Europe (Helsinki, 7th; Paris, 9th), two are from Northern America (Boston, 6th; New York, 8th), and one is from Eastern Asia (Seoul, 10th). Six of this year's top 10 cities were also in the top 10 last year. The four cities that have broken into the top 10 are Vienna, Boston, New York, and Seoul, while the four cities that have dropped out of the top 10 are Stockholm (11th this year), San Francisco (12th), Brussels (18th), and Dublin (35th).

As for the other cities in the top quartile (i.e., those ranked 29th or better), nine are located in Europe, primarily in Northern and Western Europe. Of the non-European cities, five are found in Northern America (San Francisco, 12th; Seattle, 13th; Los Angeles, 22nd; Montreal, 24th; Ottawa, 29th), four are in Eastern and Southeastern Asia (Taipei, 15th; Singapore, 17th; Tokyo, 19th; Hong Kong, 27th), and one is in Australia (Sydney, 26th). All in all, the fourth quartile encompasses a great diversity of cities that span the globe and range from fairly small cities such as Geneva (16th) and Amsterdam (21st) to large metropolises such as London (14th), Tokyo, Los Angeles, and Hong Kong.

The third quartile (cities ranked between 30th and 57th) is also dominated by European cities—19 in total. The geographical distribution of the European cities is more diverse, however,

and includes several cities from Eastern and Southern Europe in addition to many from Northern and Western Europe. Outside Europe, this group also features four Northern American cities (Chicago, 31st; Toronto, 33rd; Dallas, 36th; Houston, 43rd), three in Western Asia (Doha, 51st; Tel Aviv, 52nd; Abu Dhabi, 55th), and one each in Australia (Melbourne, 30th) and Japan (Osaka, 41st).

The highest-ranked cities from mainland China are found in the second quartile (cities ranked between 58th and 86th), viz. Beijing (57th), Shanghai (72nd), and Hangzhou (82nd). Similarly, the second quartile features the highest-ranked cities located in Latin America: Buenos Aires (77th), Bogota (85th), and Santiago (86th). In addition to these, there are six non-European cities in this group, including three from Western Asia (Dubai, 59th; Istanbul, 67th; Kuwait City, 84th), two from Southeastern Asia (Bangkok, 65th; Kuala Lumpur, 76th), and one each from New Zealand (Auckland, 61st) and Japan (Nagoya, 75th). The remaining 16 cities are located in Europe, primarily in the continent's eastern and southern parts.

The bottom quartile (cities ranked 87th or worse) contrasts significantly from the other three quartiles in that it features overwhelmingly non-European cities. In fact, the only city from Europe included in the group is Belgrade (99th). Eight cities are located in China and three are found in India (Bangalore, 89th; Delhi, 95th; Mumbai, 96th). Also included in this quartile are seven Latin American cities (including three from Brazil), six African cities, and three Southeastern Asian cities (Manila, 98th; Jakarta, 100th; Hanoi, 110th).

Details about GCTCI rankings overall and by variable are presented in Annex 2.

**Findings from the GCTCI Pillars**

When brought to the pillar level of the GCTCI model, the data available show a much more diverse picture of talent performance across cities (Table 2).

Analysis of the GCTCI at the pillar level hence suggests several ways in which cities can spur talent competitiveness. Three key messages that emerge from this year's results are the following:

### *Complementarities of Pillars Boost Talent Competitiveness*

Both previous editions of the GCTCI underlined that the pillars of talent competitiveness do not exist in isolation. Rather, analysis of overall scores and performances by pillar suggest that positive feedback loops are in action because different dimensions of talent competitiveness mutually reinforce one another. Thus, for instance, higher income levels can eventually lead to higher technology penetration rates and a better quality of education and healthcare that, in turn, boost income levels, and so on in a virtuous cycle. The positive high correlations among several of the five pillars—the two highest correlations are between Enable and Grow, and between Attract and Be Global—is one indication of the complementary developments that can take place. Another manifestation of the complementarities across different dimensions is that cities ranked high in one pillar are often ranked high in other pillars (Table 2). For instance, the top-ranked city this year—Washington, DC—is in the top 10 in three of the five pillars (it ranks 11th in one of the other two). Similarly, eight of the cities that rank in the overall top 10 of the GCTCI also feature in the top 10 in at least two of the five pillars.

### *Within-Country Complementarities Show Scope for National- as well as City-Level Action on Talent*

In addition to complementarities across pillars, there seems to be a degree of complementary development among cities within the same countries. That is, cities from the same country tend to perform well (or not so well) in the same pillars. To take a concrete example, all nine US cities included in the GCTCI perform worst with respect to the Retain pillar, whereas seven of them exhibit strong performances in the Attract pillar. Such within-country complementarity is to be expected inasmuch as cities in the same country share the same broad political, social, and economic environment. It is nonetheless interesting to note that an analysis of within-country variation across pillars suggests that the greatest complementarities are with respect to the Enable, Attract, and Grow pillars.

### *Each City Has Strengths to Build On for Greater Talent Competitiveness*

In the race for talents, each of the cities included in the GCTCI has very valuable cards to play. Indeed, a particularly relevant takeaway for cities that are low in the overall ranking is that they have strengths as well as weaknesses, as clearly borne out by the pillar-level analysis. For instance, several lower-ranked cities perform relatively well in the Retain pillar (Bangalore being the most conspicuous example) and can therefore draw on specific advantages, such as high affordability, to boost other talent dimensions. By building on their strengths, cities can formulate local policies

and strategies that, combined with the energy of local leaders and local communities, can improve performances across all pillars, and, ultimately, result in greater talent competitiveness.

## ENDNOTES

- 1 Lanvin & Evans (2018), p. 89.
- 2 A complete list of sources is provided as an annex to the present special section.
- 3 As underlined in the GCTCI 2017, the definition of what constitutes a city is obviously a critical element here. To an extent, this is guided by data availability, with some data available only at the metropolitan or regional level. The general approach in the GCTCI this year has been to define cities as metropolitan areas. This can, for instance, be seen in the case of Rotterdam and The Hague, which have been combined into one unit in this year's ranking (as opposed to being treated as separate units in previous GCTCI versions).

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## Annex 1

## Definition and sources of GCTCI variables

| PILLAR    | VARIABLE                                                                                                                   | SOURCE                                                                           |
|-----------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Enable    | 1.1 Gross expenditure on R&D (% of GDP)                                                                                    | Eurostat, OECD, national statistics                                              |
|           | 1.2 ICT access (% of households with internet access at home)                                                              | Eurostat, OECD, national statistics                                              |
|           | 1.3 Presence of Forbes Global 2000 companies (HQ presence)                                                                 | Forbes                                                                           |
| Attract   | 2.1 GDP per capita                                                                                                         | Global Metro Monitor, OECD, national statistics, World Bank                      |
|           | 2.2 Quality of life                                                                                                        | UN Habitat, Numbeo                                                               |
|           | 2.3 Environmental quality                                                                                                  | WHO Air Pollution database June 2018                                             |
| Grow      | 3.1 Major universities (average score of top universities—up to three universities)                                        | QS World University Ranking 2019                                                 |
|           | 3.2 Tertiary enrolment (% of population aged 20–24)                                                                        | Eurostat, national statistics, GTCI values used as a proxy                       |
|           | 3.3 Individuals in social networks (% of population)                                                                       | Eurostat with 'We are social' national data used as a proxy                      |
| Retain    | 4.1 Personal safety score                                                                                                  | Numbeo                                                                           |
|           | 4.2 Physician density (physicians per 1,000 people)                                                                        | Eurostat, OECD, national statistics                                              |
|           | 4.3 Affordability: Ratio of average monthly net salary (after tax) to rent per month: Apartment (1 bedroom) in city centre | Numbeo                                                                           |
| Be Global | 5.1 Workforce with tertiary education (% of working population)                                                            | Eurostat, national statistics, GTCI and OECD used as a proxy                     |
|           | 5.2 Population with tertiary education (% of population aged 25 and higher)                                                | Eurostat, OECD, national statistics, UNESCO UIS with GTCI values used as a proxy |
|           | 5.3 Airport connectivity (total number of passengers through international airports servicing the city)                    | anna.aero, Airports Council International, national statistics                   |
|           | 5.4 Intergovernmental organisations (number of IGOs adjusted by population)                                                | Yearbook of International Organizations*                                         |

Note: IGO = intergovernmental organisation; ICT = information and communication technologies; OECD = Organisation for Economic Co-operation and Development; UNESCO UIS = United Nations Educational, Scientific, and Cultural Organization Institute for Statistics; WHO = World Health Organization.

\* Selected intergovernmental organisations were those of type 1 (A, B, C, D, E, F and G) as defined by the Yearbook of International Organizations.

## Annex 2

## GCTCI cities and rankings: Overall and by variable

| Rank | City                | GCTCI<br>OVERALL | 1. ENABLE              |                                                    |                                                       | 2. ATTRACT            |                        |                                 |
|------|---------------------|------------------|------------------------|----------------------------------------------------|-------------------------------------------------------|-----------------------|------------------------|---------------------------------|
|      |                     |                  | 1.1<br>R&D expenditure | 1.2<br>ICT access<br>(households with<br>internet) | 1.3<br>Presence<br>of Forbes Global<br>2000 companies | 2.1<br>GDP per capita | 2.2<br>Quality of life | 2.3<br>Environmental<br>quality |
| 1    | Washington, DC      | 69.2             | 69.1                   | 86.7                                               | 61.3                                                  | 70.3                  | 61.5                   | 75.1                            |
| 2    | Copenhagen          | 68.0             | 94.2                   | 96.6                                               | 46.3                                                  | 60.0                  | 78.8                   | 54.2                            |
| 3    | Oslo                | 66.1             | 58.1                   | 96.6                                               | 41.8                                                  | 49.7                  | 75.9                   | 65.1                            |
| 4    | Vienna              | 65.7             | 74.9                   | 78.7                                               | 39.1                                                  | 57.7                  | 75.1                   | 62.8                            |
| 5    | Zurich              | 65.5             | 61.2                   | 88.6                                               | 64.8                                                  | 53.6                  | 81.9                   | 71.1                            |
| 6    | Boston              | 65.4             | 100.0                  | 81.6                                               | 58.2                                                  | 73.5                  | 70.7                   | 80.2                            |
| 7    | Helsinki            | 65.0             | 73.9                   | 96.6                                               | 46.3                                                  | 44.3                  | 74.9                   | 58.8                            |
| 8    | New York            | 64.6             | 30.1                   | 76.8                                               | 91.1                                                  | 67.1                  | 68.3                   | 80.2                            |
| 9    | Paris               | 63.5             | 59.2                   | 82.7                                               | 81.8                                                  | 54.2                  | 77.0                   | 49.5                            |
| 10   | Seoul               | 62.7             | 100.0                  | 100.0                                              | 81.8                                                  | 30.8                  | 52.2                   | 35.7                            |
| 11   | Stockholm           | 62.6             | 78.0                   | 94.6                                               | 64.0                                                  | 53.2                  | 80.5                   | 60.7                            |
| 12   | San Francisco       | 62.5             | 100.0                  | 85.0                                               | 79.6                                                  | 69.6                  | 64.3                   | 71.1                            |
| 13   | Seattle             | 62.1             | 91.3                   | 87.6                                               | 48.3                                                  | 70.3                  | 73.2                   | 100.0                           |
| 14   | London              | 62.1             | 21.4                   | 92.6                                               | 86.4                                                  | 54.1                  | 78.1                   | 55.6                            |
| 15   | Taipei              | 60.5             | n/a                    | n/a                                                | 70.4                                                  | 42.8                  | 58.1                   | n/a                             |
| 16   | Geneva              | 59.1             | n/a                    | 70.7                                               | 41.8                                                  | 56.9                  | 75.4                   | 65.1                            |
| 17   | Singapore           | 58.7             | 47.5                   | 76.7                                               | 58.2                                                  | 64.0                  | 54.4                   | 47.5                            |
| 18   | Brussels            | 58.5             | 36.2                   | 70.7                                               | 41.8                                                  | 43.0                  | 71.3                   | 51.7                            |
| 19   | Tokyo               | 58.4             | n/a                    | 59.2                                               | 100.0                                                 | 40.3                  | 81.7                   | 42.6                            |
| 20   | Munich              | 58.3             | 89.2                   | 78.7                                               | 46.3                                                  | 53.2                  | 75.7                   | 60.7                            |
| 21   | Amsterdam           | 58.1             | 34.7                   | 98.6                                               | 50.0                                                  | 62.0                  | 70.5                   | 58.8                            |
| 22   | Los Angeles         | 57.8             | 100.0                  | 79.7                                               | 55.8                                                  | 62.2                  | 50.9                   | 52.9                            |
| 23   | Madrid              | 56.9             | 34.7                   | 78.7                                               | 55.8                                                  | 35.9                  | 77.4                   | 62.8                            |
| 24   | Montreal            | 56.7             | 44.9                   | 64.4                                               | 54.5                                                  | 35.4                  | 76.3                   | 75.1                            |
| 25   | Prague              | 55.7             | 60.6                   | 78.7                                               | 13.9                                                  | 43.7                  | 77.5                   | 55.6                            |
| 26   | Sydney              | 55.6             | 41.3                   | 70.7                                               | 62.2                                                  | 43.1                  | 81.0                   | 67.9                            |
| 27   | Hong Kong           | 55.2             | n/a                    | n/a                                                | 83.5                                                  | 54.2                  | 71.7                   | 44.1                            |
| 28   | Rotterdam-The Hague | 55.0             | 44.4                   | 98.6                                               | 44.2                                                  | 47.6                  | 71.5                   | 60.7                            |
| 29   | Ottawa              | 54.4             | 38.4                   | 77.1                                               | 0.0                                                   | 40.8                  | 81.1                   | 100.0                           |
| 30   | Melbourne           | 54.4             | 45.9                   | 72.7                                               | 51.6                                                  | 36.8                  | 81.3                   | 62.8                            |
| 31   | Chicago             | 54.2             | 43.2                   | 76.1                                               | 71.6                                                  | 55.8                  | 67.7                   | 57.1                            |
| 32   | Berlin              | 54.1             | 72.2                   | 90.6                                               | 22.1                                                  | 32.8                  | 80.9                   | 55.6                            |
| 33   | Toronto             | 53.9             | 38.4                   | 77.1                                               | 62.2                                                  | 42.5                  | 77.8                   | 71.1                            |
| 34   | Gothenburg          | 53.2             | 77.8                   | 92.6                                               | 27.9                                                  | 36.9                  | 75.8                   | 65.1                            |
| 35   | Dublin              | 52.7             | 30.1                   | 80.7                                               | 61.3                                                  | 48.1                  | 75.1                   | 87.4                            |
| 36   | Dallas              | 52.5             | 27.9                   | 80.2                                               | 62.2                                                  | 56.5                  | 74.8                   | 67.9                            |
| 37   | Bratislava          | 52.3             | 37.2                   | 70.7                                               | 0.0                                                   | 70.2                  | 52.3                   | 55.6                            |
| 38   | Luxembourg          | 52.2             | 25.4                   | 94.6                                               | 36.0                                                  | 100.0                 | 77.5                   | 60.7                            |
| 39   | Frankfurt           | 52.1             | 63.5                   | 82.7                                               | 39.1                                                  | 48.5                  | 67.5                   | 60.7                            |
| 40   | Eindhoven           | 50.9             | 56.7                   | 96.6                                               | 27.9                                                  | 49.6                  | 87.0                   | 62.8                            |
| 41   | Osaka               | 50.4             | n/a                    | 43.7                                               | 64.8                                                  | 32.4                  | 81.6                   | 42.0                            |
| 42   | Moscow              | 50.2             | n/a                    | 51.0                                               | 58.2                                                  | 42.5                  | 19.4                   | 49.5                            |
| 43   | Houston             | 49.6             | 27.9                   | 79.3                                               | 64.8                                                  | 72.2                  | 67.0                   | 52.9                            |
| 44   | Bilbao              | 49.5             | 38.6                   | 74.7                                               | 13.9                                                  | 35.3                  | 68.4                   | 75.1                            |
| 45   | Lisbon              | 49.3             | 30.3                   | 70.7                                               | 27.9                                                  | 28.9                  | 74.5                   | 51.7                            |
| 46   | Kiel                | 49.2             | 29.9                   | 82.7                                               | 0.0                                                   | 36.6                  | 100.0                  | 62.8                            |
| 47   | Tallinn             | 48.0             | 29.9                   | 76.7                                               | 0.0                                                   | 28.2                  | 64.5                   | 100.0                           |
| 48   | Athens              | 47.7             | 22.9                   | 56.8                                               | 41.8                                                  | 28.9                  | 70.7                   | 39.4                            |
| 49   | Barcelona           | 47.1             | 30.6                   | 68.7                                               | 36.0                                                  | 32.7                  | 76.8                   | 54.2                            |
| 50   | Ljubljana           | 47.0             | 54.2                   | 68.7                                               | 0.0                                                   | 35.7                  | 63.4                   | 51.7                            |
| 51   | Doha                | 46.8             | 9.4                    | 92.2                                               | 44.2                                                  | 100.0                 | 60.9                   | 10.3                            |
| 52   | Tel Aviv            | 46.7             | n/a                    | 58.5                                               | 46.3                                                  | 39.3                  | 50.2                   | 29.4                            |
| 53   | Cardiff             | 46.0             | 24.3                   | 78.7                                               | 0.0                                                   | 26.1                  | 71.3                   | 80.2                            |
| 54   | Zaragoza            | 45.9             | 17.7                   | 70.7                                               | 0.0                                                   | 35.9                  | 80.3                   | 60.7                            |
| 55   | Abu Dhabi           | 45.3             | 17.1                   | 89.2                                               | 41.8                                                  | 58.0                  | 65.8                   | 12.4                            |
| 56   | Warsaw              | 44.9             | 35.1                   | 56.8                                               | 36.0                                                  | 45.5                  | 74.5                   | 44.9                            |
| 57   | Budapest            | 44.4             | 38.0                   | 78.7                                               | 22.1                                                  | 31.0                  | 70.3                   | 49.5                            |

| 3. GROW                      |                              |                                             | 4. RETAIN                 |                             |                      | 5. BE GLOBAL                                   |                                                 |                                |                            |
|------------------------------|------------------------------|---------------------------------------------|---------------------------|-----------------------------|----------------------|------------------------------------------------|-------------------------------------------------|--------------------------------|----------------------------|
| 3.1<br>Major<br>universities | 3.2<br>Tertiary<br>enrolment | 3.3<br>Individuals<br>in social<br>networks | 4.1<br>Personal<br>safety | 4.2<br>Physician<br>density | 4.3<br>Affordability | 5.1<br>Workforce<br>with tertiary<br>education | 5.2<br>Population<br>with tertiary<br>education | 5.3<br>Airport<br>connectivity | 5.4<br>Presence<br>of IGOs |
| 66.8                         | 75.0                         | 58.2                                        | 32.1                      | 100.0                       | 35.9                 | 78.3                                           | 84.1                                            | 65.3                           | 100.0                      |
| 66.9                         | 60.4                         | 70.1                                        | 81.8                      | 59.3                        | 50.7                 | 63.5                                           | 83.0                                            | 25.8                           | 94.6                       |
| 57.6                         | 66.0                         | 85.1                                        | 55.4                      | 73.6                        | 51.7                 | 80.0                                           | 90.1                                            | 24.3                           | 92.0                       |
| 50.1                         | 88.8                         | 40.3                                        | 81.0                      | 97.8                        | 54.0                 | 62.7                                           | 69.0                                            | 21.5                           | 93.3                       |
| 88.1                         | 65.2                         | 26.9                                        | 87.5                      | 72.2                        | 85.5                 | 70.4                                           | 85.5                                            | 26.0                           | 0.0                        |
| 100.0                        | 74.1                         | 58.2                                        | 67.9                      | 57.6                        | 16.0                 | 73.6                                           | 78.5                                            | 39.4                           | 0.0                        |
| 60.3                         | 54.0                         | 61.2                                        | 82.4                      | 59.4                        | 59.6                 | 71.7                                           | 85.1                                            | 16.6                           | 98.5                       |
| 99.8                         | 65.5                         | 58.2                                        | 50.3                      | 44.8                        | 15.1                 | 62.8                                           | 64.7                                            | 100.0                          | 68.1                       |
| 76.8                         | 48.4                         | 25.4                                        | 39.4                      | 51.9                        | 46.3                 | 73.0                                           | 79.1                                            | 94.0                           | 100.0                      |
| 75.0                         | 56.1                         | 77.6                                        | 60.9                      | 27.2                        | 78.9                 | 65.4                                           | 57.4                                            | 77.8                           | 18.8                       |
| 58.8                         | 38.5                         | 65.7                                        | 46.1                      | 66.1                        | 42.1                 | 70.6                                           | 84.4                                            | 27.8                           | 71.6                       |
| 71.2                         | 79.4                         | 58.2                                        | 42.5                      | 30.4                        | 11.2                 | 78.6                                           | 81.5                                            | 72.6                           | 0.0                        |
| 75.2                         | 60.2                         | 58.2                                        | 50.7                      | 32.0                        | 50.6                 | 61.4                                           | 68.7                                            | 41.7                           | 6.7                        |
| 99.3                         | 36.8                         | 61.2                                        | 43.4                      | 38.4                        | 16.6                 | 88.3                                           | 94.3                                            | 100.0                          | 47.2                       |
| 51.2                         | n/a                          | 71.6                                        | 86.0                      | n/a                         | 92.5                 | n/a                                            | n/a                                             | 45.2                           | 16.2                       |
| 64.8                         | 33.9                         | 29.9                                        | 75.5                      | 67.2                        | 75.9                 | 55.3                                           | 59.9                                            | 15.2                           | 100.0                      |
| 76.5                         | n/a                          | 76.1                                        | 92.2                      | 25.8                        | 17.4                 | 76.1                                           | 70.4                                            | 55.4                           | 21.1                       |
| 46.6                         | 86.3                         | 64.2                                        | 39.8                      | 49.9                        | 64.2                 | 76.9                                           | 76.8                                            | 28.7                           | 100.0                      |
| 74.1                         | 37.2                         | 35.8                                        | 91.5                      | 38.4                        | 61.4                 | 70.1                                           | 47.9                                            | 36.1                           | 24.1                       |
| 77.3                         | 39.2                         | 20.9                                        | 89.5                      | 57.6                        | 55.5                 | 52.0                                           | 64.5                                            | 39.6                           | 18.9                       |
| 61.6                         | 48.4                         | 58.2                                        | 66.3                      | 63.6                        | 28.6                 | 60.4                                           | 73.0                                            | 61.1                           | 31.4                       |
| 87.0                         | 75.6                         | 58.2                                        | 44.3                      | 30.4                        | 26.4                 | 48.2                                           | 55.4                                            | 87.2                           | 0.0                        |
| 47.9                         | 74.6                         | 37.3                                        | 54.4                      | 62.9                        | 41.1                 | 71.3                                           | 77.5                                            | 47.5                           | 56.7                       |
| 57.8                         | n/a                          | 53.7                                        | 67.8                      | 27.2                        | 72.0                 | 100.0                                          | 78.7                                            | 15.9                           | 26.1                       |
| 30.8                         | 100.0                        | 35.8                                        | 76.0                      | 100.0                       | 27.9                 | 64.9                                           | 75.1                                            | 13.4                           | 27.4                       |
| 75.3                         | 74.1                         | 55.2                                        | 60.3                      | 48.0                        | 34.8                 | 52.1                                           | 64.2                                            | 38.5                           | 6.0                        |
| 88.9                         | 27.9                         | 68.7                                        | 82.9                      | n/a                         | 13.8                 | n/a                                            | 11.4                                            | 65.0                           | 0.0                        |
| 64.5                         | 45.4                         | 49.3                                        | 67.8                      | 43.3                        | 48.7                 | 49.7                                           | 61.2                                            | 1.2                            | 73.1                       |
| 29.3                         | n/a                          | 53.7                                        | 77.9                      | 24.0                        | 78.4                 | 100.0                                          | 78.7                                            | 3.9                            | 49.3                       |
| 69.7                         | 74.1                         | 55.2                                        | 51.2                      | 48.0                        | 55.5                 | 52.1                                           | 64.2                                            | 31.5                           | 0.0                        |
| 80.1                         | 60.2                         | 58.2                                        | 20.2                      | 32.0                        | 34.1                 | 56.0                                           | 61.4                                            | 91.4                           | 0.0                        |
| 58.6                         | 51.6                         | 28.4                                        | 55.9                      | 73.5                        | 64.8                 | 58.0                                           | 66.3                                            | 29.5                           | 13.1                       |
| 43.7                         | n/a                          | 53.7                                        | 64.2                      | 24.0                        | 36.8                 | 100.0                                          | 78.7                                            | 41.9                           | 4.2                        |
| 49.9                         | 33.7                         | 58.2                                        | 50.6                      | 55.3                        | 58.1                 | 52.3                                           | 66.4                                            | 5.7                            | 29.9                       |
| 48.4                         | 53.9                         | 41.8                                        | 41.8                      | 26.7                        | 21.8                 | 67.0                                           | 76.8                                            | 26.2                           | 61.4                       |
| 24.8                         | 57.7                         | 58.2                                        | 49.2                      | 22.4                        | 73.1                 | 46.9                                           | 56.1                                            | 73.9                           | 0.0                        |
| 16.4                         | 100.0                        | 40.3                                        | 70.1                      | 93.8                        | 28.5                 | 60.6                                           | 70.1                                            | 1.3                            | 68.2                       |
| 0.0                          | 9.9                          | 53.7                                        | 75.3                      | 35.0                        | 54.0                 | 46.9                                           | 65.2                                            | 2.8                            | 100.0                      |
| 40.8                         | 39.2                         | 20.9                                        | 49.2                      | 52.8                        | 80.6                 | 45.2                                           | 55.7                                            | 57.5                           | 23.7                       |
| 51.5                         | 44.9                         | 47.8                                        | 78.2                      | 28.3                        | 55.2                 | 43.0                                           | 55.7                                            | 4.7                            | 0.0                        |
| 40.4                         | 37.2                         | 35.8                                        | 94.8                      | 30.4                        | 80.7                 | 70.1                                           | 47.9                                            | 38.7                           | 0.0                        |
| 48.2                         | 48.9                         | 22.4                                        | 50.8                      | 94.4                        | 3.9                  | 75.9                                           | 100.0                                           | 71.8                           | 30.6                       |
| 44.6                         | 59.2                         | 58.2                                        | 29.1                      | 22.4                        | 57.9                 | 43.2                                           | 52.2                                            | 48.1                           | 0.0                        |
| 21.6                         | 59.1                         | 25.4                                        | 64.2                      | 69.2                        | 43.4                 | 80.1                                           | 82.2                                            | 4.1                            | 39.6                       |
| 27.1                         | 57.5                         | 49.3                                        | 67.3                      | 87.9                        | 10.3                 | 44.2                                           | 52.6                                            | 23.5                           | 88.6                       |
| 28.4                         | 21.9                         | 28.4                                        | 81.0                      | 55.0                        | 100.0                | 25.9                                           | 38.1                                            | 0.0                            | 47.2                       |
| 16.7                         | 42.8                         | 41.8                                        | 85.9                      | 44.1                        | 43.3                 | 54.5                                           | 64.9                                            | 2.0                            | 74.1                       |
| 20.1                         | 84.9                         | 28.4                                        | 44.1                      | 100.0                       | 53.7                 | 58.6                                           | 62.6                                            | 19.1                           | 23.7                       |
| 47.5                         | 58.0                         | 41.8                                        | 49.0                      | 41.0                        | 23.1                 | 59.1                                           | 64.2                                            | 42.0                           | 30.6                       |
| 19.9                         | 64.1                         | 20.9                                        | 79.5                      | 45.6                        | 49.2                 | 54.6                                           | 61.1                                            | 1.1                            | 85.6                       |
| 35.5                         | 7.2                          | 100.0                                       | 95.8                      | 28.8                        | 26.9                 | 16.4                                           | 31.3                                            | 31.3                           | 43.2                       |
| 33.1                         | 37.8                         | 71.6                                        | 58.9                      | 65.6                        | 36.6                 | 65.9                                           | 77.5                                            | 18.3                           | 0.0                        |
| 55.8                         | 33.5                         | 50.7                                        | 62.0                      | 30.4                        | 76.0                 | 61.9                                           | 72.3                                            | 0.9                            | 0.0                        |
| 30.5                         | 50.3                         | 38.8                                        | 100.0                     | 67.4                        | 50.7                 | 54.0                                           | 59.5                                            | 0.0                            | 0.0                        |
| 24.3                         | 20.6                         | 100.0                                       | 97.7                      | 31.9                        | 37.9                 | 13.6                                           | n/a                                             | 17.4                           | 52.1                       |
| 26.6                         | 68.1                         | 19.4                                        | 68.5                      | 33.8                        | 26.8                 | 62.2                                           | 66.3                                            | 14.8                           | 39.2                       |
| 13.9                         | 53.7                         | 53.7                                        | 62.0                      | 50.2                        | 21.4                 | 49.5                                           | 57.8                                            | 11.4                           | 43.3                       |

(continued on next page)

## Annex 2 (continued)

## GCTCI cities and rankings: Overall and by variable

| Rank | City           | GCTCI<br>OVERALL | 1. ENABLE              |                                                    |                                                       | 2. ATTRACT            |                        |                                 |
|------|----------------|------------------|------------------------|----------------------------------------------------|-------------------------------------------------------|-----------------------|------------------------|---------------------------------|
|      |                |                  | 1.1<br>R&D expenditure | 1.2<br>ICT access<br>(households with<br>internet) | 1.3<br>Presence<br>of Forbes Global<br>2000 companies | 2.1<br>GDP per capita | 2.2<br>Quality of life | 2.3<br>Environmental<br>quality |
| 58   | Beijing        | 44.1             | 100.0                  | 8.4                                                | 83.8                                                  | 19.6                  | 62.7                   | 21.9                            |
| 59   | Dubai          | 44.0             | 17.1                   | 89.2                                               | 41.8                                                  | 21.1                  | 69.7                   | 12.4                            |
| 60   | Bucharest      | 43.1             | 18.1                   | 76.7                                               | 0.0                                                   | 35.2                  | 32.5                   | 46.6                            |
| 61   | Auckland       | 42.7             | 25.4                   | 60.8                                               | 0.0                                                   | 28.2                  | 65.7                   | 80.2                            |
| 62   | Hanover        | 42.3             | 48.6                   | 84.7                                               | 27.9                                                  | 42.0                  | 84.3                   | 62.8                            |
| 63   | St. Petersburg | 42.3             | n/a                    | 72.7                                               | 27.9                                                  | 19.6                  | 26.4                   | n/a                             |
| 64   | Rome           | 41.7             | 32.2                   | 64.8                                               | 41.8                                                  | 34.6                  | 25.8                   | 50.5                            |
| 65   | Bangkok        | 41.4             | n/a                    | 56.8                                               | 54.5                                                  | 15.9                  | 53.4                   | 39.4                            |
| 66   | Vilnius        | 40.9             | 20.6                   | 50.8                                               | 0.0                                                   | 38.4                  | 56.0                   | 50.5                            |
| 67   | Istanbul       | 40.8             | n/a                    | 82.7                                               | 48.3                                                  | 21.2                  | 27.9                   | 41.3                            |
| 68   | Birmingham     | 40.5             | 37.6                   | 78.7                                               | 13.9                                                  | 28.0                  | 57.7                   | 71.1                            |
| 69   | Riga           | 39.9             | 12.1                   | 58.8                                               | 0.0                                                   | 37.6                  | 44.9                   | 51.7                            |
| 70   | Nantes         | 39.8             | 24.5                   | 74.7                                               | 0.0                                                   | 32.5                  | 72.5                   | 65.1                            |
| 71   | Bologna        | 39.8             | 36.2                   | 68.7                                               | 13.9                                                  | 40.7                  | 50.4                   | 54.2                            |
| 72   | Shanghai       | 39.4             | 72.8                   | 0.0                                                | 68.5                                                  | 20.3                  | 62.1                   | 31.1                            |
| 73   | Milan          | 38.8             | 25.4                   | 68.7                                               | 46.3                                                  | 37.8                  | 78.8                   | 42.6                            |
| 74   | Brno           | 38.7             | 57.7                   | 70.7                                               | 0.0                                                   | 28.5                  | 58.5                   | 55.6                            |
| 75   | Nagoya         | 38.2             | n/a                    | 35.7                                               | 54.5                                                  | 36.7                  | 86.1                   | 44.1                            |
| 76   | Kuala Lumpur   | 37.3             | n/a                    | n/a                                                | 54.5                                                  | 24.4                  | 26.6                   | 36.2                            |
| 77   | Buenos Aires   | 37.3             | 12.2                   | 41.7                                               | 27.9                                                  | 19.9                  | 57.7                   | 50.5                            |
| 78   | Sofia          | 37.1             | 30.6                   | 42.9                                               | 0.0                                                   | 29.6                  | 35.5                   | 44.1                            |
| 79   | Turin          | 36.2             | 43.8                   | 64.8                                               | 22.1                                                  | 30.8                  | 39.8                   | 44.1                            |
| 80   | Zagreb         | 35.2             | 21.6                   | 56.8                                               | 0.0                                                   | 20.5                  | 56.2                   | 42.6                            |
| 81   | Valletta       | 35.1             | 15.0                   | 70.7                                               | 0.0                                                   | 32.8                  | 48.6                   | 38.3                            |
| 82   | Hangzhou       | 33.2             | 43.8                   | 56.6                                               | 41.8                                                  | 20.9                  | 33.9                   | 19.3                            |
| 83   | Krakow         | 32.2             | 29.9                   | 54.8                                               | 0.0                                                   | 24.0                  | 39.9                   | 38.9                            |
| 84   | Kuwait City    | 32.2             | 0.9                    | 50.8                                               | 27.9                                                  | 52.1                  | n/a                    | 15.9                            |
| 85   | Bogota         | 32.1             | n/a                    | n/a                                                | 32.4                                                  | 13.6                  | 52.2                   | 44.9                            |
| 86   | Santiago       | 31.3             | 11.7                   | 24.1                                               | 32.4                                                  | 20.2                  | 28.2                   | 28.4                            |
| 87   | Guangzhou      | 31.0             | 46.9                   | 23.5                                               | 44.2                                                  | 25.4                  | 20.5                   | 32.3                            |
| 88   | Sao Paulo      | 30.9             | 27.7                   | 28.9                                               | 54.5                                                  | 16.8                  | 50.3                   | 49.5                            |
| 89   | Bangalore      | 30.4             | n/a                    | n/a                                                | 32.4                                                  | 0.9                   | 37.4                   | 21.1                            |
| 90   | Montevideo     | 29.9             | n/a                    | n/a                                                | 0.0                                                   | 27.1                  | 35.7                   | 51.7                            |
| 91   | Mexico City    | 29.8             | n/a                    | 35.8                                               | 48.3                                                  | 15.4                  | 51.5                   | 40.6                            |
| 92   | Xi'an          | 29.7             | 43.0                   | n/a                                                | 13.9                                                  | 10.5                  | n/a                    | 14.1                            |
| 93   | Chengdu        | 29.6             | 30.6                   | n/a                                                | 13.9                                                  | 12.5                  | 41.7                   | 19.3                            |
| 94   | Shenzhen       | 28.6             | 46.9                   | 23.5                                               | 59.3                                                  | 30.2                  | 17.0                   | 38.9                            |
| 95   | Delhi          | 28.1             | n/a                    | n/a                                                | 55.8                                                  | 8.8                   | 13.7                   | 0.0                             |
| 96   | Mumbai         | 27.0             | n/a                    | n/a                                                | 65.6                                                  | 2.9                   | 10.7                   | 19.5                            |
| 97   | Lima           | 26.8             | 0.0                    | 22.9                                               | 22.1                                                  | 12.6                  | 60.7                   | 31.5                            |
| 98   | Manila         | 26.4             | n/a                    | n/a                                                | 44.2                                                  | 10.3                  | 0.0                    | 17.0                            |
| 99   | Belgrade       | 26.2             | 15.2                   | 55.8                                               | 0.0                                                   | 17.7                  | 29.4                   | 44.9                            |
| 100  | Jakarta        | 26.2             | n/a                    | n/a                                                | 32.4                                                  | 6.0                   | 55.1                   | 24.2                            |
| 101  | Zhengzhou      | 25.1             | 21.9                   | n/a                                                | 13.9                                                  | 11.0                  | n/a                    | 13.3                            |
| 102  | Brasilia       | 25.0             | n/a                    | 13.0                                               | 13.9                                                  | 32.2                  | 44.6                   | 17.0                            |
| 103  | Wuhan          | 24.6             | 36.4                   | n/a                                                | 27.9                                                  | 19.0                  | 25.1                   | 21.9                            |
| 104  | Tianjin        | 24.3             | 60.4                   | 0.0                                                | 27.9                                                  | 20.5                  | 20.6                   | 19.7                            |
| 105  | Rio de Janeiro | 22.7             | n/a                    | 28.9                                               | 32.4                                                  | 10.2                  | 0.0                    | 38.9                            |
| 106  | Quito          | 22.4             | n/a                    | 0.0                                                | 0.0                                                   | 14.3                  | 59.1                   | 41.3                            |
| 107  | Johannesburg   | 21.9             | 29.1                   | 0.0                                                | 36.0                                                  | 12.5                  | 25.2                   | 23.5                            |
| 108  | Chongqing      | 21.6             | 27.7                   | n/a                                                | 27.9                                                  | 6.5                   | n/a                    | 25.5                            |
| 109  | Tunis          | 20.9             | n/a                    | 0.0                                                | 0.0                                                   | 17.0                  | 32.2                   | 22.4                            |
| 110  | Hanoi          | 19.0             | n/a                    | n/a                                                | 0.0                                                   | 7.1                   | 69.2                   | 19.9                            |
| 111  | Casablanca     | 17.9             | n/a                    | n/a                                                | 27.9                                                  | 5.2                   | 39.8                   | 38.3                            |
| 112  | Cape Town      | 17.6             | n/a                    | n/a                                                | 27.9                                                  | 10.1                  | 21.3                   | n/a                             |
| 113  | Cairo          | 15.3             | n/a                    | n/a                                                | 13.9                                                  | 3.8                   | 4.5                    | 0.5                             |
| 114  | Nairobi        | 12.6             | n/a                    | n/a                                                | 0.0                                                   | 0.0                   | 38.0                   | 44.9                            |

| 3. GROW                      |                              |                                             | 4. RETAIN                 |                             |                      | 5. BE GLOBAL                                   |                                                 |                                |                            |
|------------------------------|------------------------------|---------------------------------------------|---------------------------|-----------------------------|----------------------|------------------------------------------------|-------------------------------------------------|--------------------------------|----------------------------|
| 3.1<br>Major<br>universities | 3.2<br>Tertiary<br>enrolment | 3.3<br>Individuals<br>in social<br>networks | 4.1<br>Personal<br>safety | 4.2<br>Physician<br>density | 4.3<br>Affordability | 5.1<br>Workforce<br>with tertiary<br>education | 5.2<br>Population<br>with tertiary<br>education | 5.3<br>Airport<br>connectivity | 5.4<br>Presence<br>of IGOs |
| 75.6                         | 27.9                         | 49.3                                        | 33.2                      | 48.0                        | 15.6                 | n/a                                            | 11.4                                            | 90.9                           | 12.5                       |
| 21.4                         | 20.6                         | 100.0                                       | 88.4                      | 41.6                        | 34.8                 | 13.6                                           | n/a                                             | 78.8                           | 10.0                       |
| 11.9                         | 100.0                        | 35.8                                        | 73.5                      | 77.3                        | 26.6                 | 58.2                                           | 58.7                                            | 11.1                           | 21.0                       |
| 48.8                         | 48.9                         | 62.7                                        | 46.8                      | 36.8                        | 43.8                 | 40.7                                           | 48.3                                            | 17.2                           | 16.2                       |
| 24.0                         | 39.2                         | 20.9                                        | n/a                       | 48.0                        | n/a                  | 30.1                                           | 40.7                                            | 4.9                            | 0.0                        |
| 33.3                         | 48.9                         | 22.4                                        | 55.4                      | 100.0                       | 12.6                 | 75.9                                           | 100.0                                           | 14.1                           | 0.0                        |
| 27.9                         | 58.4                         | 20.9                                        | 35.7                      | 62.1                        | 23.6                 | 33.3                                           | 39.3                                            | 41.9                           | 81.4                       |
| 31.4                         | 26.3                         | 62.7                                        | 46.7                      | n/a                         | 9.6                  | 12.6                                           | 28.9                                            | 88.6                           | 57.8                       |
| 24.8                         | 40.4                         | 32.8                                        | 72.3                      | 75.2                        | 20.9                 | 59.9                                           | 65.9                                            | 3.0                            | 45.3                       |
| 25.9                         | 39.7                         | 50.7                                        | 42.5                      | 19.2                        | 20.3                 | 36.0                                           | 36.7                                            | 85.0                           | 11.3                       |
| 51.3                         | 33.5                         | 50.7                                        | 34.1                      | 19.2                        | 51.1                 | 43.9                                           | 52.6                                            | 11.3                           | 0.0                        |
| 13.4                         | 40.9                         | 41.8                                        | 59.6                      | 88.0                        | 25.9                 | 47.1                                           | 54.8                                            | 5.1                            | 57.6                       |
| 11.9                         | 36.0                         | 11.9                                        | 52.4                      | 34.4                        | 100.0                | 48.9                                           | 54.0                                            | 4.5                            | 0.0                        |
| 50.9                         | 48.1                         | 23.9                                        | 49.5                      | 55.9                        | 56.2                 | 23.9                                           | 32.9                                            | 7.0                            | 0.0                        |
| 67.6                         | 27.9                         | 49.3                                        | 37.0                      | 27.2                        | 12.6                 | n/a                                            | 11.4                                            | 100.0                          | 3.5                        |
| 38.9                         | 37.1                         | 16.4                                        | 49.8                      | 47.5                        | 21.7                 | 24.1                                           | 31.5                                            | 39.1                           | 0.0                        |
| 21.5                         | 51.4                         | 23.9                                        | 75.3                      | 48.5                        | 35.7                 | 29.9                                           | 40.3                                            | 0.0                            | 0.0                        |
| 40.0                         | 37.2                         | 35.8                                        | n/a                       | 20.8                        | n/a                  | 70.1                                           | 47.9                                            | 9.9                            | 0.0                        |
| 56.2                         | 25.2                         | 64.2                                        | 17.7                      | n/a                         | 33.8                 | 25.9                                           | 24.6                                            | 12.2                           | 52.3                       |
| 46.5                         | 51.4                         | 65.7                                        | 24.7                      | 41.1                        | 38.6                 | 18.7                                           | n/a                                             | 20.2                           | 42.2                       |
| 11.9                         | 62.1                         | 37.3                                        | 49.8                      | 58.7                        | 32.7                 | 57.3                                           | 64.0                                            | 5.4                            | 35.8                       |
| 27.5                         | 35.3                         | 19.4                                        | 30.7                      | 46.3                        | 63.6                 | 18.9                                           | 27.5                                            | 3.3                            | 49.7                       |
| 11.9                         | 39.9                         | 25.4                                        | 77.9                      | 42.2                        | 42.8                 | 32.5                                           | 37.0                                            | 2.4                            | 48.9                       |
| 0.0                          | 24.6                         | 56.7                                        | 70.9                      | 50.1                        | 29.7                 | 34.1                                           | 37.5                                            | 10.4                           | 36.0                       |
| 74.9                         | 27.9                         | 49.3                                        | n/a                       | 28.8                        | n/a                  | n/a                                            | 11.4                                            | 31.5                           | 0.0                        |
| 18.1                         | 52.5                         | 19.4                                        | 64.9                      | 27.8                        | 30.8                 | 50.7                                           | 54.3                                            | 4.8                            | 0.0                        |
| 11.9                         | 18.0                         | 98.5                                        | 61.2                      | 20.8                        | 54.3                 | 18.1                                           | 19.7                                            | 11.9                           | 0.0                        |
| 36.9                         | 34.4                         | 46.3                                        | 25.8                      | 49.6                        | 7.2                  | 34.4                                           | 29.9                                            | 18.9                           | 14.0                       |
| 43.8                         | 54.3                         | 67.2                                        | 41.7                      | 20.8                        | 24.6                 | 14.4                                           | 27.7                                            | 18.8                           | 35.9                       |
| 31.4                         | 27.9                         | 49.3                                        | 25.1                      | 20.8                        | 46.9                 | n/a                                            | 11.4                                            | 58.7                           | 0.0                        |
| 45.8                         | 29.3                         | 44.8                                        | 10.7                      | 28.8                        | 6.5                  | 18.4                                           | 18.9                                            | 53.2                           | 2.3                        |
| 52.2                         | 14.4                         | 0.0                                         | 45.8                      | n/a                         | 89.7                 | 1.7                                            | 13.3                                            | 22.1                           | 3.2                        |
| 18.3                         | 32.4                         | 68.7                                        | 35.1                      | 100.0                       | 8.8                  | 7.0                                            | 17.6                                            | 1.5                            | 68.3                       |
| 35.2                         | 20.6                         | 47.8                                        | 16.9                      | 0.0                         | 20.1                 | 14.6                                           | 24.2                                            | 39.7                           | 19.2                       |
| 37.0                         | 27.9                         | 49.3                                        | 88.8                      | 20.8                        | 50.9                 | n/a                                            | 11.4                                            | 37.2                           | 0.0                        |
| 19.0                         | 27.9                         | 49.3                                        | 74.1                      | 24.0                        | 53.6                 | n/a                                            | 11.4                                            | 44.3                           | 0.0                        |
| 0.0                          | 27.9                         | 49.3                                        | 28.7                      | 20.8                        | 34.6                 | n/a                                            | 11.4                                            | 40.5                           | 0.0                        |
| 31.6                         | 14.4                         | 0.0                                         | 29.5                      | 21.6                        | 70.9                 | 1.7                                            | 13.3                                            | 56.5                           | 13.9                       |
| 32.7                         | 14.4                         | 0.0                                         | 51.1                      | 13.1                        | 19.4                 | 1.7                                            | 13.3                                            | 42.0                           | 1.3                        |
| 15.9                         | n/a                          | 53.7                                        | 15.2                      | 49.9                        | 0.2                  | 38.4                                           | 32.2                                            | 18.7                           | 20.3                       |
| 21.2                         | 19.7                         | 46.3                                        | 29.7                      | n/a                         | 9.9                  | 29.5                                           | 42.2                                            | 37.3                           | 9.5                        |
| 11.9                         | 36.6                         | 13.4                                        | 60.3                      | n/a                         | 13.5                 | 28.6                                           | 30.8                                            | 4.4                            | 13.5                       |
| 28.3                         | 15.0                         | 25.4                                        | 36.6                      | n/a                         | 2.2                  | 5.7                                            | 12.3                                            | 61.2                           | 32.6                       |
| 0.0                          | 27.9                         | 49.3                                        | 76.2                      | 19.2                        | 80.4                 | n/a                                            | 11.4                                            | 21.4                           | 0.0                        |
| 16.4                         | 29.3                         | 44.8                                        | 23.1                      | 46.6                        | 23.2                 | 18.4                                           | 18.9                                            | 14.8                           | 25.0                       |
| 36.0                         | 27.9                         | 49.3                                        | n/a                       | 20.8                        | n/a                  | n/a                                            | 11.4                                            | 20.4                           | 0.0                        |
| 32.0                         | 27.9                         | 49.3                                        | n/a                       | 25.6                        | n/a                  | n/a                                            | 11.4                                            | 18.5                           | 0.0                        |
| 22.3                         | 29.3                         | 44.8                                        | 2.0                       | 45.1                        | 4.8                  | 18.4                                           | 18.9                                            | 22.5                           | 7.8                        |
| 14.9                         | 26.1                         | 50.7                                        | 36.8                      | 24.7                        | 10.2                 | 11.3                                           | 19.7                                            | 4.0                            | 41.1                       |
| 28.1                         | 9.9                          | 0.0                                         | 0.0                       | n/a                         | 85.3                 | 12.5                                           | 9.5                                             | 18.6                           | 6.6                        |
| 11.9                         | 27.9                         | 49.3                                        | n/a                       | 19.2                        | n/a                  | n/a                                            | 11.4                                            | 34.3                           | 0.0                        |
| 0.0                          | 18.0                         | 44.8                                        | 59.9                      | 16.0                        | 10.6                 | 18.5                                           | 17.5                                            | 4.7                            | 82.0                       |
| 11.9                         | 15.2                         | 37.3                                        | 48.5                      | n/a                         | 14.7                 | 5.4                                            | 7.8                                             | 20.2                           | 5.1                        |
| 0.0                          | 17.6                         | 17.9                                        | 36.8                      | 8.4                         | 0.0                  | 0.0                                            | n/a                                             | 2.9                            | 18.6                       |
| 30.3                         | 9.9                          | 0.0                                         | 13.3                      | n/a                         | 33.3                 | 12.5                                           | 9.5                                             | 9.2                            | 0.0                        |
| 24.4                         | 19.1                         | 11.9                                        | 35.4                      | n/a                         | 5.0                  | 17.6                                           | 19.0                                            | 1.2                            | 45.3                       |
| 11.9                         | 0.0                          | 0.0                                         | 20.8                      | n/a                         | 0.5                  | n/a                                            | 0.0                                             | 5.9                            | 56.3                       |

Note: IGO = intergovernmental organisation; n/a = not available.

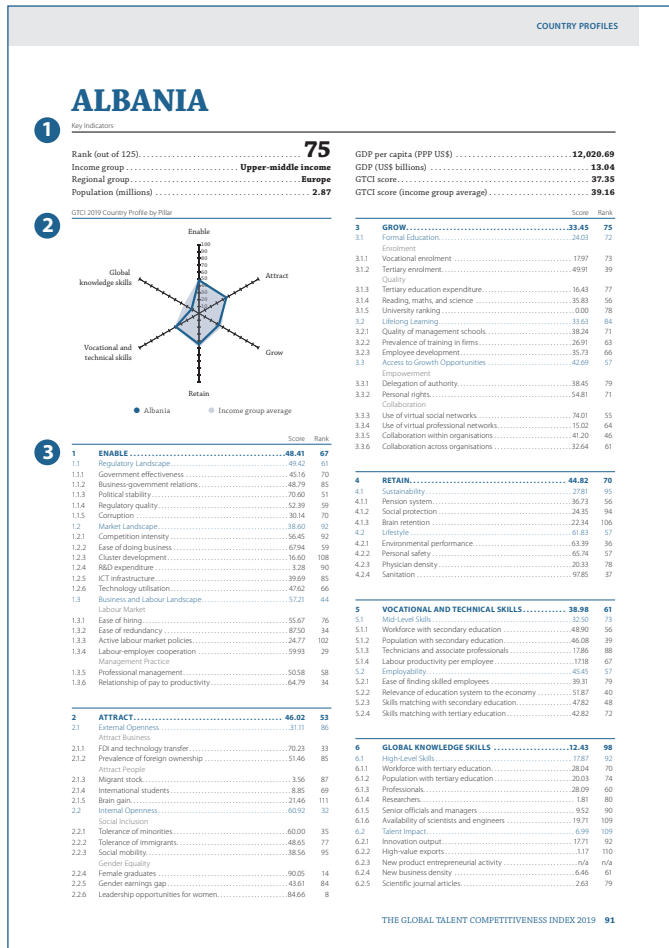




# Country Profiles



# How to Read the Country Profiles



**1** The first section introduces the country's key indicators. It comprises its rank within the GTCI (out of 125 countries), its income group (based on the World Bank's Income Group Classification as of July 2018), and its regional group (based on the United Nations' sub-regional groups). Additionally, basic country statistics are presented. These include population (in millions), GDP per capita (PPP US\$), and GDP (current US\$ in billions) from the World Bank's World Development Indicators. Finally, it presents the country's GTCI score and income group average GTCI score.

**2** The second section presents a radar chart that outlines the respective country's performance along the six pillars of the GTCI and its position with respect to its income group peers. The dark blue line plots the country's score on each of the six pillars, while the shaded area represents the average scores for its corresponding income group.

**3** The third section lays out the country's normalised scores and ranks across all pillars, sub-pillars, and variables. The pillars are identified by a bold single digit notation (e.g., 1 ENABLE) and sub-pillars by a two-digit notation (e.g., 1.1 Regulatory Landscape). Under selected sub-pillars, components are provided in grey. There are no values attached to the components, as they only contextualise the theoretical framework. The 68 variables are indicated by a three-digit notation (e.g., 1.1.1 Government effectiveness).

For more information about variable definitions and the method of calculation, please refer to the Sources and Definitions and Technical Notes sections in the Appendices.

The country profiles provide more granular information on how each of the 125 countries performs in the various dimensions of the Global Talent Competitiveness Index (GTCI).

Each country profile consists of three parts:

- 1** Key indicators,
- 2** Radar chart, and
- 3** Scores and Ranks.



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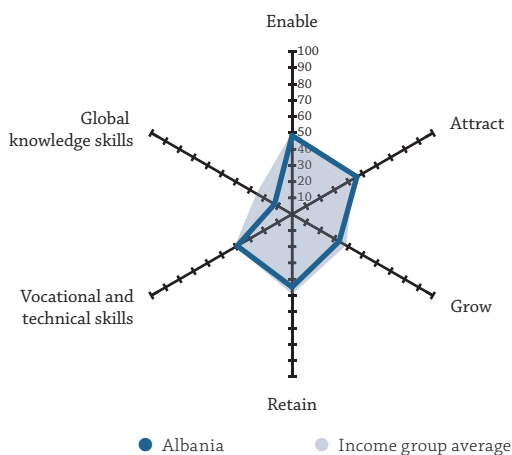


# ALBANIA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>75</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>2.87</b>                |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>48.41</b> | <b>67</b> |
| 1.1 Regulatory Landscape.....                  | 49.42        | 61        |
| 1.1.1 Government effectiveness.....            | 45.16        | 70        |
| 1.1.2 Business-government relations.....       | 48.79        | 85        |
| 1.1.3 Political stability.....                 | 70.60        | 51        |
| 1.1.4 Regulatory quality.....                  | 52.39        | 59        |
| 1.1.5 Corruption.....                          | 30.14        | 70        |
| 1.2 Market Landscape.....                      | 38.60        | 92        |
| 1.2.1 Competition intensity.....               | 56.45        | 92        |
| 1.2.2 Ease of doing business.....              | 67.94        | 59        |
| 1.2.3 Cluster development.....                 | 16.60        | 108       |
| 1.2.4 R&D expenditure.....                     | 3.28         | 90        |
| 1.2.5 ICT infrastructure.....                  | 39.69        | 85        |
| 1.2.6 Technology utilisation.....              | 47.62        | 66        |
| 1.3 Business and Labour Landscape.....         | 57.21        | 44        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 55.67        | 76        |
| 1.3.2 Ease of redundancy.....                  | 87.50        | 34        |
| 1.3.3 Active labour market policies.....       | 24.77        | 102       |
| 1.3.4 Labour-employer cooperation.....         | 59.93        | 29        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 50.58        | 58        |
| 1.3.6 Relationship of pay to productivity..... | 64.79        | 34        |
| <b>2 ATTRACT.....</b>                          | <b>46.02</b> | <b>53</b> |
| 2.1 External Openness.....                     | 31.11        | 86        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 70.23        | 33        |
| 2.1.2 Prevalence of foreign ownership.....     | 51.46        | 85        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 3.56         | 87        |
| 2.1.4 International students.....              | 8.85         | 69        |
| 2.1.5 Brain gain.....                          | 21.46        | 111       |
| 2.2 Internal Openness.....                     | 60.92        | 32        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 60.00        | 35        |
| 2.2.2 Tolerance of immigrants.....             | 48.65        | 77        |
| 2.2.3 Social mobility.....                     | 38.56        | 95        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 90.05        | 14        |
| 2.2.5 Gender earnings gap.....                 | 43.61        | 84        |
| 2.2.6 Leadership opportunities for women.....  | 84.66        | 8         |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>12,020.69</b> |
| GDP (US\$ billions).....               | <b>13.04</b>     |
| GTCI score.....                        | <b>37.35</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>33.45</b> | <b>75</b> |
| 3.1 Formal Education.....                       | 24.03        | 72        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 17.97        | 73        |
| 3.1.2 Tertiary enrolment.....                   | 49.91        | 39        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 16.43        | 77        |
| 3.1.4 Reading, maths, and science.....          | 35.83        | 56        |
| 3.1.5 University ranking.....                   | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 33.63        | 84        |
| 3.2.1 Quality of management schools.....        | 38.24        | 71        |
| 3.2.2 Prevalence of training in firms.....      | 26.91        | 63        |
| 3.2.3 Employee development.....                 | 35.73        | 66        |
| 3.3 Access to Growth Opportunities.....         | 42.69        | 57        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 38.45        | 79        |
| 3.3.2 Personal rights.....                      | 54.81        | 71        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 74.01        | 55        |
| 3.3.4 Use of virtual professional networks..... | 15.02        | 64        |
| 3.3.5 Collaboration within organisations.....   | 41.20        | 46        |
| 3.3.6 Collaboration across organisations.....   | 32.64        | 61        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>44.82</b> | <b>70</b> |
| 4.1 Sustainability.....              | 27.81        | 95        |
| 4.1.1 Pension system.....            | 36.73        | 56        |
| 4.1.2 Social protection.....         | 24.35        | 94        |
| 4.1.3 Brain retention.....           | 22.34        | 106       |
| 4.2 Lifestyle.....                   | 61.83        | 57        |
| 4.2.1 Environmental performance..... | 63.39        | 36        |
| 4.2.2 Personal safety.....           | 65.74        | 57        |
| 4.2.3 Physician density.....         | 20.33        | 78        |
| 4.2.4 Sanitation.....                | 97.85        | 37        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>38.98</b> | <b>61</b> |
| 5.1 Mid-Level Skills.....                               | 32.50        | 73        |
| 5.1.1 Workforce with secondary education.....           | 48.90        | 56        |
| 5.1.2 Population with secondary education.....          | 46.08        | 39        |
| 5.1.3 Technicians and associate professionals.....      | 17.86        | 88        |
| 5.1.4 Labour productivity per employee.....             | 17.18        | 67        |
| 5.2 Employability.....                                  | 45.45        | 57        |
| 5.2.1 Ease of finding skilled employees.....            | 39.31        | 79        |
| 5.2.2 Relevance of education system to the economy..... | 51.87        | 40        |
| 5.2.3 Skills matching with secondary education.....     | 47.82        | 48        |
| 5.2.4 Skills matching with tertiary education.....      | 42.82        | 72        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>12.43</b> | <b>98</b> |
| 6.1 High-Level Skills.....                          | 17.87        | 92        |
| 6.1.1 Workforce with tertiary education.....        | 28.04        | 70        |
| 6.1.2 Population with tertiary education.....       | 20.03        | 74        |
| 6.1.3 Professionals.....                            | 28.09        | 60        |
| 6.1.4 Researchers.....                              | 1.81         | 80        |
| 6.1.5 Senior officials and managers.....            | 9.52         | 90        |
| 6.1.6 Availability of scientists and engineers..... | 19.71        | 109       |
| 6.2 Talent Impact.....                              | 6.99         | 109       |
| 6.2.1 Innovation output.....                        | 17.71        | 92        |
| 6.2.2 High-value exports.....                       | 1.17         | 110       |
| 6.2.3 New product entrepreneurial activity.....     | n/a          | n/a       |
| 6.2.4 New business density.....                     | 6.46         | 61        |
| 6.2.5 Scientific journal articles.....              | 2.63         | 79        |

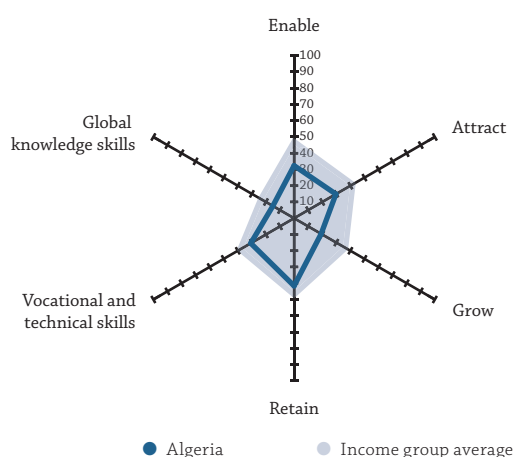
# ALGERIA

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>105</b>                              |
| Income group.....          | <b>Upper-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>41.32</b>                            |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>15,275.37</b> |
| GDP (US\$ billions) .....               | <b>170.37</b>    |
| GTCI score.....                         | <b>28.13</b>     |
| GTCI score (income group average) ..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 32.37 114</b>                 |       |      |
| 1.1 Regulatory Landscape.....                  | 31.71 | 111  |
| 1.1.1 Government effectiveness .....           | 31.76 | 94   |
| 1.1.2 Business-government relations .....      | 45.47 | 93   |
| 1.1.3 Political stability .....                | 38.19 | 111  |
| 1.1.4 Regulatory quality .....                 | 19.86 | 120  |
| 1.1.5 Corruption .....                         | 23.29 | 87   |
| 1.2 Market Landscape.....                      | 31.39 | 112  |
| 1.2.1 Competition intensity .....              | 37.77 | 122  |
| 1.2.2 Ease of doing business .....             | 28.45 | 120  |
| 1.2.3 Cluster development .....                | 18.83 | 100  |
| 1.2.4 R&D expenditure .....                    | n/a   | n/a  |
| 1.2.5 ICT infrastructure .....                 | 44.02 | 78   |
| 1.2.6 Technology utilisation .....             | 27.87 | 115  |
| 1.3 Business and Labour Landscape.....         | 34.02 | 113  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 55.67 | 76   |
| 1.3.2 Ease of redundancy .....                 | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 30.63 | 86   |
| 1.3.4 Labour-employer cooperation .....        | 27.45 | 99   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 11.85 | 124  |
| 1.3.6 Relationship of pay to productivity..... | 28.54 | 110  |
| <b>2 ATTRACT..... 29.70 117</b>                |       |      |
| 2.1 External Openness .....                    | 17.48 | 122  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 38.25 | 107  |
| 2.1.2 Prevalence of foreign ownership .....    | 28.93 | 116  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 1.10  | 107  |
| 2.1.4 International students.....              | 2.38  | 83   |
| 2.1.5 Brain gain.....                          | 16.74 | 116  |
| 2.2 Internal Openness.....                     | 41.92 | 99   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 22.35 | 96   |
| 2.2.2 Tolerance of immigrants.....             | 43.24 | 84   |
| 2.2.3 Social mobility.....                     | 38.21 | 97   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | 90.93 | 12   |
| 2.2.5 Gender earnings gap .....                | 2.39  | 119  |
| 2.2.6 Leadership opportunities for women.....  | 54.40 | 41   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 19.22 121</b>                    |       |      |
| 3.1 Formal Education.....                       | 17.96 | 88   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 17.33 | 74   |
| 3.1.2 Tertiary enrolment.....                   | 34.59 | 64   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 27.18 | 39   |
| 3.1.4 Reading, maths, and science .....         | 10.68 | 66   |
| 3.1.5 University ranking .....                  | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 18.99 | 121  |
| 3.2.1 Quality of management schools.....        | 23.95 | 106  |
| 3.2.2 Prevalence of training in firms.....      | n/a   | n/a  |
| 3.2.3 Employee development.....                 | 14.04 | 121  |
| 3.3 Access to Growth Opportunities .....        | 20.71 | 120  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 10.05 | 123  |
| 3.3.2 Personal rights.....                      | 25.40 | 103  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 59.64 | 90   |
| 3.3.4 Use of virtual professional networks..... | 7.01  | 85   |
| 3.3.5 Collaboration within organisations .....  | 10.07 | 121  |
| 3.3.6 Collaboration across organisations .....  | 12.11 | 111  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 41.62 83</b>        |       |     |
| 4.1 Sustainability .....             | 31.04 | 87  |
| 4.1.1 Pension system.....            | 35.71 | 58  |
| 4.1.2 Social protection .....        | 38.31 | 66  |
| 4.1.3 Brain retention .....          | 19.08 | 113 |
| 4.2 Lifestyle.....                   | 52.20 | 80  |
| 4.2.1 Environmental performance..... | 49.59 | 75  |
| 4.2.2 Personal safety .....          | 54.35 | 78  |
| 4.2.3 Physician density .....        | 18.82 | 80  |
| 4.2.4 Sanitation .....               | 86.02 | 75  |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 30.78 87</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 30.15 | 77  |
| 5.1.1 Workforce with secondary education .....           | 47.97 | 58  |
| 5.1.2 Population with secondary education .....          | 24.54 | 74  |
| 5.1.3 Technicians and associate professionals .....      | 16.96 | 90  |
| 5.1.4 Labour productivity per employee.....              | 31.12 | 49  |
| 5.2 Employability.....                                   | 31.41 | 92  |
| 5.2.1 Ease of finding skilled employees .....            | 42.90 | 72  |
| 5.2.2 Relevance of education system to the economy ..... | 24.67 | 91  |
| 5.2.3 Skills matching with secondary education.....      | 25.90 | 110 |
| 5.2.4 Skills matching with tertiary education .....      | 32.17 | 91  |

|                                                      |              |           |
|------------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>15.09</b> | <b>89</b> |
| 6.1 High-Level Skills .....                          | 24.23        | 75        |
| 6.1.1 Workforce with tertiary education .....        | 34.31        | 57        |
| 6.1.2 Population with tertiary education .....       | 11.71        | 89        |
| 6.1.3 Professionals.....                             | 27.25        | 62        |
| 6.1.4 Researchers.....                               | n/a          | n/a       |
| 6.1.5 Senior officials and managers .....            | 14.88        | 72        |
| 6.1.6 Availability of scientists and engineers ..... | 32.97        | 81        |
| 6.2 Talent Impact.....                               | 5.96         | 113       |
| 6.2.1 Innovation output.....                         | 10.42        | 112       |
| 6.2.2 High-value exports .....                       | 0.62         | 116       |
| 6.2.3 New product entrepreneurial activity .....     | 11.75        | 79        |
| 6.2.4 New business density .....                     | 2.75         | 79        |
| 6.2.5 Scientific journal articles.....               | 4.28         | 73        |

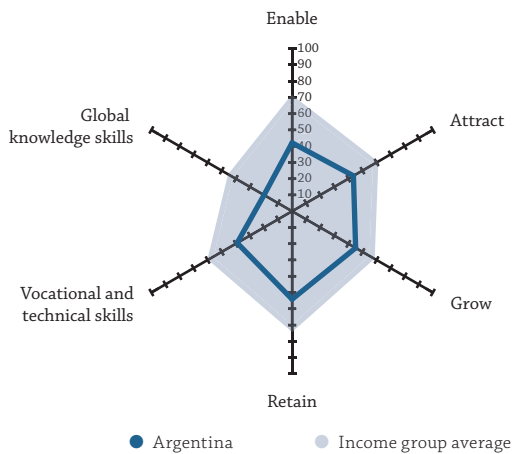


# ARGENTINA

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>60</b>                              |
| Income group.....          | <b>High income</b>                     |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>44.27</b>                           |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 42.08 88</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 40.04  | 93   |
| 1.1.1 Government effectiveness.....            | 49.63  | 58   |
| 1.1.2 Business-government relations.....       | 12.80  | 123  |
| 1.1.3 Political stability.....                 | 69.68  | 52   |
| 1.1.4 Regulatory quality.....                  | 36.60  | 96   |
| 1.1.5 Corruption.....                          | 31.51  | 68   |
| 1.2 Market Landscape.....                      | 39.41  | 90   |
| 1.2.1 Competition intensity.....               | 44.67  | 115  |
| 1.2.2 Ease of doing business.....              | 48.92  | 96   |
| 1.2.3 Cluster development.....                 | 22.95  | 96   |
| 1.2.4 R&D expenditure.....                     | 14.50  | 49   |
| 1.2.5 ICT infrastructure.....                  | 66.03  | 56   |
| 1.2.6 Technology utilisation.....              | 39.36  | 95   |
| 1.3 Business and Labour Landscape.....         | 46.78  | 84   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 44.33  | 99   |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 31.13  | 85   |
| 1.3.4 Labour-employer cooperation.....         | 22.96  | 105  |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 53.28  | 52   |
| 1.3.6 Relationship of pay to productivity..... | 28.95  | 108  |
| <b>2 ATTRACT..... 43.59 60</b>                 |        |      |
| 2.1 External Openness.....                     | 33.50  | 80   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 35.24  | 112  |
| 2.1.2 Prevalence of foreign ownership.....     | 55.08  | 74   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 9.97   | 55   |
| 2.1.4 International students.....              | n/a    | n/a  |
| 2.1.5 Brain gain.....                          | 33.70  | 86   |
| 2.2 Internal Openness.....                     | 53.68  | 47   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 60.00  | 35   |
| 2.2.2 Tolerance of immigrants.....             | 77.03  | 22   |
| 2.2.3 Social mobility.....                     | 31.75  | 113  |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 93.10  | 8    |
| 2.2.5 Gender earnings gap.....                 | 38.47  | 97   |
| 2.2.6 Leadership opportunities for women.....  | 21.71  | 101  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>20,786.68</b> |
| GDP (US\$ billions).....               | <b>637.59</b>    |
| GTCI score.....                        | <b>40.65</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 45.14 37</b>                     |       |      |
| 3.1 Formal Education.....                       | 44.92 | 34   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | n/a   | n/a  |
| 3.1.2 Tertiary enrolment.....                   | 70.15 | 8    |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 28.08 | 37   |
| 3.1.4 Reading, maths, and science.....          | 39.12 | 50   |
| 3.1.5 University ranking.....                   | 42.34 | 28   |
| 3.2 Lifelong Learning.....                      | 45.83 | 52   |
| 3.2.1 Quality of management schools.....        | 56.11 | 36   |
| 3.2.2 Prevalence of training in firms.....      | 48.55 | 32   |
| 3.2.3 Employee development.....                 | 32.84 | 75   |
| 3.3 Access to Growth Opportunities.....         | 44.65 | 48   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 46.76 | 61   |
| 3.3.2 Personal rights.....                      | 63.26 | 55   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 70.84 | 63   |
| 3.3.4 Use of virtual professional networks..... | 30.81 | 29   |
| 3.3.5 Collaboration within organisations.....   | 24.29 | 98   |
| 3.3.6 Collaboration across organisations.....   | 31.94 | 65   |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 54.15 55</b>        |       |    |
| 4.1 Sustainability.....              | 42.93 | 61 |
| 4.1.1 Pension system.....            | 40.82 | 54 |
| 4.1.2 Social protection.....         | 39.30 | 63 |
| 4.1.3 Brain retention.....           | 48.67 | 46 |
| 4.2 Lifestyle.....                   | 65.37 | 47 |
| 4.2.1 Environmental performance..... | 53.13 | 64 |
| 4.2.2 Personal safety.....           | 51.36 | 89 |
| 4.2.3 Physician density.....         | 62.35 | 15 |
| 4.2.4 Sanitation.....                | 94.62 | 53 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 39.02 59</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 35.33 | 69  |
| 5.1.1 Workforce with secondary education.....           | 48.90 | 56  |
| 5.1.2 Population with secondary education.....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals.....      | 32.59 | 65  |
| 5.1.4 Labour productivity per employee.....             | 24.51 | 55  |
| 5.2 Employability.....                                  | 42.72 | 63  |
| 5.2.1 Ease of finding skilled employees.....            | 54.87 | 52  |
| 5.2.2 Relevance of education system to the economy..... | 23.68 | 95  |
| 5.2.3 Skills matching with secondary education.....     | 35.57 | 80  |
| 5.2.4 Skills matching with tertiary education.....      | 56.74 | 38  |

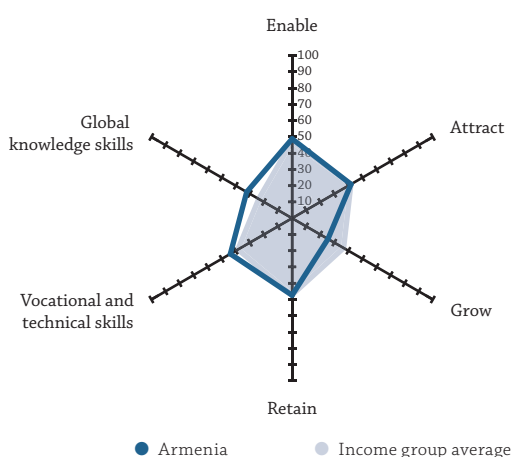
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|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 19.94 77</b>      |       |     |
| 6.1 High-Level Skills.....                          | 27.07 | 68  |
| 6.1.1 Workforce with tertiary education.....        | 29.23 | 65  |
| 6.1.2 Population with tertiary education.....       | n/a   | n/a |
| 6.1.3 Professionals.....                            | 25.00 | 66  |
| 6.1.4 Researchers.....                              | 14.71 | 44  |
| 6.1.5 Senior officials and managers.....            | 27.38 | 47  |
| 6.1.6 Availability of scientists and engineers..... | 39.05 | 64  |
| 6.2 Talent Impact.....                              | 12.81 | 83  |
| 6.2.1 Innovation output.....                        | 21.70 | 79  |
| 6.2.2 High-value exports.....                       | 15.95 | 49  |
| 6.2.3 New product entrepreneurial activity.....     | 16.59 | 70  |
| 6.2.4 New business density.....                     | 2.02  | 85  |
| 6.2.5 Scientific journal articles.....              | 7.79  | 57  |

# ARMENIA

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>61</b>                               |
| Income group.....          | <b>Upper-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>2.93</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 48.86 65</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 44.55 | 81   |
| 1.1.1 Government effectiveness.....            | 41.44 | 75   |
| 1.1.2 Business-government relations.....       | 50.77 | 78   |
| 1.1.3 Political stability.....                 | 50.69 | 92   |
| 1.1.4 Regulatory quality.....                  | 53.83 | 55   |
| 1.1.5 Corruption.....                          | 26.03 | 83   |
| 1.2 Market Landscape.....                      | 47.41 | 66   |
| 1.2.1 Competition intensity.....               | 68.72 | 62   |
| 1.2.2 Ease of doing business.....              | 74.78 | 42   |
| 1.2.3 Cluster development.....                 | 28.19 | 89   |
| 1.2.4 R&D expenditure.....                     | 5.13  | 84   |
| 1.2.5 ICT infrastructure.....                  | 61.58 | 62   |
| 1.2.6 Technology utilisation.....              | 46.05 | 71   |
| 1.3 Business and Labour Landscape.....         | 54.61 | 55   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 55.67 | 76   |
| 1.3.2 Ease of redundancy.....                  | 87.50 | 34   |
| 1.3.3 Active labour market policies.....       | 33.76 | 77   |
| 1.3.4 Labour-employer cooperation.....         | 52.86 | 38   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 45.69 | 67   |
| 1.3.6 Relationship of pay to productivity..... | 52.18 | 58   |
| <b>2 ATTRACT..... 41.84 72</b>                 |       |      |
| 2.1 External Openness.....                     | 31.84 | 83   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 48.93 | 84   |
| 2.1.2 Prevalence of foreign ownership.....     | 43.55 | 97   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 13.32 | 49   |
| 2.1.4 International students.....              | 20.56 | 48   |
| 2.1.5 Brain gain.....                          | 32.85 | 88   |
| 2.2 Internal Openness.....                     | 51.85 | 54   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 49.41 | 51   |
| 2.2.2 Tolerance of immigrants.....             | 48.65 | 77   |
| 2.2.3 Social mobility.....                     | 40.43 | 87   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 73.18 | 55   |
| 2.2.5 Gender earnings gap.....                 | 45.76 | 83   |
| 2.2.6 Leadership opportunities for women.....  | 53.65 | 44   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>9,647.49</b> |
| GDP (US\$ billions).....               | <b>11.54</b>    |
| GTCI score.....                        | <b>39.95</b>    |
| GTCI score (income group average)..... | <b>39.16</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 25.50 101</b>                    |       |      |
| 3.1 Formal Education.....                       | 17.72 | 89   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 21.91 | 64   |
| 3.1.2 Tertiary enrolment.....                   | 41.55 | 50   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 7.42  | 101  |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 24.16 | 115  |
| 3.2.1 Quality of management schools.....        | 26.79 | 100  |
| 3.2.2 Prevalence of training in firms.....      | 16.89 | 81   |
| 3.2.3 Employee development.....                 | 28.81 | 90   |
| 3.3 Access to Growth Opportunities.....         | 34.63 | 89   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 33.58 | 96   |
| 3.3.2 Personal rights.....                      | 33.68 | 94   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 67.70 | 75   |
| 3.3.4 Use of virtual professional networks..... | 7.84  | 81   |
| 3.3.5 Collaboration within organisations.....   | 38.07 | 56   |
| 3.3.6 Collaboration across organisations.....   | 26.90 | 78   |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 47.40 65</b>        |       |    |
| 4.1 Sustainability.....              | 30.12 | 92 |
| 4.1.1 Pension system.....            | 30.61 | 64 |
| 4.1.2 Social protection.....         | 27.13 | 90 |
| 4.1.3 Brain retention.....           | 32.62 | 90 |
| 4.2 Lifestyle.....                   | 64.68 | 48 |
| 4.2.1 Environmental performance..... | 57.74 | 56 |
| 4.2.2 Personal safety.....           | 64.93 | 59 |
| 4.2.3 Physician density.....         | 44.65 | 42 |
| 4.2.4 Sanitation.....                | 91.40 | 66 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 43.86 50</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 50.82 | 37  |
| 5.1.1 Workforce with secondary education.....           | 88.66 | 6   |
| 5.1.2 Population with secondary education.....          | 58.77 | 25  |
| 5.1.3 Technicians and associate professionals.....      | 41.96 | 52  |
| 5.1.4 Labour productivity per employee.....             | 13.87 | 74  |
| 5.2 Employability.....                                  | 36.90 | 75  |
| 5.2.1 Ease of finding skilled employees.....            | 37.31 | 83  |
| 5.2.2 Relevance of education system to the economy..... | 40.74 | 53  |
| 5.2.3 Skills matching with secondary education.....     | 40.17 | 66  |
| 5.2.4 Skills matching with tertiary education.....      | 29.37 | 100 |

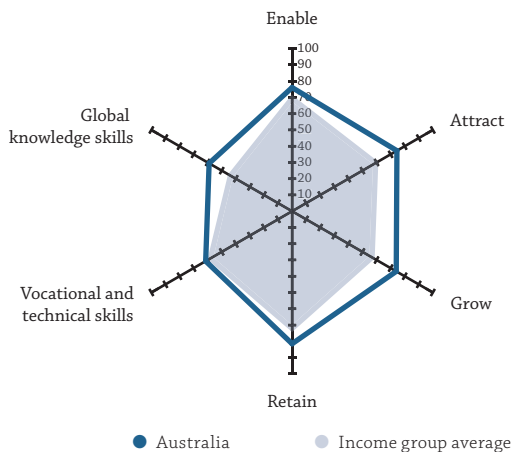
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|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 32.26 44</b>      |       |     |
| 6.1 High-Level Skills.....                          | 48.97 | 25  |
| 6.1.1 Workforce with tertiary education.....        | 43.80 | 38  |
| 6.1.2 Population with tertiary education.....       | 78.61 | 3   |
| 6.1.3 Professionals.....                            | 38.48 | 45  |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 34.52 | 37  |
| 6.1.6 Availability of scientists and engineers..... | 49.45 | 46  |
| 6.2 Talent Impact.....                              | 15.54 | 74  |
| 6.2.1 Innovation output.....                        | 35.98 | 49  |
| 6.2.2 High-value exports.....                       | 10.77 | 65  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 8.34  | 53  |
| 6.2.5 Scientific journal articles.....              | 7.09  | 59  |

# AUSTRALIA

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>12</b>                                     |
| Income group.....          | <b>High income</b>                            |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>24.60</b>                                  |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....76.10</b>                      | <b>19</b> |      |
| 1.1 Regulatory Landscape.....                  | 82.54     | 14   |
| 1.1.1 Government effectiveness.....            | 84.37     | 14   |
| 1.1.2 Business-government relations.....       | 64.68     | 39   |
| 1.1.3 Political stability.....                 | 86.81     | 19   |
| 1.1.4 Regulatory quality.....                  | 93.30     | 5    |
| 1.1.5 Corruption.....                          | 83.56     | 13   |
| 1.2 Market Landscape.....                      | 71.14     | 20   |
| 1.2.1 Competition intensity.....               | 90.91     | 6    |
| 1.2.2 Ease of doing business.....              | 88.49     | 12   |
| 1.2.3 Cluster development.....                 | 45.40     | 48   |
| 1.2.4 R&D expenditure.....                     | 45.16     | 19   |
| 1.2.5 ICT infrastructure.....                  | 80.41     | 23   |
| 1.2.6 Technology utilisation.....              | 76.48     | 24   |
| 1.3 Business and Labour Landscape.....         | 74.62     | 20   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 89.00     | 27   |
| 1.3.2 Ease of redundancy.....                  | 87.50     | 34   |
| 1.3.3 Active labour market policies.....       | 71.32     | 22   |
| 1.3.4 Labour-employer cooperation.....         | 39.43     | 67   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 93.66     | 6    |
| 1.3.6 Relationship of pay to productivity..... | 66.83     | 29   |
| <b>2 ATTRACT.....74.48</b>                     | <b>8</b>  |      |
| 2.1 External Openness.....                     | 74.98     | 9    |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 73.04     | 26   |
| 2.1.2 Prevalence of foreign ownership.....     | 84.04     | 14   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 59.37     | 12   |
| 2.1.4 International students.....              | 88.13     | 9    |
| 2.1.5 Brain gain.....                          | 70.33     | 16   |
| 2.2 Internal Openness.....                     | 73.98     | 10   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 67.06     | 23   |
| 2.2.2 Tolerance of immigrants.....             | 90.54     | 8    |
| 2.2.3 Social mobility.....                     | 92.36     | 6    |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 74.99     | 52   |
| 2.2.5 Gender earnings gap.....                 | 55.08     | 53   |
| 2.2.6 Leadership opportunities for women.....  | 63.84     | 24   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>47,046.67</b> |
| GDP (US\$ billions).....               | <b>1,323.42</b>  |
| GTCI score.....                        | <b>71.08</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....74.00</b>                         | <b>10</b> |      |
| 3.1 Formal Education.....                       | 73.75     | 1    |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 77.96     | 9    |
| 3.1.2 Tertiary enrolment.....                   | 100.00    | 1    |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 32.28     | 25   |
| 3.1.4 Reading, maths, and science.....          | 76.78     | 18   |
| 3.1.5 University ranking.....                   | 81.72     | 5    |
| 3.2 Lifelong Learning.....                      | 73.57     | 17   |
| 3.2.1 Quality of management schools.....        | 74.31     | 16   |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 72.83     | 20   |
| 3.3 Access to Growth Opportunities.....         | 74.67     | 17   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 85.44     | 9    |
| 3.3.2 Personal rights.....                      | 94.58     | 9    |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 83.46     | 28   |
| 3.3.4 Use of virtual professional networks..... | 76.41     | 9    |
| 3.3.5 Collaboration within organisations.....   | 68.50     | 23   |
| 3.3.6 Collaboration across organisations.....   | 39.61     | 42   |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....81.54</b>            | <b>12</b> |    |
| 4.1 Sustainability.....              | 80.81     | 15 |
| 4.1.1 Pension system.....            | 90.82     | 15 |
| 4.1.2 Social protection.....         | 82.68     | 14 |
| 4.1.3 Brain retention.....           | 68.93     | 22 |
| 4.2 Lifestyle.....                   | 82.27     | 13 |
| 4.2.1 Environmental performance..... | 77.83     | 21 |
| 4.2.2 Personal safety.....           | 95.49     | 13 |
| 4.2.3 Physician density.....         | 55.76     | 21 |
| 4.2.4 Sanitation.....                | 100.00    | 1  |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....61.40</b>      | <b>21</b> |    |
| 5.1 Mid-Level Skills.....                               | 51.83     | 33 |
| 5.1.1 Workforce with secondary education.....           | 52.92     | 44 |
| 5.1.2 Population with secondary education.....          | 41.65     | 48 |
| 5.1.3 Technicians and associate professionals.....      | 57.14     | 29 |
| 5.1.4 Labour productivity per employee.....             | 55.58     | 14 |
| 5.2 Employability.....                                  | 70.97     | 20 |
| 5.2.1 Ease of finding skilled employees.....            | 78.35     | 16 |
| 5.2.2 Relevance of education system to the economy..... | 71.63     | 16 |
| 5.2.3 Skills matching with secondary education.....     | 63.81     | 23 |
| 5.2.4 Skills matching with tertiary education.....      | 70.09     | 24 |

|                                                     |          |    |
|-----------------------------------------------------|----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....58.95</b>          | <b>8</b> |    |
| 6.1 High-Level Skills.....                          | 61.76    | 11 |
| 6.1.1 Workforce with tertiary education.....        | 58.31    | 21 |
| 6.1.2 Population with tertiary education.....       | 64.86    | 7  |
| 6.1.3 Professionals.....                            | 58.99    | 16 |
| 6.1.4 Researchers.....                              | 54.98    | 17 |
| 6.1.5 Senior officials and managers.....            | 66.67    | 8  |
| 6.1.6 Availability of scientists and engineers..... | 66.76    | 16 |
| 6.2 Talent Impact.....                              | 56.14    | 8  |
| 6.2.1 Innovation output.....                        | 51.33    | 30 |
| 6.2.2 High-value exports.....                       | 26.82    | 30 |
| 6.2.3 New product entrepreneurial activity.....     | 44.67    | 29 |
| 6.2.4 New business density.....                     | 74.70    | 6  |
| 6.2.5 Scientific journal articles.....              | 83.18    | 3  |

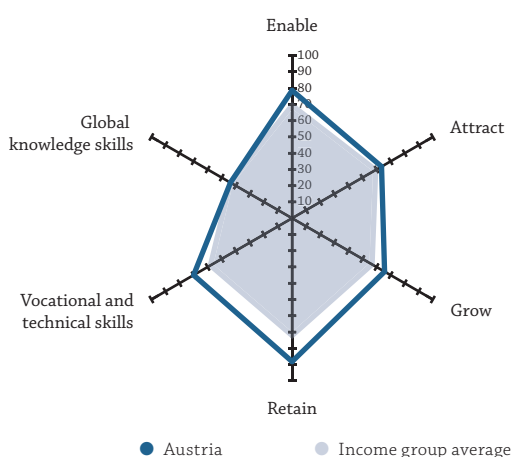
# AUSTRIA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>18</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>8.81</b>        |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>52,557.48</b> |
| GDP (US\$ billions) .....               | <b>416.60</b>    |
| GTCI score.....                         | <b>68.31</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 78.62 15</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 79.73 | 17   |
| 1.1.1 Government effectiveness .....           | 82.63 | 15   |
| 1.1.2 Business-government relations .....      | 69.32 | 32   |
| 1.1.3 Political stability .....                | 83.56 | 25   |
| 1.1.4 Regulatory quality .....                 | 82.30 | 17   |
| 1.1.5 Corruption .....                         | 80.82 | 15   |
| 1.2 Market Landscape.....                      | 80.16 | 11   |
| 1.2.1 Competition intensity .....              | 83.00 | 16   |
| 1.2.2 Ease of doing business .....             | 85.61 | 19   |
| 1.2.3 Cluster development .....                | 75.87 | 16   |
| 1.2.4 R&D expenditure .....                    | 72.52 | 6    |
| 1.2.5 ICT infrastructure .....                 | 85.24 | 14   |
| 1.2.6 Technology utilisation .....             | 78.72 | 19   |
| 1.3 Business and Labour Landscape.....         | 75.98 | 19   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 89.00 | 27   |
| 1.3.2 Ease of redundancy .....                 | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 93.15 | 3    |
| 1.3.4 Labour-employer cooperation .....        | 79.85 | 12   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 77.00 | 24   |
| 1.3.6 Relationship of pay to productivity..... | 66.86 | 28   |
| <b>2 ATTRACT..... 63.56 21</b>                 |       |      |
| 2.1 External Openness .....                    | 62.10 | 15   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 64.22 | 44   |
| 2.1.2 Prevalence of foreign ownership .....    | 71.02 | 38   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 39.17 | 18   |
| 2.1.4 International students.....              | 82.38 | 10   |
| 2.1.5 Brain gain.....                          | 53.71 | 38   |
| 2.2 Internal Openness.....                     | 65.02 | 22   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 68.24 | 21   |
| 2.2.2 Tolerance of immigrants.....             | 77.03 | 22   |
| 2.2.3 Social mobility.....                     | 83.99 | 14   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | 67.55 | 71   |
| 2.2.5 Gender earnings gap .....                | 43.13 | 86   |
| 2.2.6 Leadership opportunities for women.....  | 50.20 | 48   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 65.71 17</b>                     |       |      |
| 3.1 Formal Education.....                       | 59.61 | 11   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 73.34 | 11   |
| 3.1.2 Tertiary enrolment.....                   | 68.28 | 10   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 41.92 | 12   |
| 3.1.4 Reading, maths, and science .....         | 72.06 | 24   |
| 3.1.5 University ranking .....                  | 42.44 | 27   |
| 3.2 Lifelong Learning.....                      | 70.59 | 20   |
| 3.2.1 Quality of management schools.....        | 62.83 | 27   |
| 3.2.2 Prevalence of training in firms .....     | n/a   | n/a  |
| 3.2.3 Employee development.....                 | 78.34 | 16   |
| 3.3 Access to Growth Opportunities .....        | 66.92 | 19   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 76.35 | 19   |
| 3.3.2 Personal rights.....                      | 95.21 | 6    |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 71.54 | 61   |
| 3.3.4 Use of virtual professional networks..... | 19.26 | 51   |
| 3.3.5 Collaboration within organisations .....  | 79.75 | 13   |
| 3.3.6 Collaboration across organisations .....  | 59.44 | 23   |

|                                      |        |    |
|--------------------------------------|--------|----|
| <b>4 RETAIN..... 88.20 3</b>         |        |    |
| 4.1 Sustainability .....             | 84.36  | 8  |
| 4.1.1 Pension system.....            | 93.88  | 6  |
| 4.1.2 Social protection .....        | 97.17  | 2  |
| 4.1.3 Brain retention .....          | 62.02  | 34 |
| 4.2 Lifestyle .....                  | 92.05  | 1  |
| 4.2.1 Environmental performance..... | 85.91  | 8  |
| 4.2.2 Personal safety .....          | 98.71  | 7  |
| 4.2.3 Physician density .....        | 83.57  | 2  |
| 4.2.4 Sanitation .....               | 100.00 | 1  |

|                                                          |       |    |
|----------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 69.96 9</b>    |       |    |
| 5.1 Mid-Level Skills .....                               | 70.25 | 6  |
| 5.1.1 Workforce with secondary education .....           | 70.45 | 22 |
| 5.1.2 Population with secondary education .....          | 71.04 | 12 |
| 5.1.3 Technicians and associate professionals .....      | 85.27 | 6  |
| 5.1.4 Labour productivity per employee .....             | 54.24 | 16 |
| 5.2 Employability.....                                   | 69.67 | 22 |
| 5.2.1 Ease of finding skilled employees .....            | 76.32 | 18 |
| 5.2.2 Relevance of education system to the economy ..... | 50.40 | 42 |
| 5.2.3 Skills matching with secondary education.....      | 72.37 | 13 |
| 5.2.4 Skills matching with tertiary education .....      | 79.56 | 18 |

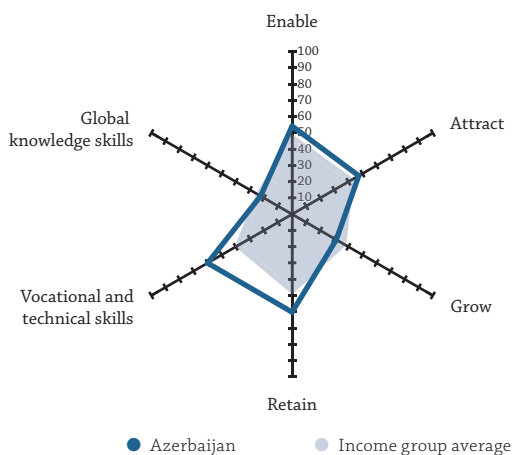
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|------------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS ..... 43.80 25</b>      |       |    |
| 6.1 High-Level Skills .....                          | 47.95 | 27 |
| 6.1.1 Workforce with tertiary education .....        | 50.47 | 29 |
| 6.1.2 Population with tertiary education .....       | 43.80 | 30 |
| 6.1.3 Professionals.....                             | 47.47 | 32 |
| 6.1.4 Researchers.....                               | 62.48 | 12 |
| 6.1.5 Senior officials and managers .....            | 27.38 | 47 |
| 6.1.6 Availability of scientists and engineers ..... | 56.07 | 34 |
| 6.2 Talent Impact.....                               | 39.66 | 28 |
| 6.2.1 Innovation output.....                         | 54.23 | 27 |
| 6.2.2 High-value exports .....                       | 27.79 | 28 |
| 6.2.3 New product entrepreneurial activity .....     | 57.22 | 13 |
| 6.2.4 New business density .....                     | 2.84  | 77 |
| 6.2.5 Scientific journal articles.....               | 56.23 | 17 |

# AZERBAIJAN

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>43</b>                               |
| Income group.....          | <b>Upper-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>9.86</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>54.21</b> | <b>48</b> |
| 1.1 Regulatory Landscape.....                  | 41.39        | 89        |
| 1.1.1 Government effectiveness.....            | 41.19        | 76        |
| 1.1.2 Business-government relations.....       | 59.60        | 62        |
| 1.1.3 Political stability.....                 | 44.44        | 102       |
| 1.1.4 Regulatory quality.....                  | 41.15        | 85        |
| 1.1.5 Corruption.....                          | 20.55        | 92        |
| 1.2 Market Landscape.....                      | 52.18        | 52        |
| 1.2.1 Competition intensity.....               | 54.94        | 99        |
| 1.2.2 Ease of doing business.....              | 70.62        | 52        |
| 1.2.3 Cluster development.....                 | 56.79        | 33        |
| 1.2.4 R&D expenditure.....                     | 4.52         | 86        |
| 1.2.5 ICT infrastructure.....                  | 62.85        | 60        |
| 1.2.6 Technology utilisation.....              | 63.33        | 42        |
| 1.3 Business and Labour Landscape.....         | 69.08        | 29        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 100.00       | 1         |
| 1.3.2 Ease of redundancy.....                  | 62.50        | 64        |
| 1.3.3 Active labour market policies.....       | 62.65        | 32        |
| 1.3.4 Labour-employer cooperation.....         | 58.77        | 30        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 55.01        | 43        |
| 1.3.6 Relationship of pay to productivity..... | 75.56        | 14        |
| <b>2 ATTRACT.....</b>                          | <b>47.36</b> | <b>44</b> |
| 2.1 External Openness.....                     | 44.68        | 42        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 71.99        | 28        |
| 2.1.2 Prevalence of foreign ownership.....     | 66.84        | 45        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 5.31         | 72        |
| 2.1.4 International students.....              | 10.00        | 65        |
| 2.1.5 Brain gain.....                          | 69.28        | 17        |
| 2.2 Internal Openness.....                     | 50.03        | 61        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 36.47        | 70        |
| 2.2.2 Tolerance of immigrants.....             | 48.65        | 77        |
| 2.2.3 Social mobility.....                     | 51.66        | 56        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 68.79        | 69        |
| 2.2.5 Gender earnings gap.....                 | 37.28        | 101       |
| 2.2.6 Leadership opportunities for women.....  | 57.36        | 34        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>17,398.16</b> |
| GDP (US\$ billions).....               | <b>40.75</b>     |
| GTCI score.....                        | <b>45.94</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>31.41</b> | <b>81</b> |
| 3.1 Formal Education.....                       | 13.59        | 99        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | n/a          | n/a       |
| 3.1.2 Tertiary enrolment.....                   | 21.85        | 82        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 7.80         | 99        |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 11.11        | 72        |
| 3.2 Lifelong Learning.....                      | 36.32        | 73        |
| 3.2.1 Quality of management schools.....        | 40.39        | 67        |
| 3.2.2 Prevalence of training in firms.....      | 22.16        | 73        |
| 3.2.3 Employee development.....                 | 46.41        | 46        |
| 3.3 Access to Growth Opportunities.....         | 44.31        | 49        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 49.97        | 50        |
| 3.3.2 Personal rights.....                      | 3.86         | 122       |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 85.22        | 24        |
| 3.3.4 Use of virtual professional networks..... | 3.52         | 96        |
| 3.3.5 Collaboration within organisations.....   | 57.81        | 26        |
| 3.3.6 Collaboration across organisations.....   | 65.49        | 19        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>60.25</b> | <b>41</b> |
| 4.1 Sustainability.....              | 52.99        | 37        |
| 4.1.1 Pension system.....            | 33.67        | 59        |
| 4.1.2 Social protection.....         | 58.27        | 33        |
| 4.1.3 Brain retention.....           | 67.04        | 25        |
| 4.2 Lifestyle.....                   | 67.51        | 43        |
| 4.2.1 Environmental performance..... | 58.18        | 52        |
| 4.2.2 Personal safety.....           | 69.42        | 52        |
| 4.2.3 Physician density.....         | 54.26        | 26        |
| 4.2.4 Sanitation.....                | 88.17        | 71        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>60.05</b> | <b>25</b> |
| 5.1 Mid-Level Skills.....                               | 58.00        | 27        |
| 5.1.1 Workforce with secondary education.....           | 89.30        | 5         |
| 5.1.2 Population with secondary education.....          | 83.45        | 4         |
| 5.1.3 Technicians and associate professionals.....      | 41.07        | 56        |
| 5.1.4 Labour productivity per employee.....             | 18.16        | 65        |
| 5.2 Employability.....                                  | 62.09        | 26        |
| 5.2.1 Ease of finding skilled employees.....            | 67.06        | 30        |
| 5.2.2 Relevance of education system to the economy..... | 54.73        | 33        |
| 5.2.3 Skills matching with secondary education.....     | 65.81        | 20        |
| 5.2.4 Skills matching with tertiary education.....      | 60.08        | 36        |

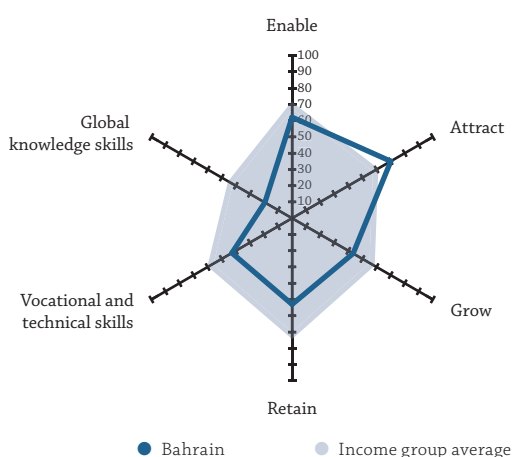
|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>22.37</b> | <b>68</b> |
| 6.1 High-Level Skills.....                          | 36.98        | 43        |
| 6.1.1 Workforce with tertiary education.....        | 40.57        | 43        |
| 6.1.2 Population with tertiary education.....       | 41.26        | 33        |
| 6.1.3 Professionals.....                            | 33.99        | 50        |
| 6.1.4 Researchers.....                              | n/a          | n/a       |
| 6.1.5 Senior officials and managers.....            | 6.55         | 99        |
| 6.1.6 Availability of scientists and engineers..... | 62.56        | 23        |
| 6.2 Talent Impact.....                              | 7.76         | 105       |
| 6.2.1 Innovation output.....                        | 20.43        | 85        |
| 6.2.2 High-value exports.....                       | 3.78         | 95        |
| 6.2.3 New product entrepreneurial activity.....     | n/a          | n/a       |
| 6.2.4 New business density.....                     | 4.92         | 68        |
| 6.2.5 Scientific journal articles.....              | 1.91         | 82        |

# BAHRAIN

Key Indicators

|                             |                                         |
|-----------------------------|-----------------------------------------|
| Rank (out of 125).....      | <b>40</b>                               |
| Income group .....          | <b>High income</b>                      |
| Regional group .....        | <b>Northern Africa and Western Asia</b> |
| Population (millions) ..... | <b>1.49</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>1 ENABLE.....62.13</b>                       | <b>33</b> |      |
| 1.1 Regulatory Landscape.....                   | 55.01     | 49   |
| 1.1.1 Government effectiveness .....            | 53.10     | 50   |
| 1.1.2 Business-government relations .....       | 87.42     | 10   |
| 1.1.3 Political stability .....                 | 44.68     | 101  |
| 1.1.4 Regulatory quality .....                  | 62.44     | 42   |
| 1.1.5 Corruption .....                          | 27.40     | 80   |
| 1.2 Market Landscape.....                       | 59.53     | 35   |
| 1.2.1 Competition intensity .....               | 70.58     | 58   |
| 1.2.2 Ease of doing business .....              | 66.92     | 60   |
| 1.2.3 Cluster development .....                 | 65.65     | 23   |
| 1.2.4 R&D expenditure .....                     | 2.03      | 102  |
| 1.2.5 ICT infrastructure .....                  | 82.19     | 20   |
| 1.2.6 Technology utilisation .....              | 69.79     | 32   |
| 1.3 Business and Labour Landscape.....          | 71.85     | 23   |
| Labour Market                                   |           |      |
| 1.3.1 Ease of hiring .....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy .....                  | 62.50     | 64   |
| 1.3.3 Active labour market policies .....       | 67.27     | 26   |
| 1.3.4 Labour-employer cooperation .....         | 68.26     | 21   |
| Management Practice                             |           |      |
| 1.3.5 Professional management .....             | 60.47     | 33   |
| 1.3.6 Relationship of pay to productivity ..... | 72.61     | 22   |
| <b>2 ATTRACT.....70.12</b>                      | <b>12</b> |      |
| 2.1 External Openness .....                     | 76.43     | 8    |
| Attract Business                                |           |      |
| 2.1.1 FDI and technology transfer .....         | 69.11     | 34   |
| 2.1.2 Prevalence of foreign ownership .....     | 82.65     | 17   |
| Attract People                                  |           |      |
| 2.1.3 Migrant stock .....                       | 100.00    | 1    |
| 2.1.4 International students .....              | 63.50     | 12   |
| 2.1.5 Brain gain .....                          | 66.89     | 21   |
| 2.2 Internal Openness.....                      | 63.81     | 26   |
| Social Inclusion                                |           |      |
| 2.2.1 Tolerance of minorities .....             | 22.35     | 96   |
| 2.2.2 Tolerance of immigrants .....             | 78.38     | 21   |
| 2.2.3 Social mobility .....                     | 74.30     | 24   |
| Gender Equality                                 |           |      |
| 2.2.4 Female graduates .....                    | 85.46     | 21   |
| 2.2.5 Gender earnings gap .....                 | 50.90     | 71   |
| 2.2.6 Leadership opportunities for women .....  | 71.47     | 19   |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>47,526.90</b> |
| GDP (US\$ billions) .....               | <b>35.31</b>     |
| GTCI score .....                        | <b>48.45</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

|                                                  | Score     | Rank |
|--------------------------------------------------|-----------|------|
| <b>3 GROW.....43.37</b>                          | <b>39</b> |      |
| 3.1 Formal Education.....                        | 19.68     | 80   |
| Enrolment                                        |           |      |
| 3.1.1 Vocational enrolment .....                 | 13.82     | 82   |
| 3.1.2 Tertiary enrolment .....                   | 37.82     | 58   |
| Quality                                          |           |      |
| 3.1.3 Tertiary education expenditure .....       | 13.34     | 86   |
| 3.1.4 Reading, maths, and science .....          | n/a       | n/a  |
| 3.1.5 University ranking .....                   | 13.73     | 67   |
| 3.2 Lifelong Learning.....                       | 62.47     | 25   |
| 3.2.1 Quality of management schools .....        | 59.69     | 32   |
| 3.2.2 Prevalence of training in firms .....      | n/a       | n/a  |
| 3.2.3 Employee development .....                 | 65.25     | 25   |
| 3.3 Access to Growth Opportunities .....         | 47.95     | 45   |
| Empowerment                                      |           |      |
| 3.3.1 Delegation of authority .....              | 56.02     | 35   |
| 3.3.2 Personal rights .....                      | 14.55     | 112  |
| Collaboration                                    |           |      |
| 3.3.3 Use of virtual social networks .....       | 87.38     | 16   |
| 3.3.4 Use of virtual professional networks ..... | 30.63     | 30   |
| 3.3.5 Collaboration within organisations .....   | 55.60     | 28   |
| 3.3.6 Collaboration across organisations .....   | 43.52     | 37   |

|                                       |           |    |
|---------------------------------------|-----------|----|
| <b>4 RETAIN.....52.99</b>             | <b>57</b> |    |
| 4.1 Sustainability .....              | 49.86     | 45 |
| 4.1.1 Pension system .....            | 18.37     | 78 |
| 4.1.2 Social protection .....         | 66.53     | 26 |
| 4.1.3 Brain retention .....           | 64.68     | 30 |
| 4.2 Lifestyle .....                   | 56.12     | 68 |
| 4.2.1 Environmental performance ..... | 46.21     | 78 |
| 4.2.2 Personal safety .....           | 63.77     | 63 |
| 4.2.3 Physician density .....         | 14.49     | 86 |
| 4.2.4 Sanitation .....                | 100.00    | 1  |

|                                                          |           |     |
|----------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....42.75</b>       | <b>52</b> |     |
| 5.1 Mid-Level Skills .....                               | 21.51     | 92  |
| 5.1.1 Workforce with secondary education .....           | 10.50     | 104 |
| 5.1.2 Population with secondary education .....          | 2.71      | 102 |
| 5.1.3 Technicians and associate professionals .....      | 26.79     | 76  |
| 5.1.4 Labour productivity per employee .....             | 46.03     | 26  |
| 5.2 Employability.....                                   | 63.99     | 24  |
| 5.2.1 Ease of finding skilled employees .....            | 66.95     | 32  |
| 5.2.2 Relevance of education system to the economy ..... | 60.78     | 23  |
| 5.2.3 Skills matching with secondary education .....     | 55.92     | 34  |
| 5.2.4 Skills matching with tertiary education .....      | 72.31     | 22  |

|                                                      |           |     |
|------------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....19.34</b>          | <b>78</b> |     |
| 6.1 High-Level Skills .....                          | 28.01     | 63  |
| 6.1.1 Workforce with tertiary education .....        | 14.29     | 92  |
| 6.1.2 Population with tertiary education .....       | 30.90     | 52  |
| 6.1.3 Professionals .....                            | 19.66     | 78  |
| 6.1.4 Researchers .....                              | 4.39      | 69  |
| 6.1.5 Senior officials and managers .....            | 47.02     | 21  |
| 6.1.6 Availability of scientists and engineers ..... | 51.81     | 43  |
| 6.2 Talent Impact.....                               | 10.67     | 89  |
| 6.2.1 Innovation output .....                        | 24.50     | 73  |
| 6.2.2 High-value exports .....                       | 1.90      | 107 |
| 6.2.3 New product entrepreneurial activity .....     | n/a       | n/a |
| 6.2.4 New business density .....                     | n/a       | n/a |
| 6.2.5 Scientific journal articles .....              | 5.62      | 65  |

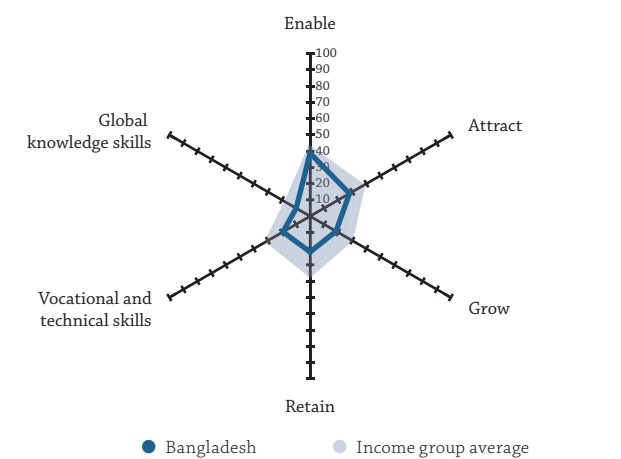


# BANGLADESH

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>118</b>                       |
| Income group.....          | <b>Lower-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>164.67</b>                    |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....38.81 102</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 31.66  | 112  |
| 1.1.1 Government effectiveness.....            | 28.04  | 104  |
| 1.1.2 Business-government relations.....       | 49.23  | 83   |
| 1.1.3 Political stability.....                 | 35.88  | 112  |
| 1.1.4 Regulatory quality.....                  | 28.71  | 111  |
| 1.1.5 Corruption.....                          | 16.44  | 109  |
| 1.2 Market Landscape.....                      | 35.92  | 101  |
| 1.2.1 Competition intensity.....               | 63.53  | 72   |
| 1.2.2 Ease of doing business.....              | 18.18  | 122  |
| 1.2.3 Cluster development.....                 | 39.30  | 62   |
| 1.2.4 R&D expenditure.....                     | n/a    | n/a  |
| 1.2.5 ICT infrastructure.....                  | 17.43  | 111  |
| 1.2.6 Technology utilisation.....              | 41.18  | 90   |
| 1.3 Business and Labour Landscape.....         | 48.86  | 74   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 50.00  | 85   |
| 1.3.3 Active labour market policies.....       | 24.29  | 103  |
| 1.3.4 Labour-employer cooperation.....         | 38.55  | 70   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 37.93  | 83   |
| 1.3.6 Relationship of pay to productivity..... | 42.36  | 75   |
| <b>2 ATTRACT.....27.98 122</b>                 |        |      |
| 2.1 External Openness.....                     | 22.75  | 116  |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 40.06  | 102  |
| 2.1.2 Prevalence of foreign ownership.....     | 42.51  | 99   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 1.74   | 100  |
| 2.1.4 International students.....              | 0.37   | 101  |
| 2.1.5 Brain gain.....                          | 29.05  | 93   |
| 2.2 Internal Openness.....                     | 33.21  | 120  |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 10.59  | 111  |
| 2.2.2 Tolerance of immigrants.....             | 74.32  | 29   |
| 2.2.3 Social mobility.....                     | 46.71  | 73   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 0.00   | 105  |
| 2.2.5 Gender earnings gap.....                 | 39.67  | 94   |
| 2.2.6 Leadership opportunities for women.....  | 27.98  | 91   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>3,868.82</b> |
| GDP (US\$ billions).....               | <b>249.72</b>   |
| GTCI score.....                        | <b>22.73</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....18.45 122</b>                     |       |      |
| 3.1 Formal Education.....                       | 10.71 | 108  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 8.21  | 92   |
| 3.1.2 Tertiary enrolment.....                   | 13.67 | 91   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 8.88  | 93   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 12.07 | 70   |
| 3.2 Lifelong Learning.....                      | 23.59 | 118  |
| 3.2.1 Quality of management schools.....        | 27.76 | 98   |
| 3.2.2 Prevalence of training in firms.....      | 24.41 | 71   |
| 3.2.3 Employee development.....                 | 18.60 | 112  |
| 3.3 Access to Growth Opportunities.....         | 21.06 | 119  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 29.30 | 106  |
| 3.3.2 Personal rights.....                      | 27.00 | 100  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 46.33 | 111  |
| 3.3.4 Use of virtual professional networks..... | 0.88  | 114  |
| 3.3.5 Collaboration within organisations.....   | 13.78 | 117  |
| 3.3.6 Collaboration across organisations.....   | 9.08  | 116  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....22.00 116</b>        |       |     |
| 4.1 Sustainability.....              | 15.22 | 119 |
| 4.1.1 Pension system.....            | 1.02  | 107 |
| 4.1.2 Social protection.....         | 8.23  | 121 |
| 4.1.3 Brain retention.....           | 36.41 | 81  |
| 4.2 Lifestyle.....                   | 28.78 | 108 |
| 4.2.1 Environmental performance..... | 3.55  | 123 |
| 4.2.2 Personal safety.....           | 61.26 | 66  |
| 4.2.3 Physician density.....         | 7.28  | 97  |
| 4.2.4 Sanitation.....                | 43.01 | 105 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....19.26 116</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 10.10 | 110 |
| 5.1.1 Workforce with secondary education.....           | 18.00 | 98  |
| 5.1.2 Population with secondary education.....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals.....      | 7.59  | 106 |
| 5.1.4 Labour productivity per employee.....             | 4.72  | 90  |
| 5.2 Employability.....                                  | 28.41 | 102 |
| 5.2.1 Ease of finding skilled employees.....            | 31.56 | 99  |
| 5.2.2 Relevance of education system to the economy..... | 29.33 | 78  |
| 5.2.3 Skills matching with secondary education.....     | 23.64 | 113 |
| 5.2.4 Skills matching with tertiary education.....      | 29.12 | 101 |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....9.88 103</b>       |       |     |
| 6.1 High-Level Skills.....                          | 16.18 | 93  |
| 6.1.1 Workforce with tertiary education.....        | 7.67  | 102 |
| 6.1.2 Population with tertiary education.....       | n/a   | n/a |
| 6.1.3 Professionals.....                            | 12.36 | 96  |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 9.52  | 90  |
| 6.1.6 Availability of scientists and engineers..... | 35.16 | 74  |
| 6.2 Talent Impact.....                              | 3.57  | 117 |
| 6.2.1 Innovation output.....                        | 13.69 | 102 |
| 6.2.2 High-value exports.....                       | 0.54  | 117 |
| 6.2.3 New product entrepreneurial activity.....     | 2.67  | 85  |
| 6.2.4 New business density.....                     | 0.39  | 95  |
| 6.2.5 Scientific journal articles.....              | 0.58  | 101 |

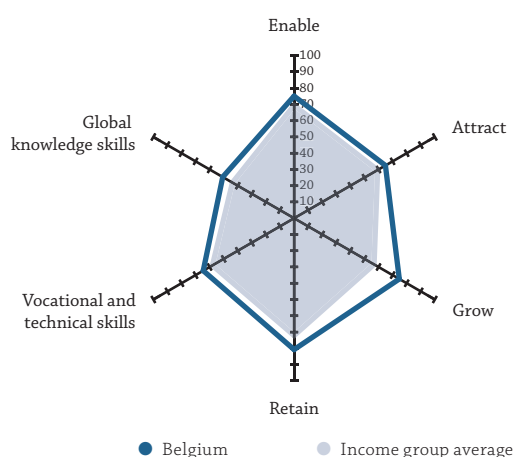
# BELGIUM

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>17</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>11.37</b>       |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>47,561.03</b> |
| GDP (US\$ billions) .....               | <b>492.68</b>    |
| GTCI score.....                         | <b>68.48</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>1 ENABLE.....75.14 21</b>                           |       |      |
| 1.1 Regulatory Landscape.....72.50 24                  |       |      |
| 1.1.1 Government effectiveness.....78.16 22            |       |      |
| 1.1.2 Business-government relations.....47.90 86       |       |      |
| 1.1.3 Political stability.....75.69 41                 |       |      |
| 1.1.4 Regulatory quality.....79.90 20                  |       |      |
| 1.1.5 Corruption.....80.82 15                          |       |      |
| 1.2 Market Landscape.....75.08 16                      |       |      |
| 1.2.1 Competition intensity.....88.11 9                |       |      |
| 1.2.2 Ease of doing business.....73.31 47              |       |      |
| 1.2.3 Cluster development.....72.00 17                 |       |      |
| 1.2.4 R&D expenditure.....58.33 11                     |       |      |
| 1.2.5 ICT infrastructure.....82.32 19                  |       |      |
| 1.2.6 Technology utilisation.....76.42 25              |       |      |
| 1.3 Business and Labour Landscape.....77.85 17         |       |      |
| Labour Market                                          |       |      |
| 1.3.1 Ease of hiring.....89.00 27                      |       |      |
| 1.3.2 Ease of redundancy.....100.00 1                  |       |      |
| 1.3.3 Active labour market policies.....72.98 20       |       |      |
| 1.3.4 Labour-employer cooperation.....51.89 41         |       |      |
| Management Practice                                    |       |      |
| 1.3.5 Professional management.....86.74 14             |       |      |
| 1.3.6 Relationship of pay to productivity.....66.51 30 |       |      |
| <b>2 ATTRACT.....64.90 19</b>                          |       |      |
| 2.1 External Openness.....61.63 16                     |       |      |
| Attract Business                                       |       |      |
| 2.1.1 FDI and technology transfer.....78.29 17         |       |      |
| 2.1.2 Prevalence of foreign ownership.....91.94 6      |       |      |
| Attract People                                         |       |      |
| 2.1.3 Migrant stock.....22.81 37                       |       |      |
| 2.1.4 International students.....56.31 13              |       |      |
| 2.1.5 Brain gain.....58.80 28                          |       |      |
| 2.2 Internal Openness.....68.18 19                     |       |      |
| Social Inclusion                                       |       |      |
| 2.2.1 Tolerance of minorities.....63.53 27             |       |      |
| 2.2.2 Tolerance of immigrants.....72.97 30             |       |      |
| 2.2.3 Social mobility.....78.89 19                     |       |      |
| Gender Equality                                        |       |      |
| 2.2.4 Female graduates.....79.19 37                    |       |      |
| 2.2.5 Gender earnings gap.....57.95 46                 |       |      |
| 2.2.6 Leadership opportunities for women.....56.54 37  |       |      |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW.....74.75 8</b>                               |       |      |
| 3.1 Formal Education.....64.19 5                        |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment.....94.26 2                  |       |      |
| 3.1.2 Tertiary enrolment.....60.94 20                   |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure.....34.15 21       |       |      |
| 3.1.4 Reading, maths, and science.....76.89 17          |       |      |
| 3.1.5 University ranking.....54.73 15                   |       |      |
| 3.2 Lifelong Learning.....82.68 5                       |       |      |
| 3.2.1 Quality of management schools.....86.32 5         |       |      |
| 3.2.2 Prevalence of training in firms.....n/a n/a       |       |      |
| 3.2.3 Employee development.....79.05 15                 |       |      |
| 3.3 Access to Growth Opportunities.....77.38 15         |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority.....81.41 12              |       |      |
| 3.3.2 Personal rights.....89.78 19                      |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks.....86.32 19       |       |      |
| 3.3.4 Use of virtual professional networks.....66.01 14 |       |      |
| 3.3.5 Collaboration within organisations.....78.32 15   |       |      |
| 3.3.6 Collaboration across organisations.....62.43 21   |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....80.81 14</b>                 |  |  |
| 4.1 Sustainability.....83.18 11              |  |  |
| 4.1.1 Pension system.....90.82 15            |  |  |
| 4.1.2 Social protection.....96.34 5          |  |  |
| 4.1.3 Brain retention.....62.39 32           |  |  |
| 4.2 Lifestyle.....78.44 22                   |  |  |
| 4.2.1 Environmental performance.....83.26 15 |  |  |
| 4.2.2 Personal safety.....83.60 28           |  |  |
| 4.2.3 Physician density.....47.99 36         |  |  |
| 4.2.4 Sanitation.....98.92 21                |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....64.54 15</b>           |  |  |
| 5.1 Mid-Level Skills.....55.12 29                               |  |  |
| 5.1.1 Workforce with secondary education.....52.61 47           |  |  |
| 5.1.2 Population with secondary education.....46.79 38          |  |  |
| 5.1.3 Technicians and associate professionals.....59.82 24      |  |  |
| 5.1.4 Labour productivity per employee.....61.27 10             |  |  |
| 5.2 Employability.....73.95 17                                  |  |  |
| 5.2.1 Ease of finding skilled employees.....71.79 25            |  |  |
| 5.2.2 Relevance of education system to the economy.....72.14 15 |  |  |
| 5.2.3 Skills matching with secondary education.....70.33 17     |  |  |
| 5.2.4 Skills matching with tertiary education.....81.53 14      |  |  |

|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....50.71 18</b>               |  |  |
| 6.1 High-Level Skills.....57.15 14                          |  |  |
| 6.1.1 Workforce with tertiary education.....64.57 13        |  |  |
| 6.1.2 Population with tertiary education.....52.80 18       |  |  |
| 6.1.3 Professionals.....65.45 11                            |  |  |
| 6.1.4 Researchers.....57.34 15                              |  |  |
| 6.1.5 Senior officials and managers.....48.81 18            |  |  |
| 6.1.6 Availability of scientists and engineers.....53.91 40 |  |  |
| 6.2 Talent Impact.....44.28 19                              |  |  |
| 6.2.1 Innovation output.....56.68 22                        |  |  |
| 6.2.2 High-value exports.....22.75 36                       |  |  |
| 6.2.3 New product entrepreneurial activity.....66.34 10     |  |  |
| 6.2.4 New business density.....17.88 32                     |  |  |
| 6.2.5 Scientific journal articles.....57.75 15              |  |  |

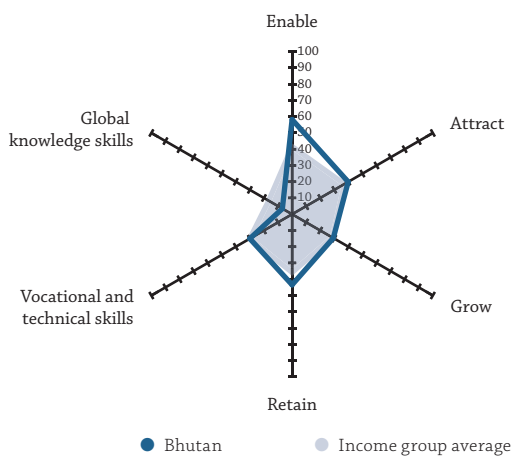


# BHUTAN

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>83</b>                        |
| Income group.....          | <b>Lower-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>0.81</b>                      |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>58.23</b> | <b>41</b> |
| 1.1 Regulatory Landscape.....                  | 61.31        | 44        |
| 1.1.1 Government effectiveness.....            | 57.32        | 44        |
| 1.1.2 Business-government relations.....       | 60.04        | 58        |
| 1.1.3 Political stability.....                 | 87.50        | 15        |
| 1.1.4 Regulatory quality.....                  | 31.82        | 105       |
| 1.1.5 Corruption.....                          | 69.86        | 24        |
| 1.2 Market Landscape.....                      | 44.78        | 72        |
| 1.2.1 Competition intensity.....               | 54.82        | 100       |
| 1.2.2 Ease of doing business.....              | 63.58        | 67        |
| 1.2.3 Cluster development.....                 | 34.95        | 72        |
| 1.2.4 R&D expenditure.....                     | n/a          | n/a       |
| 1.2.5 ICT infrastructure.....                  | 30.66        | 98        |
| 1.2.6 Technology utilisation.....              | 39.87        | 93        |
| 1.3 Business and Labour Landscape.....         | 68.59        | 31        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 100.00       | 1         |
| 1.3.2 Ease of redundancy.....                  | 75.00        | 45        |
| 1.3.3 Active labour market policies.....       | 61.51        | 35        |
| 1.3.4 Labour-employer cooperation.....         | 63.48        | 27        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 52.02        | 55        |
| 1.3.6 Relationship of pay to productivity..... | 59.52        | 45        |
| <b>2 ATTRACT.....</b>                          | <b>39.85</b> | <b>82</b> |
| 2.1 External Openness.....                     | 30.55        | 89        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 39.14        | 106       |
| 2.1.2 Prevalence of foreign ownership.....     | 21.21        | 121       |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 13.25        | 50        |
| 2.1.4 International students.....              | n/a          | n/a       |
| 2.1.5 Brain gain.....                          | 48.62        | 46        |
| 2.2 Internal Openness.....                     | 49.14        | 65        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 25.88        | 89        |
| 2.2.2 Tolerance of immigrants.....             | 58.11        | 59        |
| 2.2.3 Social mobility.....                     | 67.06        | 30        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 14.92        | 100       |
| 2.2.5 Gender earnings gap.....                 | 48.39        | 79        |
| 2.2.6 Leadership opportunities for women.....  | 80.47        | 10        |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>9,560.77</b> |
| GDP (US\$ billions).....               | <b>2.51</b>     |
| GTCI score.....                        | <b>34.62</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>29.29</b> | <b>86</b> |
| 3.1 Formal Education.....                       | 6.40         | 117       |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 4.09         | 101       |
| 3.1.2 Tertiary enrolment.....                   | 8.04         | 99        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 13.47        | 85        |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 40.29        | 67        |
| 3.2.1 Quality of management schools.....        | 45.79        | 51        |
| 3.2.2 Prevalence of training in firms.....      | 29.82        | 58        |
| 3.2.3 Employee development.....                 | 45.27        | 49        |
| 3.3 Access to Growth Opportunities.....         | 41.18        | 62        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 50.72        | 47        |
| 3.3.2 Personal rights.....                      | 55.94        | 69        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 56.32        | 99        |
| 3.3.4 Use of virtual professional networks..... | 9.38         | 72        |
| 3.3.5 Collaboration within organisations.....   | 37.93        | 57        |
| 3.3.6 Collaboration across organisations.....   | 36.80        | 49        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>43.42</b> | <b>75</b> |
| 4.1 Sustainability.....              | 39.02        | 68        |
| 4.1.1 Pension system.....            | 12.24        | 84        |
| 4.1.2 Social protection.....         | 48.20        | 44        |
| 4.1.3 Brain retention.....           | 56.62        | 36        |
| 4.2 Lifestyle.....                   | 47.81        | 88        |
| 4.2.1 Environmental performance..... | 32.99        | 101       |
| 4.2.2 Personal safety.....           | 92.23        | 19        |
| 4.2.3 Physician density.....         | 5.82         | 101       |
| 4.2.4 Sanitation.....                | 60.22        | 96        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>30.02</b> | <b>92</b> |
| 5.1 Mid-Level Skills.....                               | 11.51        | 108       |
| 5.1.1 Workforce with secondary education.....           | 19.36        | 97        |
| 5.1.2 Population with secondary education.....          | 0.00         | 106       |
| 5.1.3 Technicians and associate professionals.....      | 15.18        | 93        |
| 5.1.4 Labour productivity per employee.....             | n/a          | n/a       |
| 5.2 Employability.....                                  | 48.53        | 50        |
| 5.2.1 Ease of finding skilled employees.....            | 36.77        | 86        |
| 5.2.2 Relevance of education system to the economy..... | 57.26        | 29        |
| 5.2.3 Skills matching with secondary education.....     | 47.33        | 53        |
| 5.2.4 Skills matching with tertiary education.....      | 52.73        | 47        |

|                                                     |             |            |
|-----------------------------------------------------|-------------|------------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>6.90</b> | <b>119</b> |
| 6.1 High-Level Skills.....                          | 13.00       | 103        |
| 6.1.1 Workforce with tertiary education.....        | 7.08        | 105        |
| 6.1.2 Population with tertiary education.....       | 5.94        | 94         |
| 6.1.3 Professionals.....                            | 22.75       | 72         |
| 6.1.4 Researchers.....                              | n/a         | n/a        |
| 6.1.5 Senior officials and managers.....            | 10.71       | 87         |
| 6.1.6 Availability of scientists and engineers..... | 18.52       | 111        |
| 6.2 Talent Impact.....                              | 0.79        | 122        |
| 6.2.1 Innovation output.....                        | n/a         | n/a        |
| 6.2.2 High-value exports.....                       | 0.04        | 120        |
| 6.2.3 New product entrepreneurial activity.....     | n/a         | n/a        |
| 6.2.4 New business density.....                     | 0.39        | 95         |
| 6.2.5 Scientific journal articles.....              | 1.96        | 81         |

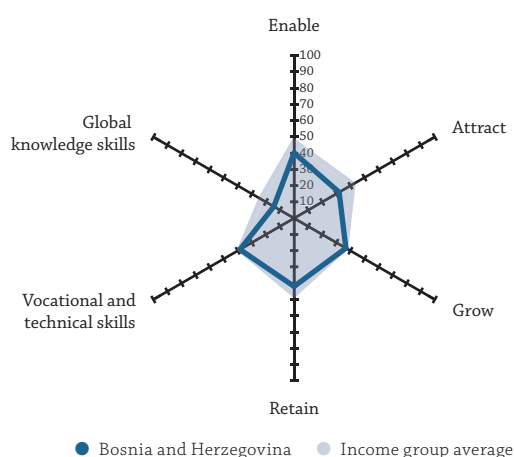
# BOSNIA AND HERZEGOVINA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>86</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>3.51</b>                |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>12,875.97</b> |
| GDP (US\$ billions).....               | <b>18.17</b>     |
| GTCI score.....                        | <b>33.97</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank       |
|------------------------------------------------|--------------|------------|
| <b>1 ENABLE.....</b>                           | <b>40.19</b> | <b>94</b>  |
| 1.1 Regulatory Landscape.....                  | 45.20        | 78         |
| 1.1.1 Government effectiveness.....            | 34.49        | 90         |
| 1.1.2 Business-government relations.....       | 61.81        | 50         |
| 1.1.3 Political stability.....                 | 55.79        | 81         |
| 1.1.4 Regulatory quality.....                  | 43.78        | 78         |
| 1.1.5 Corruption.....                          | 30.14        | 70         |
| 1.2 Market Landscape.....                      | 39.77        | 88         |
| 1.2.1 Competition intensity.....               | 49.45        | 110        |
| 1.2.2 Ease of doing business.....              | 59.86        | 78         |
| 1.2.3 Cluster development.....                 | 28.89        | 86         |
| 1.2.4 R&D expenditure.....                     | 4.74         | 85         |
| 1.2.5 ICT infrastructure.....                  | 52.93        | 71         |
| 1.2.6 Technology utilisation.....              | 42.72        | 86         |
| 1.3 Business and Labour Landscape.....         | 35.61        | 111        |
| Labour Market                                  |              |            |
| 1.3.1 Ease of hiring.....                      | 72.33        | 50         |
| 1.3.2 Ease of redundancy.....                  | 62.50        | 64         |
| 1.3.3 Active labour market policies.....       | 23.35        | 105        |
| 1.3.4 Labour-employer cooperation.....         | 21.96        | 108        |
| Management Practice                            |              |            |
| 1.3.5 Professional management.....             | 13.80        | 123        |
| 1.3.6 Relationship of pay to productivity..... | 19.70        | 120        |
| <b>2 ATTRACT.....</b>                          | <b>32.00</b> | <b>111</b> |
| 2.1 External Openness.....                     | 26.11        | 108        |
| Attract Business                               |              |            |
| 2.1.1 FDI and technology transfer.....         | 40.83        | 100        |
| 2.1.2 Prevalence of foreign ownership.....     | 43.32        | 98         |
| Attract People                                 |              |            |
| 2.1.3 Migrant stock.....                       | 2.04         | 97         |
| 2.1.4 International students.....              | 36.71        | 29         |
| 2.1.5 Brain gain.....                          | 7.66         | 124        |
| 2.2 Internal Openness.....                     | 37.88        | 108        |
| Social Inclusion                               |              |            |
| 2.2.1 Tolerance of minorities.....             | 32.94        | 76         |
| 2.2.2 Tolerance of immigrants.....             | 41.89        | 87         |
| 2.2.3 Social mobility.....                     | 23.57        | 121        |
| Gender Equality                                |              |            |
| 2.2.4 Female graduates.....                    | 77.01        | 45         |
| 2.2.5 Gender earnings gap.....                 | 32.97        | 105        |
| 2.2.6 Leadership opportunities for women.....  | 18.88        | 109        |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>36.79</b> | <b>63</b> |
| 3.1 Formal Education.....                       | 50.21        | 25        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 79.31        | 7         |
| 3.1.2 Tertiary enrolment.....                   | n/a          | n/a       |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | n/a          | n/a       |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 21.10        | 52        |
| 3.2 Lifelong Learning.....                      | 30.07        | 98        |
| 3.2.1 Quality of management schools.....        | 15.78        | 116       |
| 3.2.2 Prevalence of training in firms.....      | 64.64        | 18        |
| 3.2.3 Employee development.....                 | 9.81         | 123       |
| 3.3 Access to Growth Opportunities.....         | 30.10        | 106       |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 28.29        | 109       |
| 3.3.2 Personal rights.....                      | 45.62        | 80        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 68.48        | 73        |
| 3.3.4 Use of virtual professional networks..... | 10.29        | 70        |
| 3.3.5 Collaboration within organisations.....   | 18.04        | 108       |
| 3.3.6 Collaboration across organisations.....   | 9.86         | 113       |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>41.97</b> | <b>82</b> |
| 4.1 Sustainability.....              | 28.90        | 93        |
| 4.1.1 Pension system.....            | 70.41        | 33        |
| 4.1.2 Social protection.....         | 12.36        | 117       |
| 4.1.3 Brain retention.....           | 3.93         | 124       |
| 4.2 Lifestyle.....                   | 55.04        | 72        |
| 4.2.1 Environmental performance..... | 24.02        | 114       |
| 4.2.2 Personal safety.....           | 71.57        | 45        |
| 4.2.3 Physician density.....         | 29.95        | 62        |
| 4.2.4 Sanitation.....                | 94.62        | 53        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>38.46</b> | <b>66</b> |
| 5.1 Mid-Level Skills.....                               | 58.31        | 26        |
| 5.1.1 Workforce with secondary education.....           | 91.68        | 4         |
| 5.1.2 Population with secondary education.....          | 70.33        | 13        |
| 5.1.3 Technicians and associate professionals.....      | 41.96        | 52        |
| 5.1.4 Labour productivity per employee.....             | 29.25        | 53        |
| 5.2 Employability.....                                  | 18.61        | 118       |
| 5.2.1 Ease of finding skilled employees.....            | 24.02        | 113       |
| 5.2.2 Relevance of education system to the economy..... | 3.47         | 121       |
| 5.2.3 Skills matching with secondary education.....     | 30.83        | 95        |
| 5.2.4 Skills matching with tertiary education.....      | 16.12        | 119       |

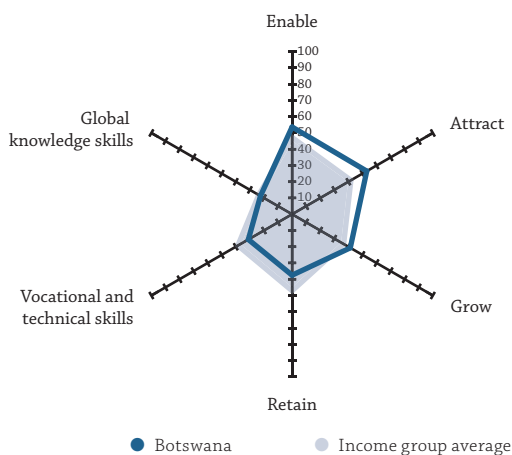
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|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>14.40</b> | <b>95</b> |
| 6.1 High-Level Skills.....                          | 19.19        | 87        |
| 6.1.1 Workforce with tertiary education.....        | 24.13        | 77        |
| 6.1.2 Population with tertiary education.....       | 15.96        | 78        |
| 6.1.3 Professionals.....                            | 28.65        | 58        |
| 6.1.4 Researchers.....                              | 4.82         | 66        |
| 6.1.5 Senior officials and managers.....            | 17.26        | 68        |
| 6.1.6 Availability of scientists and engineers..... | 24.30        | 104       |
| 6.2 Talent Impact.....                              | 9.61         | 98        |
| 6.2.1 Innovation output.....                        | 21.44        | 80        |
| 6.2.2 High-value exports.....                       | 4.73         | 88        |
| 6.2.3 New product entrepreneurial activity.....     | 10.69        | 80        |
| 6.2.4 New business density.....                     | 5.40         | 65        |
| 6.2.5 Scientific journal articles.....              | 5.77         | 64        |

# BOTSWANA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>62</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>2.29</b>                |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....53.67 49</b>                   |        |      |
| 1.1 Regulatory Landscape.....                  | 68.00  | 29   |
| 1.1.1 Government effectiveness.....            | 57.82  | 42   |
| 1.1.2 Business-government relations.....       | 70.20  | 29   |
| 1.1.3 Political stability.....                 | 89.81  | 10   |
| 1.1.4 Regulatory quality.....                  | 60.53  | 47   |
| 1.1.5 Corruption.....                          | 61.64  | 30   |
| 1.2 Market Landscape.....                      | 40.63  | 85   |
| 1.2.1 Competition intensity.....               | 63.62  | 71   |
| 1.2.2 Ease of doing business.....              | 61.19  | 73   |
| 1.2.3 Cluster development.....                 | 25.24  | 95   |
| 1.2.4 R&D expenditure.....                     | 12.33  | 56   |
| 1.2.5 ICT infrastructure.....                  | 40.97  | 81   |
| 1.2.6 Technology utilisation.....              | 40.45  | 92   |
| 1.3 Business and Labour Landscape.....         | 52.38  | 63   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 50.00  | 85   |
| 1.3.3 Active labour market policies.....       | 34.07  | 76   |
| 1.3.4 Labour-employer cooperation.....         | 42.30  | 60   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 55.22  | 42   |
| 1.3.6 Relationship of pay to productivity..... | 32.70  | 101  |
| <b>2 ATTRACT.....53.05 35</b>                  |        |      |
| 2.1 External Openness.....                     | 41.04  | 55   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 48.04  | 85   |
| 2.1.2 Prevalence of foreign ownership.....     | 74.51  | 31   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 14.88  | 47   |
| 2.1.4 International students.....              | 13.47  | 62   |
| 2.1.5 Brain gain.....                          | 54.32  | 36   |
| 2.2 Internal Openness.....                     | 65.05  | 21   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 55.29  | 42   |
| 2.2.2 Tolerance of immigrants.....             | 66.22  | 44   |
| 2.2.3 Social mobility.....                     | 54.39  | 48   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 77.28  | 44   |
| 2.2.5 Gender earnings gap.....                 | 84.11  | 4    |
| 2.2.6 Leadership opportunities for women.....  | 53.00  | 45   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>17,354.20</b> |
| GDP (US\$ billions).....               | <b>17.41</b>     |
| GTCI score.....                        | <b>39.86</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....41.35 49</b>                      |       |      |
| 3.1 Formal Education.....                       | 38.37 | 41   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | n/a   | n/a  |
| 3.1.2 Tertiary enrolment.....                   | 18.67 | 84   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 96.44 | 2    |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 44.49 | 56   |
| 3.2.1 Quality of management schools.....        | 25.91 | 103  |
| 3.2.2 Prevalence of training in firms.....      | 63.98 | 19   |
| 3.2.3 Employee development.....                 | 43.59 | 56   |
| 3.3 Access to Growth Opportunities.....         | 41.20 | 61   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 49.77 | 53   |
| 3.3.2 Personal rights.....                      | 65.13 | 52   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 57.02 | 94   |
| 3.3.4 Use of virtual professional networks..... | 17.10 | 58   |
| 3.3.5 Collaboration within organisations.....   | 32.41 | 70   |
| 3.3.6 Collaboration across organisations.....   | 25.77 | 81   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....37.51 94</b>         |       |     |
| 4.1 Sustainability.....              | 31.73 | 85  |
| 4.1.1 Pension system.....            | 7.14  | 92  |
| 4.1.2 Social protection.....         | 41.31 | 58  |
| 4.1.3 Brain retention.....           | 46.75 | 53  |
| 4.2 Lifestyle.....                   | 43.29 | 94  |
| 4.2.1 Environmental performance..... | 40.46 | 89  |
| 4.2.2 Personal safety.....           | 69.86 | 50  |
| 4.2.3 Physician density.....         | 5.87  | 100 |
| 4.2.4 Sanitation.....                | 56.99 | 98  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....31.07 85</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 27.69 | 83  |
| 5.1.1 Workforce with secondary education.....           | 21.46 | 93  |
| 5.1.2 Population with secondary education.....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals.....      | 33.93 | 62  |
| 5.1.4 Labour productivity per employee.....             | n/a   | n/a |
| 5.2 Employability.....                                  | 34.45 | 83  |
| 5.2.1 Ease of finding skilled employees.....            | 40.60 | 76  |
| 5.2.2 Relevance of education system to the economy..... | 34.24 | 69  |
| 5.2.3 Skills matching with secondary education.....     | 28.65 | 101 |
| 5.2.4 Skills matching with tertiary education.....      | 34.33 | 88  |

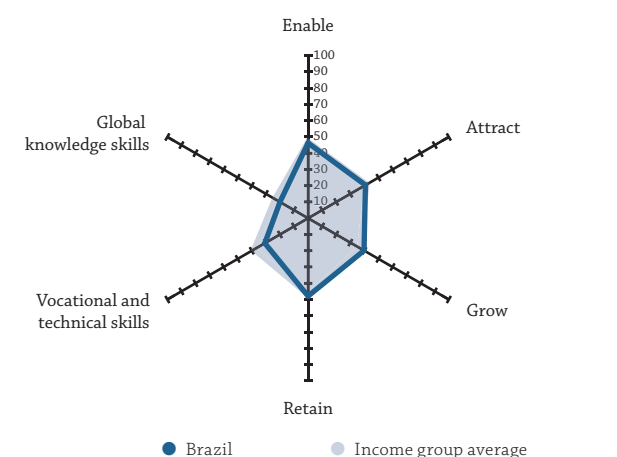
|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....22.47 67</b>       |       |     |
| 6.1 High-Level Skills.....                          | 17.89 | 91  |
| 6.1.1 Workforce with tertiary education.....        | 23.67 | 80  |
| 6.1.2 Population with tertiary education.....       | n/a   | n/a |
| 6.1.3 Professionals.....                            | 17.42 | 84  |
| 6.1.4 Researchers.....                              | 2.09  | 79  |
| 6.1.5 Senior officials and managers.....            | 19.05 | 66  |
| 6.1.6 Availability of scientists and engineers..... | 27.22 | 96  |
| 6.2 Talent Impact.....                              | 27.06 | 48  |
| 6.2.1 Innovation output.....                        | 13.42 | 104 |
| 6.2.2 High-value exports.....                       | 0.72  | 115 |
| 6.2.3 New product entrepreneurial activity.....     | 28.75 | 56  |
| 6.2.4 New business density.....                     | 88.48 | 2   |
| 6.2.5 Scientific journal articles.....              | 3.92  | 74  |

# BRAZIL

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>72</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>209.29</b>                          |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 46.30 79</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 42.30  | 85   |
| 1.1.1 Government effectiveness.....            | 40.69  | 79   |
| 1.1.2 Business-government relations.....       | 45.03  | 94   |
| 1.1.3 Political stability.....                 | 54.17  | 85   |
| 1.1.4 Regulatory quality.....                  | 42.82  | 80   |
| 1.1.5 Corruption.....                          | 28.77  | 73   |
| 1.2 Market Landscape.....                      | 51.61  | 54   |
| 1.2.1 Competition intensity.....               | 72.68  | 49   |
| 1.2.2 Ease of doing business.....              | 45.94  | 102  |
| 1.2.3 Cluster development.....                 | 50.25  | 39   |
| 1.2.4 R&D expenditure.....                     | 29.75  | 27   |
| 1.2.5 ICT infrastructure.....                  | 58.14  | 66   |
| 1.2.6 Technology utilisation.....              | 52.86  | 56   |
| 1.3 Business and Labour Landscape.....         | 45.00  | 86   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 22.33  | 112  |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 25.45  | 100  |
| 1.3.4 Labour-employer cooperation.....         | 28.09  | 98   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 54.70  | 46   |
| 1.3.6 Relationship of pay to productivity..... | 39.40  | 84   |
| <b>2 ATTRACT..... 40.75 80</b>                 |        |      |
| 2.1 External Openness.....                     | 29.18  | 97   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 62.00  | 50   |
| 2.1.2 Prevalence of foreign ownership.....     | 51.00  | 88   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 0.58   | 115  |
| 2.1.4 International students.....              | 1.07   | 96   |
| 2.1.5 Brain gain.....                          | 31.26  | 90   |
| 2.2 Internal Openness.....                     | 52.31  | 52   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 48.24  | 53   |
| 2.2.2 Tolerance of immigrants.....             | 71.62  | 34   |
| 2.2.3 Social mobility.....                     | 46.02  | 75   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 83.20  | 26   |
| 2.2.5 Gender earnings gap.....                 | 49.58  | 76   |
| 2.2.6 Leadership opportunities for women.....  | 15.20  | 113  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>15,483.54</b> |
| GDP (US\$ billions).....               | <b>2,055.51</b>  |
| GTCI score.....                        | <b>37.57</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 39.75 54</b>                     |       |      |
| 3.1 Formal Education.....                       | 29.08 | 62   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 7.86  | 93   |
| 3.1.2 Tertiary enrolment.....                   | 41.15 | 51   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 26.61 | 42   |
| 3.1.4 Reading, maths, and science.....          | 26.34 | 62   |
| 3.1.5 University ranking.....                   | 43.45 | 24   |
| 3.2 Lifelong Learning.....                      | 41.63 | 63   |
| 3.2.1 Quality of management schools.....        | 31.20 | 89   |
| 3.2.2 Prevalence of training in firms.....      | 51.19 | 27   |
| 3.2.3 Employee development.....                 | 42.51 | 57   |
| 3.3 Access to Growth Opportunities.....         | 48.53 | 43   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 50.96 | 45   |
| 3.3.2 Personal rights.....                      | 68.25 | 48   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 81.56 | 34   |
| 3.3.4 Use of virtual professional networks..... | 26.88 | 34   |
| 3.3.5 Collaboration within organisations.....   | 32.60 | 68   |
| 3.3.6 Collaboration across organisations.....   | 30.95 | 68   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 47.91 63</b>        |       |     |
| 4.1 Sustainability.....              | 46.80 | 52  |
| 4.1.1 Pension system.....            | 54.08 | 47  |
| 4.1.2 Social protection.....         | 36.66 | 69  |
| 4.1.3 Brain retention.....           | 49.67 | 45  |
| 4.2 Lifestyle.....                   | 49.01 | 85  |
| 4.2.1 Environmental performance..... | 55.46 | 61  |
| 4.2.2 Personal safety.....           | 26.24 | 115 |
| 4.2.3 Physician density.....         | 29.41 | 64  |
| 4.2.4 Sanitation.....                | 84.95 | 76  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 30.73 88</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 37.36 | 65  |
| 5.1.1 Workforce with secondary education.....           | 56.23 | 40  |
| 5.1.2 Population with secondary education.....          | 41.80 | 47  |
| 5.1.3 Technicians and associate professionals.....      | 35.27 | 60  |
| 5.1.4 Labour productivity per employee.....             | 16.13 | 70  |
| 5.2 Employability.....                                  | 24.10 | 110 |
| 5.2.1 Ease of finding skilled employees.....            | 34.00 | 95  |
| 5.2.2 Relevance of education system to the economy..... | 8.83  | 117 |
| 5.2.3 Skills matching with secondary education.....     | 27.19 | 104 |
| 5.2.4 Skills matching with tertiary education.....      | 26.38 | 109 |

|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 19.99 76</b>      |       |    |
| 6.1 High-Level Skills.....                          | 24.38 | 73 |
| 6.1.1 Workforce with tertiary education.....        | 28.99 | 67 |
| 6.1.2 Population with tertiary education.....       | 20.37 | 72 |
| 6.1.3 Professionals.....                            | 27.81 | 61 |
| 6.1.4 Researchers.....                              | 10.83 | 51 |
| 6.1.5 Senior officials and managers.....            | 28.57 | 45 |
| 6.1.6 Availability of scientists and engineers..... | 29.67 | 87 |
| 6.2 Talent Impact.....                              | 15.60 | 73 |
| 6.2.1 Innovation output.....                        | 26.32 | 69 |
| 6.2.2 High-value exports.....                       | 24.40 | 34 |
| 6.2.3 New product entrepreneurial activity.....     | 16.45 | 72 |
| 6.2.4 New business density.....                     | 0.58  | 93 |
| 6.2.5 Scientific journal articles.....              | 10.23 | 52 |

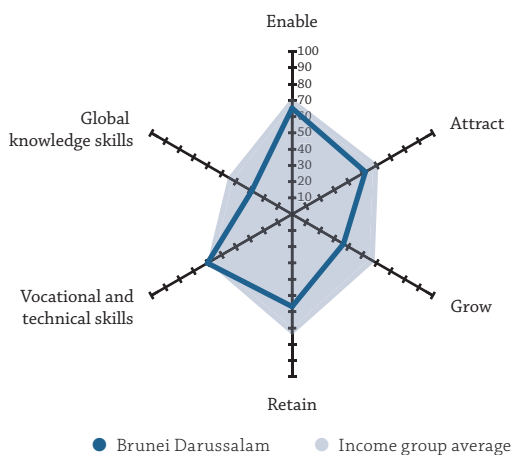
# BRUNEI DARUSSALAM

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>36</b>                                     |
| Income group.....          | <b>High income</b>                            |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>0.43</b>                                   |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>78,836.12</b> |
| GDP (US\$ billions) .....               | <b>12.13</b>     |
| GTCI score.....                         | <b>49.91</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                            | <b>65.27</b> | <b>28</b> |
| 1.1 Regulatory Landscape.....                   | 74.11        | 23        |
| 1.1.1 Government effectiveness .....            | 71.71        | 28        |
| 1.1.2 Business-government relations .....       | 80.13        | 15        |
| 1.1.3 Political stability .....                 | 93.75        | 6         |
| 1.1.4 Regulatory quality .....                  | 61.96        | 45        |
| 1.1.5 Corruption .....                          | 63.01        | 28        |
| 1.2 Market Landscape.....                       | 56.36        | 41        |
| 1.2.1 Competition intensity .....               | 55.09        | 97        |
| 1.2.2 Ease of doing business .....              | 71.35        | 51        |
| 1.2.3 Cluster development .....                 | 35.94        | 70        |
| 1.2.4 R&D expenditure .....                     | n/a          | n/a       |
| 1.2.5 ICT infrastructure .....                  | 73.66        | 37        |
| 1.2.6 Technology utilisation .....              | 45.76        | 72        |
| 1.3 Business and Labour Landscape.....          | 65.33        | 32        |
| Labour Market                                   |              |           |
| 1.3.1 Ease of hiring .....                      | 100.00       | 1         |
| 1.3.2 Ease of redundancy .....                  | 100.00       | 1         |
| 1.3.3 Active labour market policies .....       | 50.64        | 49        |
| 1.3.4 Labour-employer cooperation .....         | 53.86        | 37        |
| Management Practice                             |              |           |
| 1.3.5 Professional management .....             | 39.25        | 81        |
| 1.3.6 Relationship of pay to productivity ..... | 48.20        | 63        |
| <b>2 ATTRACT.....</b>                           | <b>52.04</b> | <b>37</b> |
| 2.1 External Openness .....                     | 42.21        | 49        |
| Attract Business                                |              |           |
| 2.1.1 FDI and technology transfer .....         | 44.60        | 97        |
| 2.1.2 Prevalence of foreign ownership .....     | 44.57        | 95        |
| Attract People                                  |              |           |
| 2.1.3 Migrant stock .....                       | 52.26        | 13        |
| 2.1.4 International students .....              | 16.12        | 55        |
| 2.1.5 Brain gain .....                          | 53.53        | 39        |
| 2.2 Internal Openness.....                      | 61.87        | 31        |
| Social Inclusion                                |              |           |
| 2.2.1 Tolerance of minorities .....             | 45.88        | 54        |
| 2.2.2 Tolerance of immigrants .....             | n/a          | n/a       |
| 2.2.3 Social mobility .....                     | 59.39        | 34        |
| Gender Equality                                 |              |           |
| 2.2.4 Female graduates .....                    | 88.87        | 15        |
| 2.2.5 Gender earnings gap .....                 | 54.96        | 54        |
| 2.2.6 Leadership opportunities for women .....  | 60.22        | 29        |

|                                                  | Score        | Rank      |
|--------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                               | <b>36.51</b> | <b>65</b> |
| 3.1 Formal Education.....                        | 23.93        | 73        |
| Enrolment                                        |              |           |
| 3.1.1 Vocational enrolment .....                 | 22.19        | 63        |
| 3.1.2 Tertiary enrolment .....                   | 24.85        | 78        |
| Quality                                          |              |           |
| 3.1.3 Tertiary education expenditure .....       | 19.01        | 67        |
| 3.1.4 Reading, maths, and science .....          | n/a          | n/a       |
| 3.1.5 University ranking .....                   | 29.69        | 39        |
| 3.2 Lifelong Learning.....                       | 43.97        | 59        |
| 3.2.1 Quality of management schools .....        | 42.78        | 60        |
| 3.2.2 Prevalence of training in firms .....      | n/a          | n/a       |
| 3.2.3 Employee development .....                 | 45.16        | 50        |
| 3.3 Access to Growth Opportunities .....         | 41.62        | 59        |
| Empowerment                                      |              |           |
| 3.3.1 Delegation of authority .....              | 50.93        | 46        |
| 3.3.2 Personal rights .....                      | n/a          | n/a       |
| Collaboration                                    |              |           |
| 3.3.3 Use of virtual social networks .....       | 81.71        | 32        |
| 3.3.4 Use of virtual professional networks ..... | 24.52        | 42        |
| 3.3.5 Collaboration within organisations .....   | 24.66        | 97        |
| 3.3.6 Collaboration across organisations .....   | 26.30        | 80        |

|                                       |              |           |
|---------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                  | <b>56.81</b> | <b>48</b> |
| 4.1 Sustainability .....              | 52.39        | 39        |
| 4.1.1 Pension system .....            | 65.31        | 39        |
| 4.1.2 Social protection .....         | 44.89        | 51        |
| 4.1.3 Brain retention .....           | 46.99        | 52        |
| 4.2 Lifestyle .....                   | 61.22        | 58        |
| 4.2.1 Environmental performance ..... | 60.24        | 48        |
| 4.2.2 Personal safety .....           | n/a          | n/a       |
| 4.2.3 Physician density .....         | 27.71        | 69        |
| 4.2.4 Sanitation .....                | 95.70        | 48        |

|                                                          |              |           |
|----------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>            | <b>60.13</b> | <b>24</b> |
| 5.1 Mid-Level Skills .....                               | 71.81        | 4         |
| 5.1.1 Workforce with secondary education .....           | 72.18        | 19        |
| 5.1.2 Population with secondary education .....          | n/a          | n/a       |
| 5.1.3 Technicians and associate professionals .....      | 71.43        | 16        |
| 5.1.4 Labour productivity per employee .....             | n/a          | n/a       |
| 5.2 Employability.....                                   | 48.46        | 51        |
| 5.2.1 Ease of finding skilled employees .....            | 35.35        | 89        |
| 5.2.2 Relevance of education system to the economy ..... | 55.49        | 32        |
| 5.2.3 Skills matching with secondary education .....     | 51.91        | 39        |
| 5.2.4 Skills matching with tertiary education .....      | 51.08        | 54        |

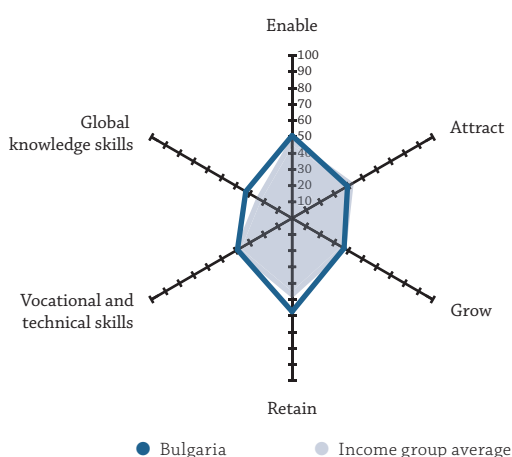
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|------------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>28.68</b> | <b>51</b> |
| 6.1 High-Level Skills .....                          | 37.93        | 41        |
| 6.1.1 Workforce with tertiary education .....        | 31.75        | 60        |
| 6.1.2 Population with tertiary education .....       | n/a          | n/a       |
| 6.1.3 Professionals .....                            | 46.07        | 34        |
| 6.1.4 Researchers .....                              | n/a          | n/a       |
| 6.1.5 Senior officials and managers .....            | 44.05        | 23        |
| 6.1.6 Availability of scientists and engineers ..... | 29.85        | 86        |
| 6.2 Talent Impact.....                               | 19.44        | 61        |
| 6.2.1 Innovation output .....                        | 13.05        | 108       |
| 6.2.2 High-value exports .....                       | 32.54        | 21        |
| 6.2.3 New product entrepreneurial activity .....     | n/a          | n/a       |
| 6.2.4 New business density .....                     | 11.90        | 42        |
| 6.2.5 Scientific journal articles .....              | 20.24        | 41        |

# BULGARIA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>54</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>7.08</b>                |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>50.82</b> | <b>56</b> |
| 1.1 Regulatory Landscape.....                  | 50.27        | 60        |
| 1.1.1 Government effectiveness.....            | 52.36        | 51        |
| 1.1.2 Business-government relations.....       | 33.11        | 114       |
| 1.1.3 Political stability.....                 | 65.28        | 63        |
| 1.1.4 Regulatory quality.....                  | 63.64        | 40        |
| 1.1.5 Corruption.....                          | 36.99        | 57        |
| 1.2 Market Landscape.....                      | 50.69        | 58        |
| 1.2.1 Competition intensity.....               | 58.96        | 85        |
| 1.2.2 Ease of doing business.....              | 73.71        | 45        |
| 1.2.3 Cluster development.....                 | 37.87        | 65        |
| 1.2.4 R&D expenditure.....                     | 18.06        | 45        |
| 1.2.5 ICT infrastructure.....                  | 65.52        | 57        |
| 1.2.6 Technology utilisation.....              | 50.05        | 61        |
| 1.3 Business and Labour Landscape.....         | 51.48        | 65        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 72.33        | 50        |
| 1.3.2 Ease of redundancy.....                  | 100.00       | 1         |
| 1.3.3 Active labour market policies.....       | 41.88        | 63        |
| 1.3.4 Labour-employer cooperation.....         | 25.77        | 103       |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 28.92        | 107       |
| 1.3.6 Relationship of pay to productivity..... | 40.01        | 83        |
| <b>2 ATTRACT.....</b>                          | <b>39.39</b> | <b>89</b> |
| 2.1 External Openness.....                     | 33.96        | 79        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 64.14        | 45        |
| 2.1.2 Prevalence of foreign ownership.....     | 56.22        | 69        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 4.34         | 80        |
| 2.1.4 International students.....              | 22.95        | 41        |
| 2.1.5 Brain gain.....                          | 22.13        | 108       |
| 2.2 Internal Openness.....                     | 44.82        | 84        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 52.94        | 47        |
| 2.2.2 Tolerance of immigrants.....             | 12.16        | 116       |
| 2.2.3 Social mobility.....                     | 26.28        | 119       |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 83.49        | 25        |
| 2.2.5 Gender earnings gap.....                 | 58.18        | 45        |
| 2.2.6 Leadership opportunities for women.....  | 35.89        | 75        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>20,329.34</b> |
| GDP (US\$ billions).....               | <b>56.83</b>     |
| GTCI score.....                        | <b>42.72</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>36.93</b> | <b>62</b> |
| 3.1 Formal Education.....                       | 39.11        | 40        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 61.45        | 18        |
| 3.1.2 Tertiary enrolment.....                   | 58.19        | 22        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 14.37        | 82        |
| 3.1.4 Reading, maths, and science.....          | 47.29        | 43        |
| 3.1.5 University ranking.....                   | 14.24        | 62        |
| 3.2 Lifelong Learning.....                      | 30.57        | 92        |
| 3.2.1 Quality of management schools.....        | 20.72        | 111       |
| 3.2.2 Prevalence of training in firms.....      | 51.85        | 26        |
| 3.2.3 Employee development.....                 | 19.14        | 111       |
| 3.3 Access to Growth Opportunities.....         | 41.12        | 63        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 34.22        | 93        |
| 3.3.2 Personal rights.....                      | 64.05        | 53        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 70.44        | 67        |
| 3.3.4 Use of virtual professional networks..... | 17.90        | 56        |
| 3.3.5 Collaboration within organisations.....   | 27.89        | 84        |
| 3.3.6 Collaboration across organisations.....   | 32.18        | 64        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>57.43</b> | <b>47</b> |
| 4.1 Sustainability.....              | 43.16        | 59        |
| 4.1.1 Pension system.....            | 78.57        | 30        |
| 4.1.2 Social protection.....         | 30.43        | 82        |
| 4.1.3 Brain retention.....           | 20.49        | 109       |
| 4.2 Lifestyle.....                   | 71.70        | 38        |
| 4.2.1 Environmental performance..... | 67.38        | 29        |
| 4.2.2 Personal safety.....           | 70.65        | 48        |
| 4.2.3 Physician density.....         | 63.83        | 11        |
| 4.2.4 Sanitation.....                | 84.95        | 76        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>38.82</b> | <b>63</b> |
| 5.1 Mid-Level Skills.....                               | 53.40        | 32        |
| 5.1.1 Workforce with secondary education.....           | 76.79        | 15        |
| 5.1.2 Population with secondary education.....          | 71.75        | 11        |
| 5.1.3 Technicians and associate professionals.....      | 41.52        | 54        |
| 5.1.4 Labour productivity per employee.....             | 23.53        | 58        |
| 5.2 Employability.....                                  | 24.23        | 109       |
| 5.2.1 Ease of finding skilled employees.....            | 14.95        | 123       |
| 5.2.2 Relevance of education system to the economy..... | 29.12        | 81        |
| 5.2.3 Skills matching with secondary education.....     | 33.47        | 87        |
| 5.2.4 Skills matching with tertiary education.....      | 19.39        | 116       |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>32.90</b> | <b>41</b> |
| 6.1 High-Level Skills.....                          | 36.40        | 44        |
| 6.1.1 Workforce with tertiary education.....        | 46.23        | 36        |
| 6.1.2 Population with tertiary education.....       | 39.73        | 35        |
| 6.1.3 Professionals.....                            | 43.54        | 38        |
| 6.1.4 Researchers.....                              | 27.13        | 35        |
| 6.1.5 Senior officials and managers.....            | 33.33        | 39        |
| 6.1.6 Availability of scientists and engineers..... | 28.42        | 90        |
| 6.2 Talent Impact.....                              | 29.41        | 41        |
| 6.2.1 Innovation output.....                        | 50.28        | 33        |
| 6.2.2 High-value exports.....                       | 14.44        | 54        |
| 6.2.3 New product entrepreneurial activity.....     | 15.45        | 76        |
| 6.2.4 New business density.....                     | 52.43        | 10        |
| 6.2.5 Scientific journal articles.....              | 14.46        | 49        |

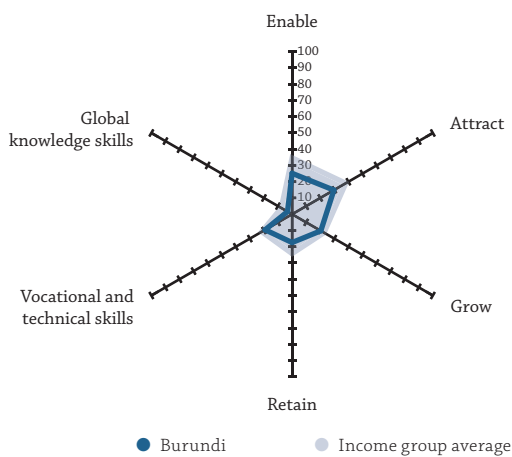


# BURUNDI

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>123</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>10.86</b>              |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....25.18 122</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 18.26  | 122  |
| 1.1.1 Government effectiveness.....            | 10.42  | 123  |
| 1.1.2 Business-government relations.....       | 28.26  | 119  |
| 1.1.3 Political stability.....                 | 16.44  | 122  |
| 1.1.4 Regulatory quality.....                  | 27.99  | 112  |
| 1.1.5 Corruption.....                          | 8.22   | 119  |
| 1.2 Market Landscape.....                      | 14.50  | 123  |
| 1.2.1 Competition intensity.....               | 32.22  | 123  |
| 1.2.2 Ease of doing business.....              | 28.83  | 119  |
| 1.2.3 Cluster development.....                 | 17.59  | 103  |
| 1.2.4 R&D expenditure.....                     | 2.51   | 96   |
| 1.2.5 ICT infrastructure.....                  | 5.85   | 121  |
| 1.2.6 Technology utilisation.....              | 0.00   | 125  |
| 1.3 Business and Labour Landscape.....         | 42.76  | 91   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 62.50  | 64   |
| 1.3.3 Active labour market policies.....       | 16.93  | 114  |
| 1.3.4 Labour-employer cooperation.....         | 31.55  | 87   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 26.22  | 110  |
| 1.3.6 Relationship of pay to productivity..... | 19.38  | 121  |
| <b>2 ATTRACT.....29.69 118</b>                 |        |      |
| 2.1 External Openness.....                     | 19.95  | 119  |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 28.92  | 118  |
| 2.1.2 Prevalence of foreign ownership.....     | 28.15  | 117  |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 5.56   | 70   |
| 2.1.4 International students.....              | 16.10  | 56   |
| 2.1.5 Brain gain.....                          | 21.00  | 113  |
| 2.2 Internal Openness.....                     | 39.44  | 106  |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 20.00  | 100  |
| 2.2.2 Tolerance of immigrants.....             | 55.41  | 62   |
| 2.2.3 Social mobility.....                     | 28.18  | 117  |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 4.63   | 104  |
| 2.2.5 Gender earnings gap.....                 | 100.00 | 1    |
| 2.2.6 Leadership opportunities for women.....  | 28.43  | 90   |

|                                        |               |
|----------------------------------------|---------------|
| GDP per capita (PPP US\$).....         | <b>770.94</b> |
| GDP (US\$ billions).....               | <b>3.48</b>   |
| GTCI score.....                        | <b>19.18</b>  |
| GTCI score (income group average)..... | <b>24.81</b>  |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....20.41 117</b>                     |       |      |
| 3.1 Formal Education.....                       | 12.26 | 100  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 14.62 | 80   |
| 3.1.2 Tertiary enrolment.....                   | 3.74  | 111  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 30.67 | 29   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 30.43 | 93   |
| 3.2.1 Quality of management schools.....        | 35.90 | 81   |
| 3.2.2 Prevalence of training in firms.....      | 37.73 | 44   |
| 3.2.3 Employee development.....                 | 17.66 | 116  |
| 3.3 Access to Growth Opportunities.....         | 18.54 | 122  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 32.92 | 97   |
| 3.3.2 Personal rights.....                      | 16.06 | 108  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 13.66 | 124  |
| 3.3.4 Use of virtual professional networks..... | 0.15  | 118  |
| 3.3.5 Collaboration within organisations.....   | 31.02 | 76   |
| 3.3.6 Collaboration across organisations.....   | 17.46 | 99   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....17.42 123</b>        |       |     |
| 4.1 Sustainability.....              | 11.89 | 124 |
| 4.1.1 Pension system.....            | 2.04  | 103 |
| 4.1.2 Social protection.....         | 13.56 | 116 |
| 4.1.3 Brain retention.....           | 20.05 | 110 |
| 4.2 Lifestyle.....                   | 22.96 | 120 |
| 4.2.1 Environmental performance..... | 0.00  | 124 |
| 4.2.2 Personal safety.....           | 45.49 | 98  |
| 4.2.3 Physician density.....         | 0.13  | 121 |
| 4.2.4 Sanitation.....                | 46.24 | 102 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....19.15 117</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 5.82  | 115 |
| 5.1.1 Workforce with secondary education.....           | n/a   | n/a |
| 5.1.2 Population with secondary education.....          | 2.71  | 102 |
| 5.1.3 Technicians and associate professionals.....      | 8.93  | 102 |
| 5.1.4 Labour productivity per employee.....             | n/a   | n/a |
| 5.2 Employability.....                                  | 32.48 | 87  |
| 5.2.1 Ease of finding skilled employees.....            | 30.85 | 100 |
| 5.2.2 Relevance of education system to the economy..... | 20.80 | 98  |
| 5.2.3 Skills matching with secondary education.....     | 32.96 | 88  |
| 5.2.4 Skills matching with tertiary education.....      | 45.30 | 69  |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....3.25 125</b>       |       |     |
| 6.1 High-Level Skills.....                          | 3.34  | 125 |
| 6.1.1 Workforce with tertiary education.....        | n/a   | n/a |
| 6.1.2 Population with tertiary education.....       | 0.34  | 105 |
| 6.1.3 Professionals.....                            | 0.00  | 121 |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 0.00  | 122 |
| 6.1.6 Availability of scientists and engineers..... | 13.03 | 118 |
| 6.2 Talent Impact.....                              | 3.17  | 118 |
| 6.2.1 Innovation output.....                        | n/a   | n/a |
| 6.2.2 High-value exports.....                       | 6.33  | 84  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....              | 0.00  | 125 |

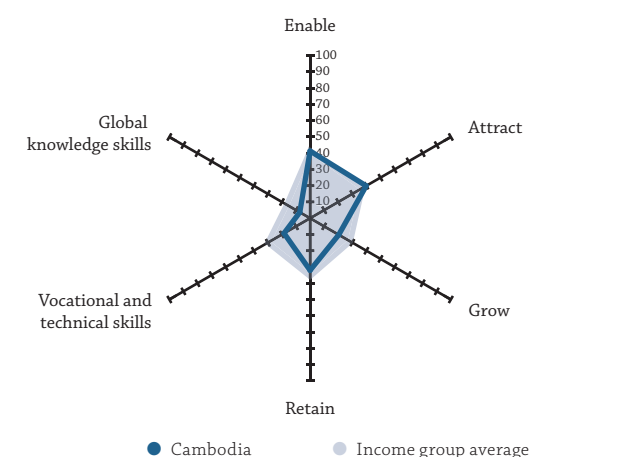
# CAMBODIA

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>107</b>                                    |
| Income group.....          | <b>Lower-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>16.01</b>                                  |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>4,001.76</b> |
| GDP (US\$ billions).....               | <b>22.16</b>    |
| GTCI score.....                        | <b>26.57</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....41.34</b>                      | <b>90</b> |      |
| 1.1 Regulatory Landscape.....                  | 37.89     | 100  |
| 1.1.1 Government effectiveness.....            | 28.04     | 104  |
| 1.1.2 Business-government relations.....       | 49.23     | 83   |
| 1.1.3 Political stability.....                 | 68.75     | 54   |
| 1.1.4 Regulatory quality.....                  | 36.60     | 96   |
| 1.1.5 Corruption.....                          | 6.85      | 121  |
| 1.2 Market Landscape.....                      | 37.45     | 98   |
| 1.2.1 Competition intensity.....               | 58.28     | 87   |
| 1.2.2 Ease of doing business.....              | 42.39     | 106  |
| 1.2.3 Cluster development.....                 | 46.95     | 46   |
| 1.2.4 R&D expenditure.....                     | 2.44      | 98   |
| 1.2.5 ICT infrastructure.....                  | 31.55     | 97   |
| 1.2.6 Technology utilisation.....              | 43.07     | 84   |
| 1.3 Business and Labour Landscape.....         | 48.68     | 75   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 66.67     | 58   |
| 1.3.2 Ease of redundancy.....                  | 62.50     | 64   |
| 1.3.3 Active labour market policies.....       | 32.80     | 81   |
| 1.3.4 Labour-employer cooperation.....         | 41.23     | 63   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 37.57     | 86   |
| 1.3.6 Relationship of pay to productivity..... | 51.32     | 60   |
| <b>2 ATTRACT.....39.84</b>                     | <b>83</b> |      |
| 2.1 External Openness.....                     | 43.06     | 46   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 61.98     | 51   |
| 2.1.2 Prevalence of foreign ownership.....     | 58.50     | 62   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 0.84      | 112  |
| 2.1.4 International students.....              | n/a       | n/a  |
| 2.1.5 Brain gain.....                          | 50.92     | 43   |
| 2.2 Internal Openness.....                     | 36.61     | 113  |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 31.76     | 81   |
| 2.2.2 Tolerance of immigrants.....             | 0.00      | 122  |
| 2.2.3 Social mobility.....                     | 35.16     | 104  |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 36.70     | 93   |
| 2.2.5 Gender earnings gap.....                 | 67.74     | 18   |
| 2.2.6 Leadership opportunities for women.....  | 48.30     | 50   |

|                                                 | Score      | Rank |
|-------------------------------------------------|------------|------|
| <b>3 GROW.....20.36</b>                         | <b>119</b> |      |
| 3.1 Formal Education.....                       | 4.11       | 120  |
| Enrolment                                       |            |      |
| 3.1.1 Vocational enrolment.....                 | 4.67       | 99   |
| 3.1.2 Tertiary enrolment.....                   | 10.21      | 95   |
| Quality                                         |            |      |
| 3.1.3 Tertiary education expenditure.....       | 1.56       | 111  |
| 3.1.4 Reading, maths, and science.....          | n/a        | n/a  |
| 3.1.5 University ranking.....                   | 0.00       | 78   |
| 3.2 Lifelong Learning.....                      | 23.99      | 117  |
| 3.2.1 Quality of management schools.....        | 15.37      | 117  |
| 3.2.2 Prevalence of training in firms.....      | 24.80      | 68   |
| 3.2.3 Employee development.....                 | 31.80      | 78   |
| 3.3 Access to Growth Opportunities.....         | 32.99      | 94   |
| Empowerment                                     |            |      |
| 3.3.1 Delegation of authority.....              | 30.05      | 104  |
| 3.3.2 Personal rights.....                      | 27.09      | 99   |
| Collaboration                                   |            |      |
| 3.3.3 Use of virtual social networks.....       | 70.53      | 65   |
| 3.3.4 Use of virtual professional networks..... | 1.98       | 104  |
| 3.3.5 Collaboration within organisations.....   | 38.26      | 55   |
| 3.3.6 Collaboration across organisations.....   | 30.04      | 71   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....32.05</b>            | <b>99</b> |     |
| 4.1 Sustainability.....              | 34.33     | 73  |
| 4.1.1 Pension system.....            | n/a       | n/a |
| 4.1.2 Social protection.....         | 21.09     | 104 |
| 4.1.3 Brain retention.....           | 47.56     | 48  |
| 4.2 Lifestyle.....                   | 29.78     | 106 |
| 4.2.1 Environmental performance..... | 26.34     | 111 |
| 4.2.2 Personal safety.....           | 45.60     | 96  |
| 4.2.3 Physician density.....         | 2.00      | 107 |
| 4.2.4 Sanitation.....                | 45.16     | 103 |

|                                                         |            |     |
|---------------------------------------------------------|------------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....18.51</b>      | <b>119</b> |     |
| 5.1 Mid-Level Skills.....                               | 7.71       | 113 |
| 5.1.1 Workforce with secondary education.....           | 6.73       | 107 |
| 5.1.2 Population with secondary education.....          | 5.85       | 96  |
| 5.1.3 Technicians and associate professionals.....      | 15.63      | 92  |
| 5.1.4 Labour productivity per employee.....             | 2.62       | 96  |
| 5.2 Employability.....                                  | 29.41      | 97  |
| 5.2.1 Ease of finding skilled employees.....            | 24.32      | 112 |
| 5.2.2 Relevance of education system to the economy..... | 31.93      | 73  |
| 5.2.3 Skills matching with secondary education.....     | 16.99      | 117 |
| 5.2.4 Skills matching with tertiary education.....      | 43.90      | 71  |

|                                                     |            |     |
|-----------------------------------------------------|------------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....7.32</b>           | <b>117</b> |     |
| 6.1 High-Level Skills.....                          | 7.31       | 117 |
| 6.1.1 Workforce with tertiary education.....        | 3.27       | 111 |
| 6.1.2 Population with tertiary education.....       | 0.68       | 103 |
| 6.1.3 Professionals.....                            | 10.67      | 102 |
| 6.1.4 Researchers.....                              | 0.28       | 95  |
| 6.1.5 Senior officials and managers.....            | 11.31      | 84  |
| 6.1.6 Availability of scientists and engineers..... | 17.64      | 112 |
| 6.2 Talent Impact.....                              | 7.33       | 106 |
| 6.2.1 Innovation output.....                        | 20.97      | 82  |
| 6.2.2 High-value exports.....                       | 0.78       | 114 |
| 6.2.3 New product entrepreneurial activity.....     | n/a        | n/a |
| 6.2.4 New business density.....                     | n/a        | n/a |
| 6.2.5 Scientific journal articles.....              | 0.25       | 112 |



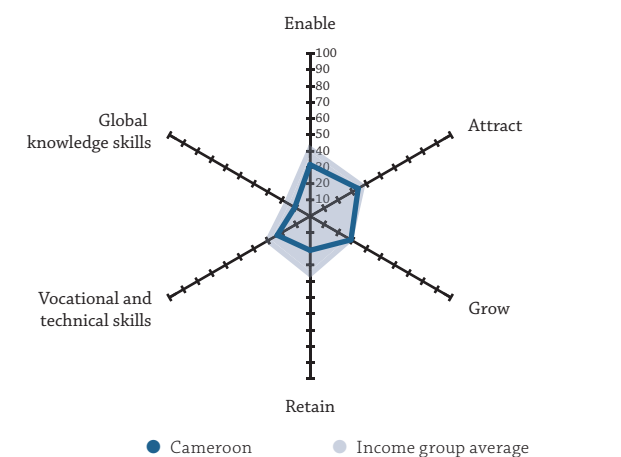
# CAMEROON

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>113</b>                 |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>24.05</b>               |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>3,694.20</b> |
| GDP (US\$ billions) .....               | <b>34.80</b>    |
| GTCI score.....                         | <b>25.02</b>    |
| GTCI score (income group average) ..... | <b>31.64</b>    |

GTCI 2019 Country Profile by Pillar



|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>1 ENABLE.....31.76 117</b>                   |       |      |
| 1.1 Regulatory Landscape.....                   | 32.19 | 109  |
| 1.1.1 Government effectiveness .....            | 26.30 | 109  |
| 1.1.2 Business-government relations .....       | 50.77 | 78   |
| 1.1.3 Political stability .....                 | 42.59 | 105  |
| 1.1.4 Regulatory quality .....                  | 28.95 | 110  |
| 1.1.5 Corruption .....                          | 12.33 | 116  |
| 1.2 Market Landscape.....                       | 31.54 | 110  |
| 1.2.1 Competition intensity .....               | 60.46 | 79   |
| 1.2.2 Ease of doing business .....              | 29.38 | 118  |
| 1.2.3 Cluster development .....                 | 19.37 | 99   |
| 1.2.4 R&D expenditure .....                     | n/a   | n/a  |
| 1.2.5 ICT infrastructure .....                  | 14.76 | 113  |
| 1.2.6 Technology utilisation .....              | 33.73 | 106  |
| 1.3 Business and Labour Landscape.....          | 31.54 | 115  |
| Labour Market                                   |       |      |
| 1.3.1 Ease of hiring .....                      | 72.33 | 50   |
| 1.3.2 Ease of redundancy .....                  | 12.50 | 117  |
| 1.3.3 Active labour market policies .....       | 25.22 | 101  |
| 1.3.4 Labour-employer cooperation .....         | 29.00 | 95   |
| Management Practice                             |       |      |
| 1.3.5 Professional management .....             | 23.87 | 118  |
| 1.3.6 Relationship of pay to productivity ..... | 26.34 | 114  |
| <b>2 ATTRACT.....34.17 106</b>                  |       |      |
| 2.1 External Openness .....                     | 26.21 | 107  |
| Attract Business                                |       |      |
| 2.1.1 FDI and technology transfer .....         | 35.78 | 110  |
| 2.1.2 Prevalence of foreign ownership .....     | 58.63 | 60   |
| Attract People                                  |       |      |
| 2.1.3 Migrant stock .....                       | 4.50  | 79   |
| 2.1.4 International students .....              | 5.57  | 75   |
| 2.1.5 Brain gain .....                          | 26.59 | 101  |
| 2.2 Internal Openness.....                      | 42.13 | 98   |
| Social Inclusion                                |       |      |
| 2.2.1 Tolerance of minorities .....             | 15.29 | 105  |
| 2.2.2 Tolerance of immigrants .....             | 62.16 | 52   |
| 2.2.3 Social mobility.....                      | 43.80 | 81   |
| Gender Equality                                 |       |      |
| 2.2.4 Female graduates .....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap .....                 | 59.86 | 38   |
| 2.2.6 Leadership opportunities for women .....  | 29.52 | 87   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....29.02 88</b>                      |       |      |
| 3.1 Formal Education.....                       | 16.08 | 93   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 45.11 | 30   |
| 3.1.2 Tertiary enrolment.....                   | 13.74 | 90   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 5.46  | 107  |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 42.74 | 61   |
| 3.2.1 Quality of management schools.....        | 50.47 | 41   |
| 3.2.2 Prevalence of training in firms .....     | 45.12 | 35   |
| 3.2.3 Employee development.....                 | 32.64 | 76   |
| 3.3 Access to Growth Opportunities .....        | 28.23 | 109  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 25.94 | 111  |
| 3.3.2 Personal rights.....                      | 27.87 | 98   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 53.59 | 102  |
| 3.3.4 Use of virtual professional networks..... | 3.52  | 97   |
| 3.3.5 Collaboration within organisations .....  | 41.71 | 45   |
| 3.3.6 Collaboration across organisations .....  | 16.76 | 101  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....20.98 119</b>        |       |     |
| 4.1 Sustainability .....             | 18.42 | 116 |
| 4.1.1 Pension system .....           | 14.29 | 83  |
| 4.1.2 Social protection .....        | 18.45 | 109 |
| 4.1.3 Brain retention .....          | 22.52 | 105 |
| 4.2 Lifestyle .....                  | 23.54 | 117 |
| 4.2.1 Environmental performance..... | 22.30 | 116 |
| 4.2.2 Personal safety .....          | 36.43 | 108 |
| 4.2.3 Physician density .....        | 1.04  | 115 |
| 4.2.4 Sanitation .....               | 34.41 | 111 |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....23.34 112</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 5.07  | 117 |
| 5.1.1 Workforce with secondary education .....           | 5.34  | 109 |
| 5.1.2 Population with secondary education .....          | 6.56  | 94  |
| 5.1.3 Technicians and associate professionals .....      | n/a   | n/a |
| 5.1.4 Labour productivity per employee .....             | 3.29  | 94  |
| 5.2 Employability.....                                   | 41.61 | 68  |
| 5.2.1 Ease of finding skilled employees .....            | 60.15 | 43  |
| 5.2.2 Relevance of education system to the economy ..... | 31.10 | 76  |
| 5.2.3 Skills matching with secondary education.....      | 34.87 | 82  |
| 5.2.4 Skills matching with tertiary education .....      | 40.31 | 79  |

|                                                      |       |     |
|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....10.89 101</b>      |       |     |
| 6.1 High-Level Skills .....                          | 10.66 | 111 |
| 6.1.1 Workforce with tertiary education .....        | 3.72  | 109 |
| 6.1.2 Population with tertiary education .....       | 0.51  | 104 |
| 6.1.3 Professionals.....                             | n/a   | n/a |
| 6.1.4 Researchers.....                               | n/a   | n/a |
| 6.1.5 Senior officials and managers .....            | n/a   | n/a |
| 6.1.6 Availability of scientists and engineers ..... | 27.75 | 94  |
| 6.2 Talent Impact.....                               | 11.12 | 88  |
| 6.2.1 Innovation output.....                         | 16.38 | 95  |
| 6.2.2 High-value exports .....                       | 6.73  | 81  |
| 6.2.3 New product entrepreneurial activity .....     | 20.30 | 66  |
| 6.2.4 New business density .....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....               | 1.08  | 92  |

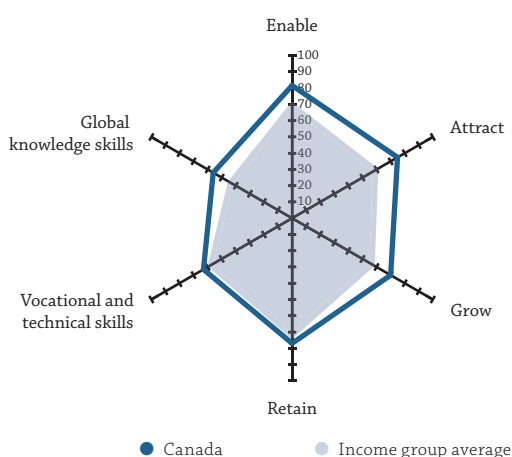
# CANADA

Key Indicators

|                            |                         |
|----------------------------|-------------------------|
| Rank (out of 125).....     | <b>15</b>               |
| Income group.....          | <b>High income</b>      |
| Regional group.....        | <b>Northern America</b> |
| Population (millions)..... | <b>36.71</b>            |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>46,377.65</b> |
| GDP (US\$ billions) .....               | <b>1,653.04</b>  |
| GTCI score.....                         | <b>70.43</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....81.66</b>                      | <b>11</b> |      |
| 1.1 Regulatory Landscape.....                  | 88.45     | 7    |
| 1.1.1 Government effectiveness .....           | 89.83     | 9    |
| 1.1.2 Business-government relations .....      | 79.25     | 17   |
| 1.1.3 Political stability .....                | 93.29     | 7    |
| 1.1.4 Regulatory quality .....                 | 89.47     | 10   |
| 1.1.5 Corruption .....                         | 90.41     | 8    |
| 1.2 Market Landscape.....                      | 70.64     | 21   |
| 1.2.1 Competition intensity .....              | 77.69     | 31   |
| 1.2.2 Ease of doing business .....             | 86.96     | 15   |
| 1.2.3 Cluster development .....                | 65.68     | 22   |
| 1.2.4 R&D expenditure .....                    | 37.66     | 22   |
| 1.2.5 ICT infrastructure .....                 | 79.52     | 26   |
| 1.2.6 Technology utilisation .....             | 76.35     | 26   |
| 1.3 Business and Labour Landscape.....         | 85.90     | 8    |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring .....                     | 89.00     | 27   |
| 1.3.2 Ease of redundancy .....                 | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 76.30     | 17   |
| 1.3.4 Labour-employer cooperation .....        | 75.56     | 14   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 90.37     | 12   |
| 1.3.6 Relationship of pay to productivity..... | 84.18     | 8    |
| <b>2 ATTRACT.....74.91</b>                     | <b>7</b>  |      |
| 2.1 External Openness .....                    | 70.81     | 10   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 77.40     | 19   |
| 2.1.2 Prevalence of foreign ownership .....    | 82.75     | 16   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 44.25     | 16   |
| 2.1.4 International students.....              | n/a       | n/a  |
| 2.1.5 Brain gain.....                          | 78.86     | 9    |
| 2.2 Internal Openness.....                     | 79.00     | 5    |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities .....            | 72.94     | 12   |
| 2.2.2 Tolerance of immigrants.....             | 95.95     | 3    |
| 2.2.3 Social mobility.....                     | 91.70     | 7    |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates .....                   | n/a       | n/a  |
| 2.2.5 Gender earnings gap .....                | 60.57     | 34   |
| 2.2.6 Leadership opportunities for women.....  | 73.82     | 16   |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....70.03</b>                         | <b>12</b> |      |
| 3.1 Formal Education.....                       | 53.98     | 17   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment .....                | 9.81      | 87   |
| 3.1.2 Tertiary enrolment.....                   | n/a       | n/a  |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 38.47     | 14   |
| 3.1.4 Reading, maths, and science .....         | 86.70     | 4    |
| 3.1.5 University ranking .....                  | 80.95     | 6    |
| 3.2 Lifelong Learning.....                      | 77.10     | 14   |
| 3.2.1 Quality of management schools.....        | 83.71     | 8    |
| 3.2.2 Prevalence of training in firms .....     | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 70.48     | 21   |
| 3.3 Access to Growth Opportunities .....        | 79.00     | 13   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 84.08     | 10   |
| 3.3.2 Personal rights.....                      | 95.68     | 4    |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 90.32     | 11   |
| 3.3.4 Use of virtual professional networks..... | 79.67     | 7    |
| 3.3.5 Collaboration within organisations .....  | 68.76     | 22   |
| 3.3.6 Collaboration across organisations .....  | 55.49     | 26   |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....76.99</b>            | <b>18</b> |    |
| 4.1 Sustainability .....             | 76.01     | 18 |
| 4.1.1 Pension system.....            | 66.33     | 37 |
| 4.1.2 Social protection .....        | 83.93     | 13 |
| 4.1.3 Brain retention .....          | 77.75     | 14 |
| 4.2 Lifestyle .....                  | 77.97     | 24 |
| 4.2.1 Environmental performance..... | 74.60     | 24 |
| 4.2.2 Personal safety .....          | 97.93     | 11 |
| 4.2.3 Physician density .....        | 40.42     | 47 |
| 4.2.4 Sanitation .....               | 98.92     | 21 |

|                                                          |           |    |
|----------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 62.97</b>      | <b>19</b> |    |
| 5.1 Mid-Level Skills .....                               | 47.80     | 46 |
| 5.1.1 Workforce with secondary education .....           | 33.12     | 76 |
| 5.1.2 Population with secondary education .....          | 32.81     | 61 |
| 5.1.3 Technicians and associate professionals .....      | 74.11     | 14 |
| 5.1.4 Labour productivity per employee .....             | 51.16     | 20 |
| 5.2 Employability.....                                   | 78.15     | 12 |
| 5.2.1 Ease of finding skilled employees .....            | 87.24     | 10 |
| 5.2.2 Relevance of education system to the economy ..... | 79.83     | 8  |
| 5.2.3 Skills matching with secondary education.....      | 68.61     | 18 |
| 5.2.4 Skills matching with tertiary education .....      | 76.86     | 19 |

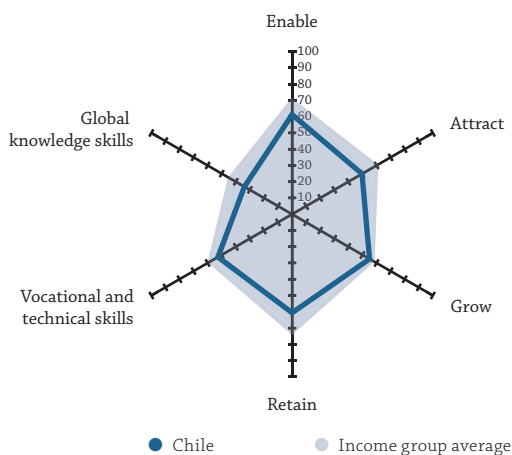
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|------------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>56.03</b> | <b>12</b> |
| 6.1 High-Level Skills .....                          | 69.25        | 4         |
| 6.1.1 Workforce with tertiary education .....        | 100.00       | 1         |
| 6.1.2 Population with tertiary education .....       | 79.12        | 2         |
| 6.1.3 Professionals.....                             | 50.84        | 23        |
| 6.1.4 Researchers.....                               | 55.14        | 16        |
| 6.1.5 Senior officials and managers .....            | 47.62        | 20        |
| 6.1.6 Availability of scientists and engineers ..... | 82.80        | 4         |
| 6.2 Talent Impact.....                               | 42.80        | 22        |
| 6.2.1 Innovation output.....                         | 54.67        | 25        |
| 6.2.2 High-value exports .....                       | 23.47        | 35        |
| 6.2.3 New product entrepreneurial activity .....     | 73.03        | 6         |
| 6.2.4 New business density .....                     | 0.24         | 99        |
| 6.2.5 Scientific journal articles.....               | 62.60        | 11        |

# CHILE

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>32</b>                              |
| Income group.....          | <b>High income</b>                     |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>18.05</b>                           |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....61.30</b>                      | <b>35</b> |      |
| 1.1 Regulatory Landscape.....                  | 74.22     | 22   |
| 1.1.1 Government effectiveness.....            | 70.47     | 31   |
| 1.1.2 Business-government relations.....       | 73.73     | 22   |
| 1.1.3 Political stability.....                 | 76.39     | 37   |
| 1.1.4 Regulatory quality.....                  | 80.62     | 19   |
| 1.1.5 Corruption.....                          | 69.86     | 24   |
| 1.2 Market Landscape.....                      | 52.23     | 50   |
| 1.2.1 Competition intensity.....               | 71.11     | 57   |
| 1.2.2 Ease of doing business.....              | 72.47     | 50   |
| 1.2.3 Cluster development.....                 | 27.65     | 90   |
| 1.2.4 R&D expenditure.....                     | 8.31      | 69   |
| 1.2.5 ICT infrastructure.....                  | 65.01     | 58   |
| 1.2.6 Technology utilisation.....              | 68.83     | 35   |
| 1.3 Business and Labour Landscape.....         | 57.44     | 43   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 66.67     | 58   |
| 1.3.2 Ease of redundancy.....                  | 75.00     | 45   |
| 1.3.3 Active labour market policies.....       | 35.00     | 75   |
| 1.3.4 Labour-employer cooperation.....         | 42.46     | 59   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 61.32     | 30   |
| 1.3.6 Relationship of pay to productivity..... | 64.22     | 36   |
| <b>2 ATTRACT.....49.68</b>                     | <b>40</b> |      |
| 2.1 External Openness.....                     | 45.72     | 37   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 76.22     | 20   |
| 2.1.2 Prevalence of foreign ownership.....     | 84.22     | 13   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 5.45      | 71   |
| 2.1.4 International students.....              | 1.72      | 90   |
| 2.1.5 Brain gain.....                          | 60.97     | 26   |
| 2.2 Internal Openness.....                     | 53.64     | 48   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 70.59     | 14   |
| 2.2.2 Tolerance of immigrants.....             | 71.62     | 34   |
| 2.2.3 Social mobility.....                     | 52.29     | 55   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 70.34     | 66   |
| 2.2.5 Gender earnings gap.....                 | 42.77     | 88   |
| 2.2.6 Leadership opportunities for women.....  | 14.25     | 116  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>24,084.97</b> |
| GDP (US\$ billions).....               | <b>277.08</b>    |
| GTCI score.....                        | <b>52.20</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....55.04</b>                         | <b>27</b> |      |
| 3.1 Formal Education.....                       | 46.59     | 32   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 40.93     | 36   |
| 3.1.2 Tertiary enrolment.....                   | 73.96     | 6    |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 29.37     | 34   |
| 3.1.4 Reading, maths, and science.....          | 48.78     | 41   |
| 3.1.5 University ranking.....                   | 39.89     | 31   |
| 3.2 Lifelong Learning.....                      | 62.36     | 26   |
| 3.2.1 Quality of management schools.....        | 69.98     | 26   |
| 3.2.2 Prevalence of training in firms.....      | 71.37     | 9    |
| 3.2.3 Employee development.....                 | 45.74     | 48   |
| 3.3 Access to Growth Opportunities.....         | 56.16     | 31   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 53.68     | 38   |
| 3.3.2 Personal rights.....                      | 90.05     | 17   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 82.77     | 29   |
| 3.3.4 Use of virtual professional networks..... | 47.19     | 18   |
| 3.3.5 Collaboration within organisations.....   | 26.24     | 90   |
| 3.3.6 Collaboration across organisations.....   | 37.04     | 48   |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....60.64</b>            | <b>40</b> |    |
| 4.1 Sustainability.....              | 61.29     | 31 |
| 4.1.1 Pension system.....            | 59.18     | 43 |
| 4.1.2 Social protection.....         | 46.45     | 50 |
| 4.1.3 Brain retention.....           | 78.24     | 13 |
| 4.2 Lifestyle.....                   | 59.99     | 61 |
| 4.2.1 Environmental performance..... | 50.11     | 71 |
| 4.2.2 Personal safety.....           | 73.58     | 44 |
| 4.2.3 Physician density.....         | 16.27     | 84 |
| 4.2.4 Sanitation.....                | 100.00    | 1  |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....52.64</b>      | <b>32</b> |    |
| 5.1 Mid-Level Skills.....                               | 50.42     | 39 |
| 5.1.1 Workforce with secondary education.....           | 69.58     | 23 |
| 5.1.2 Population with secondary education.....          | 50.50     | 33 |
| 5.1.3 Technicians and associate professionals.....      | 52.23     | 35 |
| 5.1.4 Labour productivity per employee.....             | 29.38     | 52 |
| 5.2 Employability.....                                  | 54.86     | 37 |
| 5.2.1 Ease of finding skilled employees.....            | 74.86     | 21 |
| 5.2.2 Relevance of education system to the economy..... | 29.23     | 80 |
| 5.2.3 Skills matching with secondary education.....     | 43.30     | 58 |
| 5.2.4 Skills matching with tertiary education.....      | 72.06     | 23 |

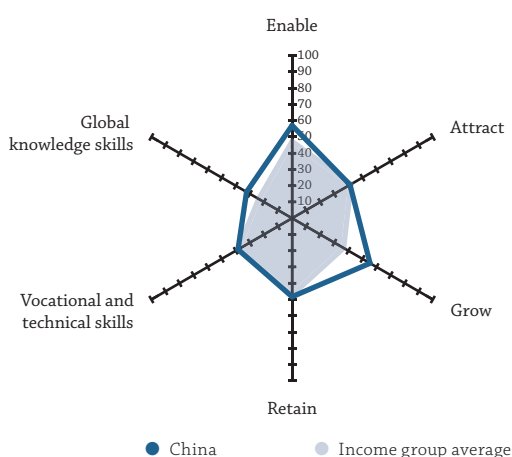
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|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....33.88</b>          | <b>38</b> |    |
| 6.1 High-Level Skills.....                          | 27.90     | 64 |
| 6.1.1 Workforce with tertiary education.....        | 25.52     | 74 |
| 6.1.2 Population with tertiary education.....       | 29.03     | 56 |
| 6.1.3 Professionals.....                            | 31.18     | 53 |
| 6.1.4 Researchers.....                              | 6.00      | 64 |
| 6.1.5 Senior officials and managers.....            | 11.90     | 81 |
| 6.1.6 Availability of scientists and engineers..... | 63.76     | 22 |
| 6.2 Talent Impact.....                              | 39.87     | 27 |
| 6.2.1 Innovation output.....                        | 34.63     | 52 |
| 6.2.2 High-value exports.....                       | 12.81     | 61 |
| 6.2.3 New product entrepreneurial activity.....     | 93.97     | 2  |
| 6.2.4 New business density.....                     | 42.99     | 14 |
| 6.2.5 Scientific journal articles.....              | 14.94     | 48 |

# CHINA

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>45</b>                                     |
| Income group.....          | <b>Upper-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>1,386.40</b>                               |

GTCI 2019 Country Profile by Pillar



|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>1 ENABLE.....57.07 43</b>                           |       |      |
| 1.1 Regulatory Landscape.....50.32 59                  |       |      |
| 1.1.1 Government effectiveness.....54.09 47            |       |      |
| 1.1.2 Business-government relations.....69.09 33       |       |      |
| 1.1.3 Political stability.....52.55 87                 |       |      |
| 1.1.4 Regulatory quality.....41.63 84                  |       |      |
| 1.1.5 Corruption.....34.25 61                          |       |      |
| 1.2 Market Landscape.....59.39 36                      |       |      |
| 1.2.1 Competition intensity.....78.05 30               |       |      |
| 1.2.2 Ease of doing business.....61.82 70              |       |      |
| 1.2.3 Cluster development.....64.32 25                 |       |      |
| 1.2.4 R&D expenditure.....49.38 14                     |       |      |
| 1.2.5 ICT infrastructure.....49.62 72                  |       |      |
| 1.2.6 Technology utilisation.....53.15 55              |       |      |
| 1.3 Business and Labour Landscape.....61.50 36         |       |      |
| Labour Market                                          |       |      |
| 1.3.1 Ease of hiring.....89.00 27                      |       |      |
| 1.3.2 Ease of redundancy.....37.50 104                 |       |      |
| 1.3.3 Active labour market policies.....70.26 23       |       |      |
| 1.3.4 Labour-employer cooperation.....48.24 47         |       |      |
| Management Practice                                    |       |      |
| 1.3.5 Professional management.....54.06 50             |       |      |
| 1.3.6 Relationship of pay to productivity.....69.97 24 |       |      |
| <b>2 ATTRACT.....41.15 76</b>                          |       |      |
| 2.1 External Openness.....37.66 68                     |       |      |
| Attract Business                                       |       |      |
| 2.1.1 FDI and technology transfer.....63.69 47         |       |      |
| 2.1.2 Prevalence of foreign ownership.....58.02 65     |       |      |
| Attract People                                         |       |      |
| 2.1.3 Migrant stock.....0.00 125                       |       |      |
| 2.1.4 International students.....1.44 93               |       |      |
| 2.1.5 Brain gain.....65.14 22                          |       |      |
| 2.2 Internal Openness.....44.64 86                     |       |      |
| Social Inclusion                                       |       |      |
| 2.2.1 Tolerance of minorities.....20.00 100            |       |      |
| 2.2.2 Tolerance of immigrants.....31.08 100            |       |      |
| 2.2.3 Social mobility.....55.56 44                     |       |      |
| Gender Equality                                        |       |      |
| 2.2.4 Female graduates.....59.38 79                    |       |      |
| 2.2.5 Gender earnings gap.....54.72 56                 |       |      |
| 2.2.6 Leadership opportunities for women.....47.10 52  |       |      |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>16,806.74</b> |
| GDP (US\$ billions).....               | <b>12,237.70</b> |
| GTCI score.....                        | <b>45.44</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW.....55.37 24</b>                              |       |      |
| 3.1 Formal Education.....61.57 8                        |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment.....41.17 35                 |       |      |
| 3.1.2 Tertiary enrolment.....39.37 54                   |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure.....n/a n/a        |       |      |
| 3.1.4 Reading, maths, and science.....82.46 7           |       |      |
| 3.1.5 University ranking.....83.27 3                    |       |      |
| 3.2 Lifelong Learning.....68.92 22                      |       |      |
| 3.2.1 Quality of management schools.....48.72 47        |       |      |
| 3.2.2 Prevalence of training in firms.....100.00 1      |       |      |
| 3.2.3 Employee development.....58.03 33                 |       |      |
| 3.3 Access to Growth Opportunities.....35.63 84         |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority.....51.22 43              |       |      |
| 3.3.2 Personal rights.....0.00 124                      |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks.....40.97 115      |       |      |
| 3.3.4 Use of virtual professional networks.....0.69 115 |       |      |
| 3.3.5 Collaboration within organisations.....54.06 30   |       |      |
| 3.3.6 Collaboration across organisations.....66.87 18   |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....48.30 62</b>                 |  |  |
| 4.1 Sustainability.....48.54 47              |  |  |
| 4.1.1 Pension system.....25.51 67            |  |  |
| 4.1.2 Social protection.....57.75 35         |  |  |
| 4.1.3 Brain retention.....62.37 33           |  |  |
| 4.2 Lifestyle.....48.06 87                   |  |  |
| 4.2.1 Environmental performance.....38.86 94 |  |  |
| 4.2.2 Personal safety.....51.50 88           |  |  |
| 4.2.3 Physician density.....28.76 67         |  |  |
| 4.2.4 Sanitation.....73.12 90                |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....38.41 67</b>           |  |  |
| 5.1 Mid-Level Skills.....17.57 98                               |  |  |
| 5.1.1 Workforce with secondary education.....n/a n/a            |  |  |
| 5.1.2 Population with secondary education.....19.12 86          |  |  |
| 5.1.3 Technicians and associate professionals.....n/a n/a       |  |  |
| 5.1.4 Labour productivity per employee.....16.02 71             |  |  |
| 5.2 Employability.....59.26 31                                  |  |  |
| 5.2.1 Ease of finding skilled employees.....63.13 37            |  |  |
| 5.2.2 Relevance of education system to the economy.....57.69 28 |  |  |
| 5.2.3 Skills matching with secondary education.....63.33 24     |  |  |
| 5.2.4 Skills matching with tertiary education.....52.89 45      |  |  |

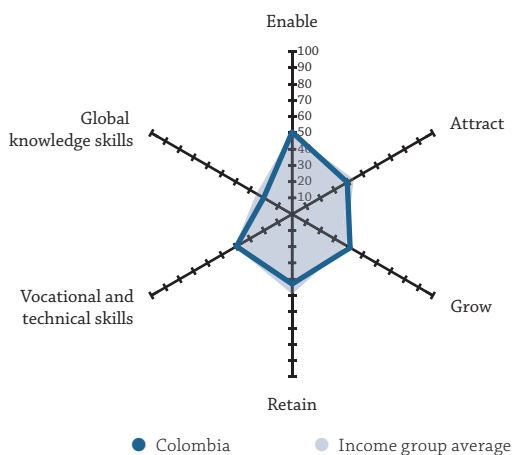
|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....32.35 43</b>               |  |  |
| 6.1 High-Level Skills.....22.28 80                          |  |  |
| 6.1.1 Workforce with tertiary education.....n/a n/a         |  |  |
| 6.1.2 Population with tertiary education.....13.07 86       |  |  |
| 6.1.3 Professionals.....14.33 91                            |  |  |
| 6.1.4 Researchers.....14.54 46                              |  |  |
| 6.1.5 Senior officials and managers.....8.93 92             |  |  |
| 6.1.6 Availability of scientists and engineers.....60.54 28 |  |  |
| 6.2 Talent Impact.....42.42 23                              |  |  |
| 6.2.1 Innovation output.....72.73 10                        |  |  |
| 6.2.2 High-value exports.....45.80 11                       |  |  |
| 6.2.3 New product entrepreneurial activity.....38.87 42     |  |  |
| 6.2.4 New business density.....n/a n/a                      |  |  |
| 6.2.5 Scientific journal articles.....12.28 50              |  |  |

# COLOMBIA

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>65</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>49.07</b>                           |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>50.50</b> | <b>59</b> |
| 1.1 Regulatory Landscape.....                  | 46.89        | 73        |
| 1.1.1 Government effectiveness.....            | 45.66        | 67        |
| 1.1.2 Business-government relations.....       | 60.26        | 56        |
| 1.1.3 Political stability.....                 | 42.36        | 107       |
| 1.1.4 Regulatory quality.....                  | 57.42        | 51        |
| 1.1.5 Corruption.....                          | 28.77        | 73        |
| 1.2 Market Landscape.....                      | 48.05        | 64        |
| 1.2.1 Competition intensity.....               | 80.67        | 19        |
| 1.2.2 Ease of doing business.....              | 69.22        | 54        |
| 1.2.3 Cluster development.....                 | 34.89        | 73        |
| 1.2.4 R&D expenditure.....                     | 6.04         | 79        |
| 1.2.5 ICT infrastructure.....                  | 53.44        | 70        |
| 1.2.6 Technology utilisation.....              | 44.03        | 77        |
| 1.3 Business and Labour Landscape.....         | 56.57        | 47        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 89.00        | 27        |
| 1.3.2 Ease of redundancy.....                  | 100.00       | 1         |
| 1.3.3 Active labour market policies.....       | 32.88        | 80        |
| 1.3.4 Labour-employer cooperation.....         | 41.78        | 62        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 39.02        | 82        |
| 1.3.6 Relationship of pay to productivity..... | 36.73        | 89        |
| <b>2 ATTRACT.....</b>                          | <b>39.23</b> | <b>90</b> |
| 2.1 External Openness.....                     | 29.63        | 94        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 53.59        | 71        |
| 2.1.2 Prevalence of foreign ownership.....     | 54.52        | 78        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 0.45         | 118       |
| 2.1.4 International students.....              | 0.69         | 97        |
| 2.1.5 Brain gain.....                          | 38.91        | 74        |
| 2.2 Internal Openness.....                     | 48.82        | 68        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 32.94        | 76        |
| 2.2.2 Tolerance of immigrants.....             | 66.22        | 44        |
| 2.2.3 Social mobility.....                     | 35.19        | 103       |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 70.98        | 61        |
| 2.2.5 Gender earnings gap.....                 | 61.53        | 31        |
| 2.2.6 Leadership opportunities for women.....  | 26.07        | 95        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>14,552.01</b> |
| GDP (US\$ billions).....               | <b>309.19</b>    |
| GTCI score.....                        | <b>38.93</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>41.21</b> | <b>50</b> |
| 3.1 Formal Education.....                       | 30.82        | 57        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 15.50        | 77        |
| 3.1.2 Tertiary enrolment.....                   | 47.86        | 41        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 23.76        | 55        |
| 3.1.4 Reading, maths, and science.....          | 33.43        | 57        |
| 3.1.5 University ranking.....                   | 33.56        | 33        |
| 3.2 Lifelong Learning.....                      | 50.37        | 40        |
| 3.2.1 Quality of management schools.....        | 43.16        | 59        |
| 3.2.2 Prevalence of training in firms.....      | 78.63        | 5         |
| 3.2.3 Employee development.....                 | 29.31        | 86        |
| 3.3 Access to Growth Opportunities.....         | 42.43        | 58        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 44.04        | 68        |
| 3.3.2 Personal rights.....                      | 60.97        | 58        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 65.00        | 81        |
| 3.3.4 Use of virtual professional networks..... | 24.29        | 43        |
| 3.3.5 Collaboration within organisations.....   | 26.83        | 88        |
| 3.3.6 Collaboration across organisations.....   | 33.45        | 59        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>42.92</b> | <b>77</b> |
| 4.1 Sustainability.....              | 34.27        | 74        |
| 4.1.1 Pension system.....            | 29.59        | 65        |
| 4.1.2 Social protection.....         | 30.71        | 81        |
| 4.1.3 Brain retention.....           | 42.50        | 62        |
| 4.2 Lifestyle.....                   | 51.56        | 82        |
| 4.2.1 Environmental performance..... | 62.99        | 38        |
| 4.2.2 Personal safety.....           | 31.54        | 111       |
| 4.2.3 Physician density.....         | 28.91        | 65        |
| 4.2.4 Sanitation.....                | 82.80        | 80        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>39.51</b> | <b>57</b> |
| 5.1 Mid-Level Skills.....                               | 32.62        | 72        |
| 5.1.1 Workforce with secondary education.....           | 38.89        | 70        |
| 5.1.2 Population with secondary education.....          | 36.66        | 54        |
| 5.1.3 Technicians and associate professionals.....      | 38.39        | 58        |
| 5.1.4 Labour productivity per employee.....             | 16.56        | 69        |
| 5.2 Employability.....                                  | 46.40        | 55        |
| 5.2.1 Ease of finding skilled employees.....            | 52.03        | 59        |
| 5.2.2 Relevance of education system to the economy..... | 30.31        | 77        |
| 5.2.3 Skills matching with secondary education.....     | 48.90        | 45        |
| 5.2.4 Skills matching with tertiary education.....      | 54.35        | 43        |

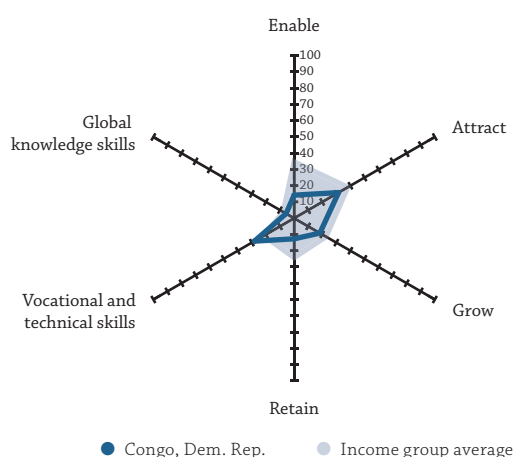
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|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>20.21</b> | <b>75</b> |
| 6.1 High-Level Skills.....                          | 25.08        | 72        |
| 6.1.1 Workforce with tertiary education.....        | 42.93        | 41        |
| 6.1.2 Population with tertiary education.....       | 31.24        | 49        |
| 6.1.3 Professionals.....                            | 4.49         | 112       |
| 6.1.4 Researchers.....                              | 1.51         | 82        |
| 6.1.5 Senior officials and managers.....            | 33.33        | 39        |
| 6.1.6 Availability of scientists and engineers..... | 36.97        | 70        |
| 6.2 Talent Impact.....                              | 15.34        | 76        |
| 6.2.1 Innovation output.....                        | 24.68        | 71        |
| 6.2.2 High-value exports.....                       | 17.83        | 47        |
| 6.2.3 New product entrepreneurial activity.....     | 18.31        | 68        |
| 6.2.4 New business density.....                     | 10.94        | 43        |
| 6.2.5 Scientific journal articles.....              | 4.96         | 68        |

# CONGO, DEM. REP.

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>124</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>81.34</b>              |

GTCI 2019 Country Profile by Pillar



|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>1 ENABLE.....14.19 124</b>                          |       |      |
| 1.1 Regulatory Landscape.....11.12 124                 |       |      |
| 1.1.1 Government effectiveness.....7.69 124            |       |      |
| 1.1.2 Business-government relations.....n/a n/a        |       |      |
| 1.1.3 Political stability.....13.66 123                |       |      |
| 1.1.4 Regulatory quality.....16.27 122                 |       |      |
| 1.1.5 Corruption.....6.85 121                          |       |      |
| 1.2 Market Landscape.....16.96 122                     |       |      |
| 1.2.1 Competition intensity.....55.00 98               |       |      |
| 1.2.2 Ease of doing business.....12.18 123             |       |      |
| 1.2.3 Cluster development.....17.43 104                |       |      |
| 1.2.4 R&D expenditure.....0.04 109                     |       |      |
| 1.2.5 ICT infrastructure.....0.00 122                  |       |      |
| 1.2.6 Technology utilisation.....17.12 118             |       |      |
| 1.3 Business and Labour Landscape.....14.49 124        |       |      |
| Labour Market                                          |       |      |
| 1.3.1 Ease of hiring.....16.67 119                     |       |      |
| 1.3.2 Ease of redundancy.....12.50 117                 |       |      |
| 1.3.3 Active labour market policies.....13.75 118      |       |      |
| 1.3.4 Labour-employer cooperation.....16.11 118        |       |      |
| Management Practice                                    |       |      |
| 1.3.5 Professional management.....27.25 109            |       |      |
| 1.3.6 Relationship of pay to productivity.....0.67 124 |       |      |
| <b>2 ATTRACT.....31.57 112</b>                         |       |      |
| 2.1 External Openness.....26.61 105                    |       |      |
| Attract Business                                       |       |      |
| 2.1.1 FDI and technology transfer.....30.58 117        |       |      |
| 2.1.2 Prevalence of foreign ownership.....63.24 53     |       |      |
| Attract People                                         |       |      |
| 2.1.3 Migrant stock.....2.09 96                        |       |      |
| 2.1.4 International students.....5.80 73               |       |      |
| 2.1.5 Brain gain.....31.36 89                          |       |      |
| 2.2 Internal Openness.....36.54 114                    |       |      |
| Social Inclusion                                       |       |      |
| 2.2.1 Tolerance of minorities.....1.18 123             |       |      |
| 2.2.2 Tolerance of immigrants.....72.97 30             |       |      |
| 2.2.3 Social mobility.....39.75 92                     |       |      |
| Gender Equality                                        |       |      |
| 2.2.4 Female graduates.....n/a n/a                     |       |      |
| 2.2.5 Gender earnings gap.....n/a n/a                  |       |      |
| 2.2.6 Leadership opportunities for women.....32.24 83  |       |      |

|                                        |               |
|----------------------------------------|---------------|
| GDP per capita (PPP US\$).....         | <b>887.21</b> |
| GDP (US\$ billions).....               | <b>37.24</b>  |
| GTCI score.....                        | <b>18.44</b>  |
| GTCI score (income group average)..... | <b>24.81</b>  |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW.....18.30 123</b>                             |       |      |
| 3.1 Formal Education.....14.08 98                       |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment.....39.33 38                 |       |      |
| 3.1.2 Tertiary enrolment.....5.09 109                   |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure.....11.89 89       |       |      |
| 3.1.4 Reading, maths, and science.....n/a n/a           |       |      |
| 3.1.5 University ranking.....0.00 78                    |       |      |
| 3.2 Lifelong Learning.....19.67 120                     |       |      |
| 3.2.1 Quality of management schools.....26.10 101       |       |      |
| 3.2.2 Prevalence of training in firms.....17.94 80      |       |      |
| 3.2.3 Employee development.....14.98 120                |       |      |
| 3.3 Access to Growth Opportunities.....21.16 118        |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority.....23.62 114             |       |      |
| 3.3.2 Personal rights.....17.84 107                     |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks.....33.94 118      |       |      |
| 3.3.4 Use of virtual professional networks.....0.03 119 |       |      |
| 3.3.5 Collaboration within organisations.....35.10 66   |       |      |
| 3.3.6 Collaboration across organisations.....16.44 103  |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....12.67 125</b>                |  |  |
| 4.1 Sustainability.....16.85 117             |  |  |
| 4.1.1 Pension system.....12.24 84            |  |  |
| 4.1.2 Social protection.....11.82 120        |  |  |
| 4.1.3 Brain retention.....26.50 101          |  |  |
| 4.2 Lifestyle.....8.49 125                   |  |  |
| 4.2.1 Environmental performance.....4.97 122 |  |  |
| 4.2.2 Personal safety.....13.85 119          |  |  |
| 4.2.3 Physician density.....1.17 112         |  |  |
| 4.2.4 Sanitation.....13.98 120               |  |  |

|                                                                  |  |  |
|------------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....28.21 97</b>            |  |  |
| 5.1 Mid-Level Skills.....24.97 88                                |  |  |
| 5.1.1 Workforce with secondary education.....50.08 53            |  |  |
| 5.1.2 Population with secondary education.....25.68 72           |  |  |
| 5.1.3 Technicians and associate professionals.....24.11 83       |  |  |
| 5.1.4 Labour productivity per employee.....0.00 105              |  |  |
| 5.2 Employability.....31.45 91                                   |  |  |
| 5.2.1 Ease of finding skilled employees.....52.91 57             |  |  |
| 5.2.2 Relevance of education system to the economy.....15.74 106 |  |  |
| 5.2.3 Skills matching with secondary education.....27.25 103     |  |  |
| 5.2.4 Skills matching with tertiary education.....29.91 98       |  |  |

|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....5.68 120</b>               |  |  |
| 6.1 High-Level Skills.....11.29 107                         |  |  |
| 6.1.1 Workforce with tertiary education.....8.85 100        |  |  |
| 6.1.2 Population with tertiary education.....13.41 85       |  |  |
| 6.1.3 Professionals.....5.06 110                            |  |  |
| 6.1.4 Researchers.....0.00 103                              |  |  |
| 6.1.5 Senior officials and managers.....6.55 99             |  |  |
| 6.1.6 Availability of scientists and engineers.....33.85 80 |  |  |
| 6.2 Talent Impact.....0.08 124                              |  |  |
| 6.2.1 Innovation output.....n/a n/a                         |  |  |
| 6.2.2 High-value exports.....n/a n/a                        |  |  |
| 6.2.3 New product entrepreneurial activity.....n/a n/a      |  |  |
| 6.2.4 New business density.....0.14 101                     |  |  |
| 6.2.5 Scientific journal articles.....0.02 124              |  |  |

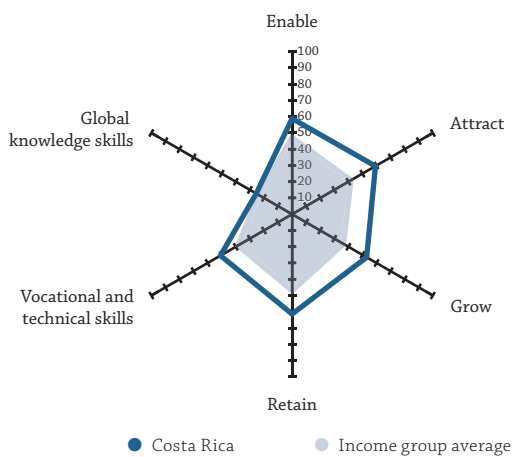


# COSTA RICA

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>34</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>4.91</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>58.87</b> | <b>39</b> |
| 1.1 Regulatory Landscape.....                  | 63.37        | 40        |
| 1.1.1 Government effectiveness.....            | 54.09        | 47        |
| 1.1.2 Business-government relations.....       | 64.24        | 40        |
| 1.1.3 Political stability.....                 | 81.94        | 30        |
| 1.1.4 Regulatory quality.....                  | 57.66        | 50        |
| 1.1.5 Corruption.....                          | 58.90        | 33        |
| 1.2 Market Landscape.....                      | 54.99        | 44        |
| 1.2.1 Competition intensity.....               | 73.95        | 45        |
| 1.2.2 Ease of doing business.....              | 68.71        | 56        |
| 1.2.3 Cluster development.....                 | 48.10        | 43        |
| 1.2.4 R&D expenditure.....                     | 13.13        | 55        |
| 1.2.5 ICT infrastructure.....                  | 60.05        | 63        |
| 1.2.6 Technology utilisation.....              | 66.02        | 38        |
| 1.3 Business and Labour Landscape.....         | 58.24        | 40        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 22.33        | 112       |
| 1.3.2 Ease of redundancy.....                  | 100.00       | 1         |
| 1.3.3 Active labour market policies.....       | 38.31        | 70        |
| 1.3.4 Labour-employer cooperation.....         | 65.13        | 26        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 60.39        | 34        |
| 1.3.6 Relationship of pay to productivity..... | 63.27        | 38        |
| <b>2 ATTRACT.....</b>                          | <b>59.22</b> | <b>25</b> |
| 2.1 External Openness.....                     | 56.57        | 23        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 78.11        | 18        |
| 2.1.2 Prevalence of foreign ownership.....     | 76.74        | 26        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 17.32        | 45        |
| 2.1.4 International students.....              | n/a          | n/a       |
| 2.1.5 Brain gain.....                          | 54.13        | 37        |
| 2.2 Internal Openness.....                     | 61.87        | 30        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 63.53        | 27        |
| 2.2.2 Tolerance of immigrants.....             | 67.57        | 41        |
| 2.2.3 Social mobility.....                     | 67.30        | 29        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 87.93        | 16        |
| 2.2.5 Gender earnings gap.....                 | 46.48        | 82        |
| 2.2.6 Leadership opportunities for women.....  | 38.41        | 69        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>17,044.19</b> |
| GDP (US\$ billions).....               | <b>57.06</b>     |
| GTCI score.....                        | <b>51.47</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>52.98</b> | <b>30</b> |
| 3.1 Formal Education.....                       | 37.26        | 46        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 50.76        | 26        |
| 3.1.2 Tertiary enrolment.....                   | 43.95        | 46        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 38.24        | 16        |
| 3.1.4 Reading, maths, and science.....          | 36.10        | 53        |
| 3.1.5 University ranking.....                   | 17.27        | 57        |
| 3.2 Lifelong Learning.....                      | 64.99        | 23        |
| 3.2.1 Quality of management schools.....        | 71.89        | 20        |
| 3.2.2 Prevalence of training in firms.....      | 67.68        | 15        |
| 3.2.3 Employee development.....                 | 55.41        | 34        |
| 3.3 Access to Growth Opportunities.....         | 56.68        | 29        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 57.93        | 33        |
| 3.3.2 Personal rights.....                      | 82.06        | 29        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 86.20        | 20        |
| 3.3.4 Use of virtual professional networks..... | 30.59        | 31        |
| 3.3.5 Collaboration within organisations.....   | 41.16        | 47        |
| 3.3.6 Collaboration across organisations.....   | 42.15        | 39        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>61.39</b> | <b>38</b> |
| 4.1 Sustainability.....              | 59.72        | 33        |
| 4.1.1 Pension system.....            | 55.10        | 46        |
| 4.1.2 Social protection.....         | 56.66        | 37        |
| 4.1.3 Brain retention.....           | 67.38        | 24        |
| 4.2 Lifestyle.....                   | 63.06        | 55        |
| 4.2.1 Environmental performance..... | 67.38        | 29        |
| 4.2.2 Personal safety.....           | 69.93        | 49        |
| 4.2.3 Physician density.....         | 18.15        | 81        |
| 4.2.4 Sanitation.....                | 96.77        | 44        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>50.88</b> | <b>36</b> |
| 5.1 Mid-Level Skills.....                               | 29.78        | 79        |
| 5.1.1 Workforce with secondary education.....           | 25.03        | 87        |
| 5.1.2 Population with secondary education.....          | 22.68        | 81        |
| 5.1.3 Technicians and associate professionals.....      | 49.11        | 43        |
| 5.1.4 Labour productivity per employee.....             | 22.29        | 61        |
| 5.2 Employability.....                                  | 71.99        | 19        |
| 5.2.1 Ease of finding skilled employees.....            | 82.00        | 14        |
| 5.2.2 Relevance of education system to the economy..... | 57.97        | 26        |
| 5.2.3 Skills matching with secondary education.....     | 71.41        | 15        |
| 5.2.4 Skills matching with tertiary education.....      | 76.57        | 20        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>25.49</b> | <b>60</b> |
| 6.1 High-Level Skills.....                          | 27.75        | 65        |
| 6.1.1 Workforce with tertiary education.....        | 30.44        | 61        |
| 6.1.2 Population with tertiary education.....       | 35.14        | 40        |
| 6.1.3 Professionals.....                            | 21.63        | 74        |
| 6.1.4 Researchers.....                              | 6.86         | 62        |
| 6.1.5 Senior officials and managers.....            | 11.31        | 84        |
| 6.1.6 Availability of scientists and engineers..... | 61.13        | 26        |
| 6.2 Talent Impact.....                              | 23.23        | 55        |
| 6.2.1 Innovation output.....                        | 35.54        | 50        |
| 6.2.2 High-value exports.....                       | 33.13        | 20        |
| 6.2.3 New product entrepreneurial activity.....     | 34.37        | 50        |
| 6.2.4 New business density.....                     | 10.07        | 47        |
| 6.2.5 Scientific journal articles.....              | 3.04         | 78        |

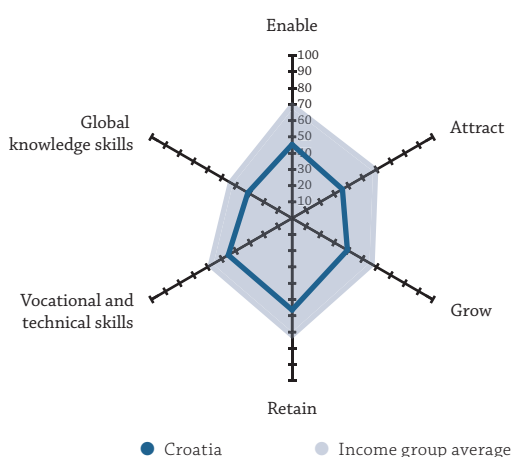
## CROATIA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>55</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>4.13</b>        |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>25,264.44</b> |
| GDP (US\$ billions) .....               | <b>54.85</b>     |
| GTCI score.....                         | <b>42.27</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....45.37 83</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 53.91 | 53   |
| 1.1.1 Government effectiveness .....           | 57.32 | 44   |
| 1.1.2 Business-government relations .....      | 30.24 | 118  |
| 1.1.3 Political stability .....                | 80.32 | 34   |
| 1.1.4 Regulatory quality.....                  | 56.46 | 52   |
| 1.1.5 Corruption .....                         | 45.21 | 47   |
| 1.2 Market Landscape.....                      | 46.53 | 67   |
| 1.2.1 Competition intensity.....               | 56.03 | 95   |
| 1.2.2 Ease of doing business .....             | 73.33 | 46   |
| 1.2.3 Cluster development .....                | 11.71 | 120  |
| 1.2.4 R&D expenditure .....                    | 19.86 | 39   |
| 1.2.5 ICT infrastructure.....                  | 75.32 | 33   |
| 1.2.6 Technology utilisation.....              | 42.91 | 85   |
| 1.3 Business and Labour Landscape.....         | 35.68 | 110  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 55.67 | 76   |
| 1.3.2 Ease of redundancy .....                 | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 31.34 | 83   |
| 1.3.4 Labour-employer cooperation .....        | 9.65  | 123  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 32.78 | 97   |
| 1.3.6 Relationship of pay to productivity..... | 34.64 | 96   |
| <b>2 ATTRACT.....35.75 99</b>                  |       |      |
| 2.1 External Openness .....                    | 26.82 | 103  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 39.37 | 104  |
| 2.1.2 Prevalence of foreign ownership .....    | 53.51 | 82   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 27.53 | 26   |
| 2.1.4 International students.....              | 2.02  | 87   |
| 2.1.5 Brain gain.....                          | 11.67 | 123  |
| 2.2 Internal Openness.....                     | 44.68 | 85   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 44.71 | 57   |
| 2.2.2 Tolerance of immigrants.....             | 22.97 | 108  |
| 2.2.3 Social mobility.....                     | 33.14 | 111  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | 80.00 | 33   |
| 2.2.5 Gender earnings gap.....                 | 67.38 | 20   |
| 2.2.6 Leadership opportunities for women.....  | 19.90 | 105  |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....39.30 55</b>                      |       |      |
| 3.1 Formal Education.....                       | 47.95 | 29   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 83.17 | 4    |
| 3.1.2 Tertiary enrolment.....                   | 55.09 | 25   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 23.09 | 59   |
| 3.1.4 Reading, maths, and science .....         | 64.16 | 33   |
| 3.1.5 University ranking .....                  | 14.24 | 62   |
| 3.2 Lifelong Learning.....                      | 34.81 | 78   |
| 3.2.1 Quality of management schools.....        | 31.44 | 87   |
| 3.2.2 Prevalence of training in firms.....      | 60.55 | 21   |
| 3.2.3 Employee development.....                 | 12.42 | 122  |
| 3.3 Access to Growth Opportunities .....        | 35.15 | 88   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 28.92 | 107  |
| 3.3.2 Personal rights.....                      | 70.96 | 41   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 63.07 | 86   |
| 3.3.4 Use of virtual professional networks..... | 26.81 | 35   |
| 3.3.5 Collaboration within organisations .....  | 16.72 | 112  |
| 3.3.6 Collaboration across organisations .....  | 4.40  | 120  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....56.45 49</b>         |       |     |
| 4.1 Sustainability .....             | 39.75 | 66  |
| 4.1.1 Pension system.....            | 82.65 | 28  |
| 4.1.2 Social protection .....        | 26.35 | 91  |
| 4.1.3 Brain retention .....          | 10.23 | 120 |
| 4.2 Lifestyle.....                   | 73.15 | 33  |
| 4.2.1 Environmental performance..... | 63.38 | 37  |
| 4.2.2 Personal safety .....          | 82.61 | 31  |
| 4.2.3 Physician density .....        | 49.83 | 33  |
| 4.2.4 Sanitation .....               | 96.77 | 44  |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....45.33 46</b>    |       |     |
| 5.1 Mid-Level Skills .....                               | 64.46 | 10  |
| 5.1.1 Workforce with secondary education .....           | 84.67 | 9   |
| 5.1.2 Population with secondary education .....          | 74.47 | 8   |
| 5.1.3 Technicians and associate professionals .....      | 63.84 | 22  |
| 5.1.4 Labour productivity per employee.....              | 34.86 | 43  |
| 5.2 Employability.....                                   | 26.19 | 105 |
| 5.2.1 Ease of finding skilled employees .....            | 29.60 | 104 |
| 5.2.2 Relevance of education system to the economy ..... | 16.98 | 105 |
| 5.2.3 Skills matching with secondary education.....      | 34.19 | 85  |
| 5.2.4 Skills matching with tertiary education .....      | 24.00 | 112 |

|                                                      |       |    |
|------------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....31.42 47</b>       |       |    |
| 6.1 High-Level Skills.....                           | 31.73 | 53 |
| 6.1.1 Workforce with tertiary education .....        | 39.76 | 44 |
| 6.1.2 Population with tertiary education .....       | 29.20 | 55 |
| 6.1.3 Professionals.....                             | 45.22 | 37 |
| 6.1.4 Researchers.....                               | 21.67 | 41 |
| 6.1.5 Senior officials and managers .....            | 26.19 | 50 |
| 6.1.6 Availability of scientists and engineers ..... | 28.33 | 92 |
| 6.2 Talent Impact.....                               | 31.10 | 37 |
| 6.2.1 Innovation output.....                         | 43.26 | 41 |
| 6.2.2 High-value exports .....                       | 21.08 | 40 |
| 6.2.3 New product entrepreneurial activity .....     | 27.95 | 58 |
| 6.2.4 New business density .....                     | 23.86 | 26 |
| 6.2.5 Scientific journal articles.....               | 39.37 | 30 |

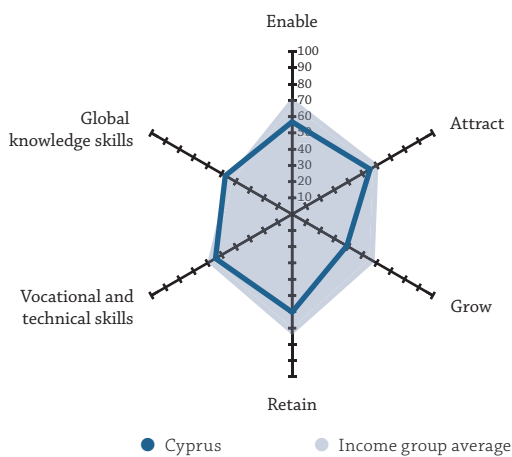


# CYPRUS

Key Indicators

|                             |                                         |
|-----------------------------|-----------------------------------------|
| Rank (out of 125).....      | <b>33</b>                               |
| Income group .....          | <b>High income</b>                      |
| Regional group .....        | <b>Northern Africa and Western Asia</b> |
| Population (millions) ..... | <b>1.18</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>56.82</b> | <b>44</b> |
| 1.1 Regulatory Landscape.....                  | 67.68        | 31        |
| 1.1.1 Government effectiveness .....           | 69.48        | 33        |
| 1.1.2 Business-government relations .....      | 62.03        | 48        |
| 1.1.3 Political stability .....                | 77.78        | 36        |
| 1.1.4 Regulatory quality .....                 | 72.97        | 28        |
| 1.1.5 Corruption .....                         | 56.16        | 36        |
| 1.2 Market Landscape.....                      | 54.85        | 45        |
| 1.2.1 Competition intensity .....              | 79.99        | 21        |
| 1.2.2 Ease of doing business .....             | 73.20        | 48        |
| 1.2.3 Cluster development .....                | 33.97        | 76        |
| 1.2.4 R&D expenditure .....                    | 11.55        | 59        |
| 1.2.5 ICT infrastructure .....                 | 78.63        | 30        |
| 1.2.6 Technology utilisation .....             | 51.78        | 59        |
| 1.3 Business and Labour Landscape.....         | 47.93        | 77        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring .....                     | 55.67        | 76        |
| 1.3.2 Ease of redundancy .....                 | 50.00        | 85        |
| 1.3.3 Active labour market policies.....       | 55.19        | 40        |
| 1.3.4 Labour-employer cooperation .....        | 48.27        | 46        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 34.05        | 93        |
| 1.3.6 Relationship of pay to productivity..... | 44.39        | 68        |
| <b>2 ATTRACT.....</b>                          | <b>55.39</b> | <b>29</b> |
| 2.1 External Openness .....                    | 55.13        | 26        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 53.31        | 73        |
| 2.1.2 Prevalence of foreign ownership .....    | 59.87        | 56        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 32.99        | 21        |
| 2.1.4 International students.....              | 88.35        | 8         |
| 2.1.5 Brain gain.....                          | 41.10        | 67        |
| 2.2 Internal Openness.....                     | 55.65        | 42        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities .....            | 38.82        | 66        |
| 2.2.2 Tolerance of immigrants.....             | 59.46        | 56        |
| 2.2.3 Social mobility.....                     | 50.05        | 62        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates .....                   | 91.84        | 9         |
| 2.2.5 Gender earnings gap .....                | 59.86        | 38        |
| 2.2.6 Leadership opportunities for women.....  | 33.84        | 79        |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>34,503.47</b> |
| GDP (US\$ billions) .....               | <b>21.65</b>     |
| GTCI score.....                         | <b>52.20</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>38.88</b> | <b>57</b> |
| 3.1 Formal Education.....                       | 27.45        | 64        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment .....                | 17.05        | 75        |
| 3.1.2 Tertiary enrolment.....                   | 49.00        | 40        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 24.87        | 51        |
| 3.1.4 Reading, maths, and science .....         | 46.32        | 44        |
| 3.1.5 University ranking .....                  | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 43.26        | 60        |
| 3.2.1 Quality of management schools.....        | 39.77        | 68        |
| 3.2.2 Prevalence of training in firms .....     | n/a          | n/a       |
| 3.2.3 Employee development.....                 | 46.74        | 45        |
| 3.3 Access to Growth Opportunities .....        | 45.92        | 47        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 41.20        | 76        |
| 3.3.2 Personal rights.....                      | 84.35        | 27        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 61.02        | 89        |
| 3.3.4 Use of virtual professional networks..... | 37.07        | 25        |
| 3.3.5 Collaboration within organisations .....  | 30.50        | 79        |
| 3.3.6 Collaboration across organisations .....  | 21.37        | 91        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>60.23</b> | <b>42</b> |
| 4.1 Sustainability .....             | 47.17        | 51        |
| 4.1.1 Pension system.....            | n/a          | n/a       |
| 4.1.2 Social protection .....        | 47.58        | 46        |
| 4.1.3 Brain retention .....          | 46.75        | 53        |
| 4.2 Lifestyle .....                  | 73.29        | 32        |
| 4.2.1 Environmental performance..... | 75.30        | 23        |
| 4.2.2 Personal safety .....          | 79.20        | 38        |
| 4.2.3 Physician density .....        | 39.73        | 48        |
| 4.2.4 Sanitation .....               | 98.92        | 21        |

|                                                          |              |           |
|----------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>            | <b>54.41</b> | <b>31</b> |
| 5.1 Mid-Level Skills .....                               | 49.28        | 42        |
| 5.1.1 Workforce with secondary education .....           | 49.89        | 54        |
| 5.1.2 Population with secondary education .....          | 45.79        | 40        |
| 5.1.3 Technicians and associate professionals .....      | 57.59        | 27        |
| 5.1.4 Labour productivity per employee .....             | 43.86        | 28        |
| 5.2 Employability.....                                   | 59.54        | 30        |
| 5.2.1 Ease of finding skilled employees .....            | 69.65        | 28        |
| 5.2.2 Relevance of education system to the economy ..... | 43.32        | 51        |
| 5.2.3 Skills matching with secondary education.....      | 61.12        | 27        |
| 5.2.4 Skills matching with tertiary education .....      | 64.08        | 30        |

|                                                      |              |           |
|------------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>47.45</b> | <b>21</b> |
| 6.1 High-Level Skills .....                          | 44.36        | 31        |
| 6.1.1 Workforce with tertiary education .....        | 68.33        | 8         |
| 6.1.2 Population with tertiary education .....       | 57.22        | 12        |
| 6.1.3 Professionals.....                             | 50.28        | 24        |
| 6.1.4 Researchers.....                               | 12.05        | 49        |
| 6.1.5 Senior officials and managers .....            | 20.83        | 63        |
| 6.1.6 Availability of scientists and engineers ..... | 57.45        | 31        |
| 6.2 Talent Impact.....                               | 50.55        | 15        |
| 6.2.1 Innovation output.....                         | 58.08        | 21        |
| 6.2.2 High-value exports .....                       | 13.21        | 57        |
| 6.2.3 New product entrepreneurial activity .....     | 68.66        | 8         |
| 6.2.4 New business density .....                     | 79.76        | 4         |
| 6.2.5 Scientific journal articles.....               | 33.02        | 32        |

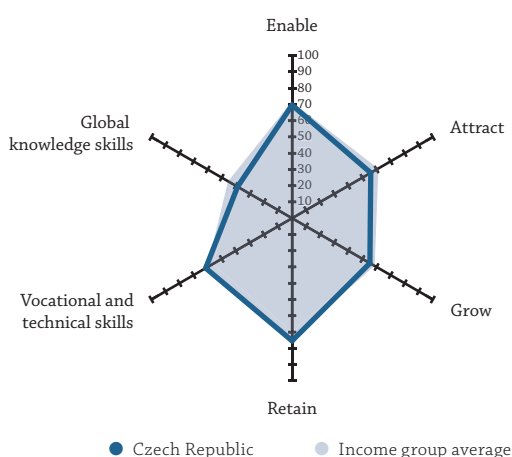
# CZECH REPUBLIC

Key Indicators

|                             |                    |
|-----------------------------|--------------------|
| Rank (out of 125).....      | <b>25</b>          |
| Income group .....          | <b>High income</b> |
| Regional group .....        | <b>Europe</b>      |
| Population (millions) ..... | <b>10.59</b>       |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>36,915.93</b> |
| GDP (US\$ billions) .....               | <b>215.73</b>    |
| GTCI score .....                        | <b>59.38</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>1 ENABLE.....69.60</b>                       | <b>25</b> |      |
| 1.1 Regulatory Landscape.....                   | 66.25     | 33   |
| 1.1.1 Government effectiveness .....            | 71.46     | 30   |
| 1.1.2 Business-government relations .....       | 44.59     | 96   |
| 1.1.3 Political stability .....                 | 87.50     | 15   |
| 1.1.4 Regulatory quality .....                  | 71.53     | 32   |
| 1.1.5 Corruption .....                          | 56.16     | 36   |
| 1.2 Market Landscape.....                       | 65.27     | 28   |
| 1.2.1 Competition intensity .....               | 87.43     | 12   |
| 1.2.2 Ease of doing business .....              | 81.54     | 27   |
| 1.2.3 Cluster development .....                 | 44.03     | 49   |
| 1.2.4 R&D expenditure .....                     | 39.26     | 21   |
| 1.2.5 ICT infrastructure .....                  | 69.47     | 48   |
| 1.2.6 Technology utilisation .....              | 69.89     | 31   |
| 1.3 Business and Labour Landscape.....          | 77.27     | 18   |
| Labour Market                                   |           |      |
| 1.3.1 Ease of hiring .....                      | 89.00     | 27   |
| 1.3.2 Ease of redundancy .....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies .....       | 68.84     | 24   |
| 1.3.4 Labour-employer cooperation .....         | 56.64     | 32   |
| Management Practice                             |           |      |
| 1.3.5 Professional management .....             | 76.31     | 25   |
| 1.3.6 Relationship of pay to productivity ..... | 72.83     | 19   |
| <b>2 ATTRACT.....55.89</b>                      | <b>28</b> |      |
| 2.1 External Openness .....                     | 54.12     | 29   |
| Attract Business                                |           |      |
| 2.1.1 FDI and technology transfer .....         | 71.97     | 29   |
| 2.1.2 Prevalence of foreign ownership .....     | 96.58     | 4    |
| Attract People                                  |           |      |
| 2.1.3 Migrant stock .....                       | 8.29      | 59   |
| 2.1.4 International students .....              | 53.09     | 17   |
| 2.1.5 Brain gain .....                          | 40.68     | 69   |
| 2.2 Internal Openness.....                      | 57.65     | 37   |
| Social Inclusion                                |           |      |
| 2.2.1 Tolerance of minorities .....             | 56.47     | 39   |
| 2.2.2 Tolerance of immigrants .....             | 25.68     | 107  |
| 2.2.3 Social mobility .....                     | 76.09     | 23   |
| Gender Equality                                 |           |      |
| 2.2.4 Female graduates .....                    | 81.75     | 30   |
| 2.2.5 Gender earnings gap .....                 | 51.85     | 66   |
| 2.2.6 Leadership opportunities for women .....  | 54.09     | 42   |

|                                                  | Score     | Rank |
|--------------------------------------------------|-----------|------|
| <b>3 GROW.....55.29</b>                          | <b>25</b> |      |
| 3.1 Formal Education.....                        | 49.53     | 26   |
| Enrolment                                        |           |      |
| 3.1.1 Vocational enrolment .....                 | 79.87     | 6    |
| 3.1.2 Tertiary enrolment .....                   | 52.59     | 32   |
| Quality                                          |           |      |
| 3.1.3 Tertiary education expenditure .....       | 18.13     | 69   |
| 3.1.4 Reading, maths, and science .....          | 71.39     | 27   |
| 3.1.5 University ranking .....                   | 25.68     | 44   |
| 3.2 Lifelong Learning.....                       | 58.48     | 30   |
| 3.2.1 Quality of management schools .....        | 43.94     | 57   |
| 3.2.2 Prevalence of training in firms .....      | 68.21     | 14   |
| 3.2.3 Employee development .....                 | 63.30     | 26   |
| 3.3 Access to Growth Opportunities .....         | 57.86     | 28   |
| Empowerment                                      |           |      |
| 3.3.1 Delegation of authority .....              | 64.77     | 26   |
| 3.3.2 Personal rights .....                      | 86.72     | 23   |
| Collaboration                                    |           |      |
| 3.3.3 Use of virtual social networks .....       | 85.62     | 22   |
| 3.3.4 Use of virtual professional networks ..... | 21.92     | 46   |
| 3.3.5 Collaboration within organisations .....   | 51.67     | 32   |
| 3.3.6 Collaboration across organisations .....   | 36.48     | 51   |

|                                       |           |    |
|---------------------------------------|-----------|----|
| <b>4 RETAIN.....75.42</b>             | <b>22</b> |    |
| 4.1 Sustainability .....              | 70.11     | 22 |
| 4.1.1 Pension system .....            | 94.90     | 3  |
| 4.1.2 Social protection .....         | 67.94     | 25 |
| 4.1.3 Brain retention .....           | 47.49     | 49 |
| 4.2 Lifestyle.....                    | 80.73     | 17 |
| 4.2.1 Environmental performance ..... | 67.09     | 32 |
| 4.2.2 Personal safety .....           | 98.22     | 9  |
| 4.2.3 Physician density .....         | 58.67     | 18 |
| 4.2.4 Sanitation .....                | 98.92     | 21 |

|                                                          |           |     |
|----------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....61.37</b>       | <b>22</b> |     |
| 5.1 Mid-Level Skills .....                               | 77.68     | 1   |
| 5.1.1 Workforce with secondary education .....           | 96.61     | 3   |
| 5.1.2 Population with secondary education .....          | 100.00    | 1   |
| 5.1.3 Technicians and associate professionals .....      | 75.89     | 12  |
| 5.1.4 Labour productivity per employee .....             | 38.21     | 38  |
| 5.2 Employability.....                                   | 45.06     | 59  |
| 5.2.1 Ease of finding skilled employees .....            | 28.89     | 105 |
| 5.2.2 Relevance of education system to the economy ..... | 39.12     | 55  |
| 5.2.3 Skills matching with secondary education .....     | 56.11     | 33  |
| 5.2.4 Skills matching with tertiary education .....      | 56.10     | 40  |

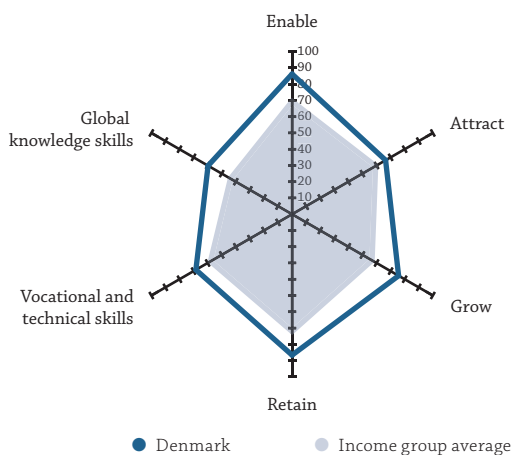
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|------------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....38.74</b>          | <b>32</b> |    |
| 6.1 High-Level Skills .....                          | 36.06     | 45 |
| 6.1.1 Workforce with tertiary education .....        | 35.65     | 54 |
| 6.1.2 Population with tertiary education .....       | 31.24     | 49 |
| 6.1.3 Professionals .....                            | 41.29     | 40 |
| 6.1.4 Researchers .....                              | 42.60     | 25 |
| 6.1.5 Senior officials and managers .....            | 29.76     | 43 |
| 6.1.6 Availability of scientists and engineers ..... | 35.84     | 71 |
| 6.2 Talent Impact.....                               | 41.42     | 24 |
| 6.2.1 Innovation output .....                        | 59.65     | 20 |
| 6.2.2 High-value exports .....                       | 25.18     | 33 |
| 6.2.3 New product entrepreneurial activity .....     | 42.74     | 35 |
| 6.2.4 New business density .....                     | 19.13     | 30 |
| 6.2.5 Scientific journal articles .....              | 60.38     | 13 |

# DENMARK

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>5</b>           |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>5.77</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE..... 86.26</b>                     | <b>3</b>  |      |
| 1.1 Regulatory Landscape.....                  | 87.00     | 10   |
| 1.1.1 Government effectiveness.....            | 92.06     | 3    |
| 1.1.2 Business-government relations.....       | 74.39     | 21   |
| 1.1.3 Political stability.....                 | 84.26     | 24   |
| 1.1.4 Regulatory quality.....                  | 85.65     | 15   |
| 1.1.5 Corruption.....                          | 98.63     | 2    |
| 1.2 Market Landscape.....                      | 80.47     | 10   |
| 1.2.1 Competition intensity.....               | 75.95     | 37   |
| 1.2.2 Ease of doing business.....              | 95.53     | 3    |
| 1.2.3 Cluster development.....                 | 67.49     | 21   |
| 1.2.4 R&D expenditure.....                     | 67.42     | 8    |
| 1.2.5 ICT infrastructure.....                  | 85.37     | 13   |
| 1.2.6 Technology utilisation.....              | 91.07     | 9    |
| 1.3 Business and Labour Landscape.....         | 91.30     | 3    |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 84.66     | 8    |
| 1.3.4 Labour-employer cooperation.....         | 93.09     | 4    |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 90.47     | 11   |
| 1.3.6 Relationship of pay to productivity..... | 79.57     | 10   |
| <b>2 ATTRACT..... 66.44</b>                    | <b>17</b> |      |
| 2.1 External Openness.....                     | 58.13     | 21   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 70.34     | 32   |
| 2.1.2 Prevalence of foreign ownership.....     | 85.91     | 12   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 23.55     | 34   |
| 2.1.4 International students.....              | 54.43     | 14   |
| 2.1.5 Brain gain.....                          | 56.41     | 30   |
| 2.2 Internal Openness.....                     | 74.76     | 9    |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 61.18     | 31   |
| 2.2.2 Tolerance of immigrants.....             | 85.14     | 12   |
| 2.2.3 Social mobility.....                     | 89.65     | 11   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 71.36     | 59   |
| 2.2.5 Gender earnings gap.....                 | 60.57     | 34   |
| 2.2.6 Leadership opportunities for women.....  | 80.64     | 9    |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>50,540.81</b> |
| GDP (US\$ billions).....               | <b>324.87</b>    |
| GTCI score.....                        | <b>73.85</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score    | Rank |
|-------------------------------------------------|----------|------|
| <b>3 GROW..... 75.67</b>                        | <b>6</b> |      |
| 3.1 Formal Education.....                       | 60.94    | 9    |
| Enrolment                                       |          |      |
| 3.1.1 Vocational enrolment.....                 | 47.11    | 28   |
| 3.1.2 Tertiary enrolment.....                   | 66.30    | 14   |
| Quality                                         |          |      |
| 3.1.3 Tertiary education expenditure.....       | 55.90    | 3    |
| 3.1.4 Reading, maths, and science.....          | 77.73    | 15   |
| 3.1.5 University ranking.....                   | 57.66    | 14   |
| 3.2 Lifelong Learning.....                      | 79.99    | 10   |
| 3.2.1 Quality of management schools.....        | 77.77    | 13   |
| 3.2.2 Prevalence of training in firms.....      | n/a      | n/a  |
| 3.2.3 Employee development.....                 | 82.20    | 11   |
| 3.3 Access to Growth Opportunities.....         | 86.08    | 6    |
| Empowerment                                     |          |      |
| 3.3.1 Delegation of authority.....              | 100.00   | 1    |
| 3.3.2 Personal rights.....                      | 100.00   | 1    |
| Collaboration                                   |          |      |
| 3.3.3 Use of virtual social networks.....       | 88.88    | 12   |
| 3.3.4 Use of virtual professional networks..... | 85.74    | 4    |
| 3.3.5 Collaboration within organisations.....   | 84.27    | 11   |
| 3.3.6 Collaboration across organisations.....   | 57.57    | 24   |

|                                      |          |    |
|--------------------------------------|----------|----|
| <b>4 RETAIN..... 86.68</b>           | <b>4</b> |    |
| 4.1 Sustainability.....              | 86.32    | 7  |
| 4.1.1 Pension system.....            | 92.86    | 8  |
| 4.1.2 Social protection.....         | 95.92    | 7  |
| 4.1.3 Brain retention.....           | 70.18    | 19 |
| 4.2 Lifestyle.....                   | 87.04    | 6  |
| 4.2.1 Environmental performance..... | 90.30    | 3  |
| 4.2.2 Personal safety.....           | 99.56    | 4  |
| 4.2.3 Physician density.....         | 58.31    | 19 |
| 4.2.4 Sanitation.....                | 100.00   | 1  |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 68.35</b>     | <b>10</b> |    |
| 5.1 Mid-Level Skills.....                               | 61.83     | 18 |
| 5.1.1 Workforce with secondary education.....           | 54.67     | 42 |
| 5.1.2 Population with secondary education.....          | 60.06     | 23 |
| 5.1.3 Technicians and associate professionals.....      | 79.02     | 10 |
| 5.1.4 Labour productivity per employee.....             | 53.59     | 17 |
| 5.2 Employability.....                                  | 74.86     | 16 |
| 5.2.1 Ease of finding skilled employees.....            | 74.63     | 22 |
| 5.2.2 Relevance of education system to the economy..... | 69.66     | 17 |
| 5.2.3 Skills matching with secondary education.....     | 71.32     | 16 |
| 5.2.4 Skills matching with tertiary education.....      | 83.82     | 8  |

|                                                     |          |    |
|-----------------------------------------------------|----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 59.70</b>         | <b>7</b> |    |
| 6.1 High-Level Skills.....                          | 55.64    | 16 |
| 6.1.1 Workforce with tertiary education.....        | 53.82    | 23 |
| 6.1.2 Population with tertiary education.....       | 51.61    | 20 |
| 6.1.3 Professionals.....                            | 71.35    | 4  |
| 6.1.4 Researchers.....                              | 91.07    | 2  |
| 6.1.5 Senior officials and managers.....            | 13.69    | 74 |
| 6.1.6 Availability of scientists and engineers..... | 52.28    | 42 |
| 6.2 Talent Impact.....                              | 63.76    | 1  |
| 6.2.1 Innovation output.....                        | 69.96    | 13 |
| 6.2.2 High-value exports.....                       | 28.44    | 27 |
| 6.2.3 New product entrepreneurial activity.....     | 79.14    | 5  |
| 6.2.4 New business density.....                     | 47.71    | 12 |
| 6.2.5 Scientific journal articles.....              | 93.55    | 2  |

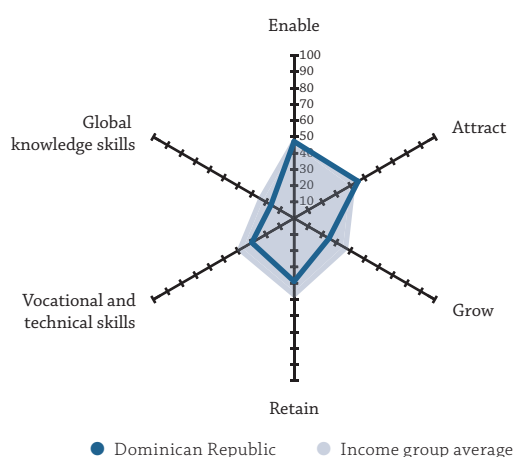
# DOMINICAN REPUBLIC

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>90</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>10.77</b>                           |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>16,029.62</b> |
| GDP (US\$ billions).....               | <b>75.93</b>     |
| GTCI score.....                        | <b>33.79</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....47.21</b>                      | <b>73</b> |      |
| 1.1 Regulatory Landscape.....                  | 47.65     | 69   |
| 1.1.1 Government effectiveness.....            | 38.96     | 86   |
| 1.1.2 Business-government relations.....       | 64.02     | 41   |
| 1.1.3 Political stability.....                 | 71.30     | 48   |
| 1.1.4 Regulatory quality.....                  | 46.17     | 69   |
| 1.1.5 Corruption.....                          | 17.81     | 102  |
| 1.2 Market Landscape.....                      | 49.29     | 60   |
| 1.2.1 Competition intensity.....               | 75.30     | 39   |
| 1.2.2 Ease of doing business.....              | 53.99     | 84   |
| 1.2.3 Cluster development.....                 | 39.33     | 60   |
| 1.2.4 R&D expenditure.....                     | n/a       | n/a  |
| 1.2.5 ICT infrastructure.....                  | 33.33     | 95   |
| 1.2.6 Technology utilisation.....              | 44.48     | 76   |
| 1.3 Business and Labour Landscape.....         | 44.69     | 87   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 55.67     | 76   |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 17.92     | 110  |
| 1.3.4 Labour-employer cooperation.....         | 36.58     | 78   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 31.91     | 99   |
| 1.3.6 Relationship of pay to productivity..... | 26.06     | 116  |
| <b>2 ATTRACT.....45.45</b>                     | <b>55</b> |      |
| 2.1 External Openness.....                     | 38.14     | 66   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 63.66     | 48   |
| 2.1.2 Prevalence of foreign ownership.....     | 69.47     | 42   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 8.02      | 61   |
| 2.1.4 International students.....              | 9.75      | 66   |
| 2.1.5 Brain gain.....                          | 39.83     | 70   |
| 2.2 Internal Openness.....                     | 52.76     | 50   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 44.71     | 57   |
| 2.2.2 Tolerance of immigrants.....             | 66.22     | 44   |
| 2.2.3 Social mobility.....                     | 34.77     | 106  |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 100.00    | 1    |
| 2.2.5 Gender earnings gap.....                 | 50.30     | 74   |
| 2.2.6 Leadership opportunities for women.....  | 20.59     | 104  |

|                                                 | Score      | Rank |
|-------------------------------------------------|------------|------|
| <b>3 GROW.....24.80</b>                         | <b>104</b> |      |
| 3.1 Formal Education.....                       | 11.88      | 103  |
| Enrolment                                       |            |      |
| 3.1.1 Vocational enrolment.....                 | 10.44      | 85   |
| 3.1.2 Tertiary enrolment.....                   | 43.13      | 47   |
| Quality                                         |            |      |
| 3.1.3 Tertiary education expenditure.....       | 5.82       | 106  |
| 3.1.4 Reading, maths, and science.....          | 0.00       | 67   |
| 3.1.5 University ranking.....                   | 0.00       | 78   |
| 3.2 Lifelong Learning.....                      | 26.56      | 109  |
| 3.2.1 Quality of management schools.....        | 30.91      | 91   |
| 3.2.2 Prevalence of training in firms.....      | 26.39      | 65   |
| 3.2.3 Employee development.....                 | 22.40      | 104  |
| 3.3 Access to Growth Opportunities.....         | 35.95      | 82   |
| Empowerment                                     |            |      |
| 3.3.1 Delegation of authority.....              | 37.84      | 80   |
| 3.3.2 Personal rights.....                      | 56.83      | 66   |
| Collaboration                                   |            |      |
| 3.3.3 Use of virtual social networks.....       | 70.53      | 65   |
| 3.3.4 Use of virtual professional networks..... | 12.73      | 67   |
| 3.3.5 Collaboration within organisations.....   | 16.87      | 111  |
| 3.3.6 Collaboration across organisations.....   | 20.88      | 93   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....38.87</b>            | <b>91</b> |     |
| 4.1 Sustainability.....              | 26.33     | 101 |
| 4.1.1 Pension system.....            | 24.49     | 69  |
| 4.1.2 Social protection.....         | 21.92     | 102 |
| 4.1.3 Brain retention.....           | 32.57     | 92  |
| 4.2 Lifestyle.....                   | 51.42     | 83  |
| 4.2.1 Environmental performance..... | 62.14     | 41  |
| 4.2.2 Personal safety.....           | 38.15     | 105 |
| 4.2.3 Physician density.....         | 23.67     | 75  |
| 4.2.4 Sanitation.....                | 81.72     | 81  |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....30.00</b>      | <b>93</b> |     |
| 5.1 Mid-Level Skills.....                               | 31.93     | 75  |
| 5.1.1 Workforce with secondary education.....           | 47.91     | 59  |
| 5.1.2 Population with secondary education.....          | 31.95     | 64  |
| 5.1.3 Technicians and associate professionals.....      | 27.68     | 74  |
| 5.1.4 Labour productivity per employee.....             | 20.18     | 64  |
| 5.2 Employability.....                                  | 28.07     | 103 |
| 5.2.1 Ease of finding skilled employees.....            | 36.84     | 85  |
| 5.2.2 Relevance of education system to the economy..... | 7.69      | 119 |
| 5.2.3 Skills matching with secondary education.....     | 32.79     | 89  |
| 5.2.4 Skills matching with tertiary education.....      | 34.97     | 84  |

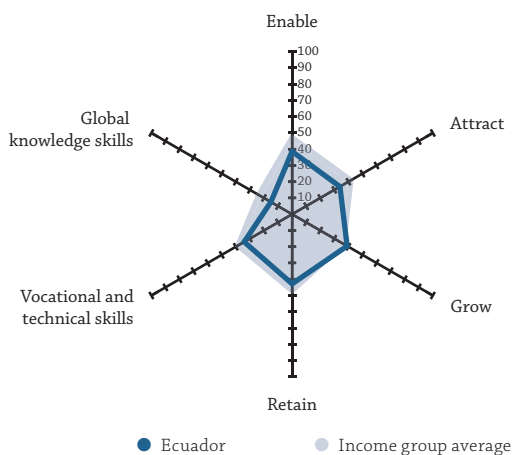
|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....16.38</b>          | <b>87</b> |     |
| 6.1 High-Level Skills.....                          | 23.07     | 79  |
| 6.1.1 Workforce with tertiary education.....        | 38.17     | 48  |
| 6.1.2 Population with tertiary education.....       | 19.19     | 75  |
| 6.1.3 Professionals.....                            | 20.51     | 77  |
| 6.1.4 Researchers.....                              | n/a       | n/a |
| 6.1.5 Senior officials and managers.....            | 13.10     | 78  |
| 6.1.6 Availability of scientists and engineers..... | 24.42     | 103 |
| 6.2 Talent Impact.....                              | 9.68      | 97  |
| 6.2.1 Innovation output.....                        | 23.62     | 75  |
| 6.2.2 High-value exports.....                       | 7.94      | 76  |
| 6.2.3 New product entrepreneurial activity.....     | n/a       | n/a |
| 6.2.4 New business density.....                     | 7.08      | 60  |
| 6.2.5 Scientific journal articles.....              | 0.07      | 123 |

# ECUADOR

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>87</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>16.62</b>                           |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 38.63 103</b>                 |       |      |
| 1.1 Regulatory Landscape.....                  | 37.43 | 102  |
| 1.1.1 Government effectiveness.....            | 34.49 | 90   |
| 1.1.2 Business-government relations.....       | 45.03 | 94   |
| 1.1.3 Political stability.....                 | 62.27 | 68   |
| 1.1.4 Regulatory quality.....                  | 23.44 | 117  |
| 1.1.5 Corruption.....                          | 21.92 | 89   |
| 1.2 Market Landscape.....                      | 37.88 | 96   |
| 1.2.1 Competition intensity.....               | 67.81 | 64   |
| 1.2.2 Ease of doing business.....              | 48.42 | 97   |
| 1.2.3 Cluster development.....                 | 17.21 | 106  |
| 1.2.4 R&D expenditure.....                     | 10.10 | 64   |
| 1.2.5 ICT infrastructure.....                  | 41.35 | 80   |
| 1.2.6 Technology utilisation.....              | 42.40 | 88   |
| 1.3 Business and Labour Landscape.....         | 40.57 | 98   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 44.33 | 99   |
| 1.3.2 Ease of redundancy.....                  | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 17.06 | 112  |
| 1.3.4 Labour-employer cooperation.....         | 37.65 | 74   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 28.77 | 108  |
| 1.3.6 Relationship of pay to productivity..... | 40.61 | 81   |
| <b>2 ATTRACT..... 33.98 107</b>                |       |      |
| 2.1 External Openness.....                     | 21.20 | 118  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 34.51 | 113  |
| 2.1.2 Prevalence of foreign ownership.....     | 27.49 | 119  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 4.82  | 74   |
| 2.1.4 International students.....              | 3.78  | 79   |
| 2.1.5 Brain gain.....                          | 35.41 | 84   |
| 2.2 Internal Openness.....                     | 46.75 | 74   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 27.06 | 86   |
| 2.2.2 Tolerance of immigrants.....             | 72.97 | 30   |
| 2.2.3 Social mobility.....                     | 33.85 | 109  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 71.61 | 57   |
| 2.2.5 Gender earnings gap.....                 | 53.52 | 61   |
| 2.2.6 Leadership opportunities for women.....  | 21.51 | 102  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>11,617.43</b> |
| GDP (US\$ billions).....               | <b>103.06</b>    |
| GTCI score.....                        | <b>33.94</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 39.12 56</b>                     |       |      |
| 3.1 Formal Education.....                       | 33.53 | 51   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 31.56 | 51   |
| 3.1.2 Tertiary enrolment.....                   | 36.98 | 61   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 51.80 | 6    |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 13.77 | 66   |
| 3.2 Lifelong Learning.....                      | 51.29 | 39   |
| 3.2.1 Quality of management schools.....        | 34.56 | 85   |
| 3.2.2 Prevalence of training in firms.....      | 92.74 | 2    |
| 3.2.3 Employee development.....                 | 26.56 | 94   |
| 3.3 Access to Growth Opportunities.....         | 32.54 | 97   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 36.57 | 83   |
| 3.3.2 Personal rights.....                      | 41.19 | 87   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 64.42 | 84   |
| 3.3.4 Use of virtual professional networks..... | 20.37 | 49   |
| 3.3.5 Collaboration within organisations.....   | 18.01 | 109  |
| 3.3.6 Collaboration across organisations.....   | 14.68 | 107  |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 42.81 78</b>        |       |    |
| 4.1 Sustainability.....              | 31.93 | 82 |
| 4.1.1 Pension system.....            | 24.49 | 69 |
| 4.1.2 Social protection.....         | 38.03 | 68 |
| 4.1.3 Brain retention.....           | 33.29 | 89 |
| 4.2 Lifestyle.....                   | 53.68 | 75 |
| 4.2.1 Environmental performance..... | 49.99 | 74 |
| 4.2.2 Personal safety.....           | 53.39 | 82 |
| 4.2.3 Physician density.....         | 26.41 | 71 |
| 4.2.4 Sanitation.....                | 84.95 | 76 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 34.03 77</b>  |       |    |
| 5.1 Mid-Level Skills.....                               | 28.33 | 82 |
| 5.1.1 Workforce with secondary education.....           | 40.57 | 68 |
| 5.1.2 Population with secondary education.....          | 40.80 | 50 |
| 5.1.3 Technicians and associate professionals.....      | 19.64 | 85 |
| 5.1.4 Labour productivity per employee.....             | 12.31 | 76 |
| 5.2 Employability.....                                  | 39.74 | 71 |
| 5.2.1 Ease of finding skilled employees.....            | 39.61 | 77 |
| 5.2.2 Relevance of education system to the economy..... | 29.05 | 82 |
| 5.2.3 Skills matching with secondary education.....     | 42.73 | 61 |
| 5.2.4 Skills matching with tertiary education.....      | 47.55 | 63 |

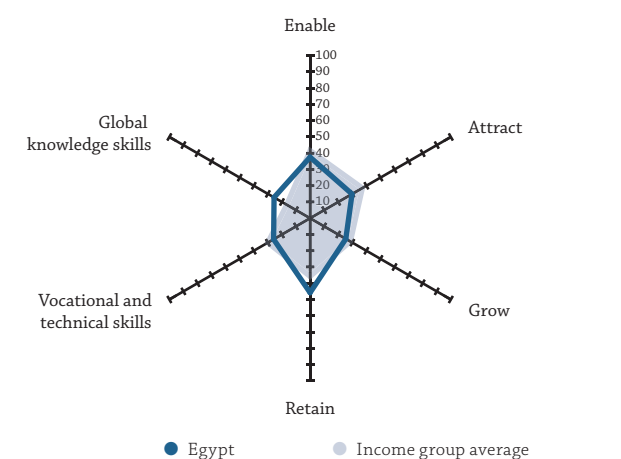
|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 15.07 90</b>      |       |     |
| 6.1 High-Level Skills.....                          | 16.00 | 94  |
| 6.1.1 Workforce with tertiary education.....        | 22.83 | 82  |
| 6.1.2 Population with tertiary education.....       | 21.22 | 69  |
| 6.1.3 Professionals.....                            | 19.38 | 80  |
| 6.1.4 Researchers.....                              | 4.77  | 67  |
| 6.1.5 Senior officials and managers.....            | 5.36  | 104 |
| 6.1.6 Availability of scientists and engineers..... | 22.46 | 107 |
| 6.2 Talent Impact.....                              | 14.14 | 80  |
| 6.2.1 Innovation output.....                        | 17.24 | 94  |
| 6.2.2 High-value exports.....                       | 15.19 | 53  |
| 6.2.3 New product entrepreneurial activity.....     | 21.53 | 63  |
| 6.2.4 New business density.....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....              | 2.60  | 80  |

# EGYPT

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>96</b>                               |
| Income group.....          | <b>Lower-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>97.55</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>1 ENABLE.....37.58 105</b>                           |       |      |
| 1.1 Regulatory Landscape.....29.64 116                  |       |      |
| 1.1.1 Government effectiveness.....28.78 102            |       |      |
| 1.1.2 Business-government relations.....39.96 102       |       |      |
| 1.1.3 Political stability.....31.71 115                 |       |      |
| 1.1.4 Regulatory quality.....25.84 114                  |       |      |
| 1.1.5 Corruption.....21.92 89                           |       |      |
| 1.2 Market Landscape.....41.61 82                       |       |      |
| 1.2.1 Competition intensity.....59.37 82                |       |      |
| 1.2.2 Ease of doing business.....45.53 103              |       |      |
| 1.2.3 Cluster development.....41.59 53                  |       |      |
| 1.2.4 R&D expenditure.....16.38 48                      |       |      |
| 1.2.5 ICT infrastructure.....47.33 75                   |       |      |
| 1.2.6 Technology utilisation.....39.49 94               |       |      |
| 1.3 Business and Labour Landscape.....41.49 93          |       |      |
| Labour Market                                           |       |      |
| 1.3.1 Ease of hiring.....100.00 1                       |       |      |
| 1.3.2 Ease of redundancy.....25.00 109                  |       |      |
| 1.3.3 Active labour market policies.....25.98 98        |       |      |
| 1.3.4 Labour-employer cooperation.....28.93 96          |       |      |
| Management Practice                                     |       |      |
| 1.3.5 Professional management.....36.72 88              |       |      |
| 1.3.6 Relationship of pay to productivity.....32.28 102 |       |      |
| <b>2 ATTRACT.....29.80 116</b>                          |       |      |
| 2.1 External Openness.....25.41 110                     |       |      |
| Attract Business                                        |       |      |
| 2.1.1 FDI and technology transfer.....54.56 69          |       |      |
| 2.1.2 Prevalence of foreign ownership.....38.74 107     |       |      |
| Attract People                                          |       |      |
| 2.1.3 Migrant stock.....0.87 110                        |       |      |
| 2.1.4 International students.....9.12 68                |       |      |
| 2.1.5 Brain gain.....23.78 106                          |       |      |
| 2.2 Internal Openness.....34.18 118                     |       |      |
| Social Inclusion                                        |       |      |
| 2.2.1 Tolerance of minorities.....9.41 112              |       |      |
| 2.2.2 Tolerance of immigrants.....37.84 91              |       |      |
| 2.2.3 Social mobility.....36.26 101                     |       |      |
| Gender Equality                                         |       |      |
| 2.2.4 Female graduates.....64.26 74                     |       |      |
| 2.2.5 Gender earnings gap.....14.58 110                 |       |      |
| 2.2.6 Leadership opportunities for women.....42.74 58   |       |      |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>11,582.59</b> |
| GDP (US\$ billions).....               | <b>235.37</b>    |
| GTCI score.....                        | <b>31.68</b>     |
| GTCI score (income group average)..... | <b>31.64</b>     |

|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>3 GROW.....25.38 102</b>                            |       |      |
| 3.1 Formal Education.....31.35 56                      |       |      |
| Enrolment                                              |       |      |
| 3.1.1 Vocational enrolment.....44.17 33                |       |      |
| 3.1.2 Tertiary enrolment.....27.80 73                  |       |      |
| Quality                                                |       |      |
| 3.1.3 Tertiary education expenditure.....n/a n/a       |       |      |
| 3.1.4 Reading, maths, and science.....n/a n/a          |       |      |
| 3.1.5 University ranking.....22.08 50                  |       |      |
| 3.2 Lifelong Learning.....14.17 123                    |       |      |
| 3.2.1 Quality of management schools.....14.03 118      |       |      |
| 3.2.2 Prevalence of training in firms.....8.71 87      |       |      |
| 3.2.3 Employee development.....19.78 109               |       |      |
| 3.3 Access to Growth Opportunities.....30.60 105       |       |      |
| Empowerment                                            |       |      |
| 3.3.1 Delegation of authority.....27.74 110            |       |      |
| 3.3.2 Personal rights.....15.64 110                    |       |      |
| Collaboration                                          |       |      |
| 3.3.3 Use of virtual social networks.....77.99 45      |       |      |
| 3.3.4 Use of virtual professional networks.....6.54 88 |       |      |
| 3.3.5 Collaboration within organisations.....17.09 110 |       |      |
| 3.3.6 Collaboration across organisations.....38.63 46  |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....45.80 68</b>                 |  |  |
| 4.1 Sustainability.....38.12 69              |  |  |
| 4.1.1 Pension system.....54.08 47            |  |  |
| 4.1.2 Social protection.....29.87 85         |  |  |
| 4.1.3 Brain retention.....30.40 96           |  |  |
| 4.2 Lifestyle.....53.48 77                   |  |  |
| 4.2.1 Environmental performance.....56.31 59 |  |  |
| 4.2.2 Personal safety.....52.36 86           |  |  |
| 4.2.3 Physician density.....12.76 92         |  |  |
| 4.2.4 Sanitation.....92.47 62                |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....25.92 103</b>          |  |  |
| 5.1 Mid-Level Skills.....37.09 66                               |  |  |
| 5.1.1 Workforce with secondary education.....51.72 49           |  |  |
| 5.1.2 Population with secondary education.....34.09 59          |  |  |
| 5.1.3 Technicians and associate professionals.....38.84 57      |  |  |
| 5.1.4 Labour productivity per employee.....23.69 57             |  |  |
| 5.2 Employability.....14.75 123                                 |  |  |
| 5.2.1 Ease of finding skilled employees.....30.78 101           |  |  |
| 5.2.2 Relevance of education system to the economy.....5.77 120 |  |  |
| 5.2.3 Skills matching with secondary education.....14.11 120    |  |  |
| 5.2.4 Skills matching with tertiary education.....8.33 123      |  |  |

|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....25.60 59</b>               |  |  |
| 6.1 High-Level Skills.....34.50 48                          |  |  |
| 6.1.1 Workforce with tertiary education.....28.31 69        |  |  |
| 6.1.2 Population with tertiary education.....20.54 71       |  |  |
| 6.1.3 Professionals.....28.93 57                            |  |  |
| 6.1.4 Researchers.....8.17 56                               |  |  |
| 6.1.5 Senior officials and managers.....76.79 5             |  |  |
| 6.1.6 Availability of scientists and engineers.....44.25 53 |  |  |
| 6.2 Talent Impact.....16.71 70                              |  |  |
| 6.2.1 Innovation output.....23.16 77                        |  |  |
| 6.2.2 High-value exports.....0.88 113                       |  |  |
| 6.2.3 New product entrepreneurial activity.....38.39 43     |  |  |
| 6.2.4 New business density.....n/a n/a                      |  |  |
| 6.2.5 Scientific journal articles.....4.40 72               |  |  |

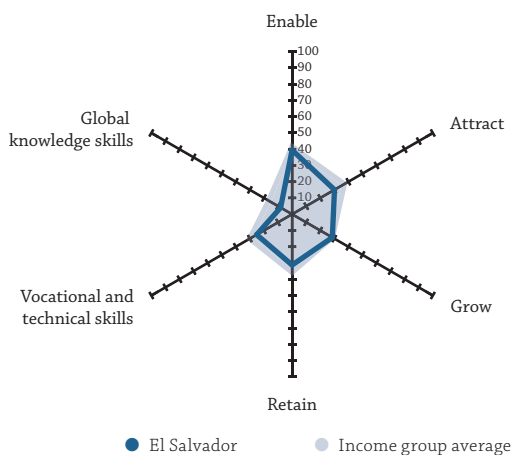


# EL SALVADOR

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>106</b>                             |
| Income group.....          | <b>Lower-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>6.38</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>1 ENABLE.....39.48 99</b>                            |       |      |
| 1.1 Regulatory Landscape.....44.83 80                   |       |      |
| 1.1.1 Government effectiveness.....38.21 87             |       |      |
| 1.1.2 Business-government relations.....49.45 82        |       |      |
| 1.1.3 Political stability.....63.19 65                  |       |      |
| 1.1.4 Regulatory quality.....50.00 63                   |       |      |
| 1.1.5 Corruption.....23.29 87                           |       |      |
| 1.2 Market Landscape.....37.23 99                       |       |      |
| 1.2.1 Competition intensity.....72.12 54                |       |      |
| 1.2.2 Ease of doing business.....63.85 66               |       |      |
| 1.2.3 Cluster development.....12.86 114                 |       |      |
| 1.2.4 R&D expenditure.....2.69 94                       |       |      |
| 1.2.5 ICT infrastructure.....39.06 86                   |       |      |
| 1.2.6 Technology utilisation.....32.83 108              |       |      |
| 1.3 Business and Labour Landscape.....36.39 109         |       |      |
| Labour Market                                           |       |      |
| 1.3.1 Ease of hiring.....44.33 99                       |       |      |
| 1.3.2 Ease of redundancy.....100.00 1                   |       |      |
| 1.3.3 Active labour market policies.....12.03 120       |       |      |
| 1.3.4 Labour-employer cooperation.....18.24 115         |       |      |
| Management Practice                                     |       |      |
| 1.3.5 Professional management.....25.44 111             |       |      |
| 1.3.6 Relationship of pay to productivity.....18.27 122 |       |      |
| <b>2 ATTRACT.....30.12 115</b>                          |       |      |
| 2.1 External Openness.....22.79 115                     |       |      |
| Attract Business                                        |       |      |
| 2.1.1 FDI and technology transfer.....36.65 109         |       |      |
| 2.1.2 Prevalence of foreign ownership.....53.66 80      |       |      |
| Attract People                                          |       |      |
| 2.1.3 Migrant stock.....1.23 103                        |       |      |
| 2.1.4 International students.....1.84 88                |       |      |
| 2.1.5 Brain gain.....20.58 114                          |       |      |
| 2.2 Internal Openness.....37.46 110                     |       |      |
| Social Inclusion                                        |       |      |
| 2.2.1 Tolerance of minorities.....42.35 63              |       |      |
| 2.2.2 Tolerance of immigrants.....35.14 94              |       |      |
| 2.2.3 Social mobility.....23.57 121                     |       |      |
| Gender Equality                                         |       |      |
| 2.2.4 Female graduates.....69.02 68                     |       |      |
| 2.2.5 Gender earnings gap.....50.78 72                  |       |      |
| 2.2.6 Leadership opportunities for women.....3.89 124   |       |      |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>8,006.06</b> |
| GDP (US\$ billions).....               | <b>24.81</b>    |
| GTCI score.....                        | <b>27.12</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW.....28.59 91</b>                              |       |      |
| 3.1 Formal Education.....16.15 92                       |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment.....36.77 43                 |       |      |
| 3.1.2 Tertiary enrolment.....22.51 80                   |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure.....5.33 109       |       |      |
| 3.1.4 Reading, maths, and science.....n/a n/a           |       |      |
| 3.1.5 University ranking.....0.00 78                    |       |      |
| 3.2 Lifelong Learning.....37.43 72                      |       |      |
| 3.2.1 Quality of management schools.....23.76 108       |       |      |
| 3.2.2 Prevalence of training in firms.....66.49 16      |       |      |
| 3.2.3 Employee development.....22.03 106                |       |      |
| 3.3 Access to Growth Opportunities.....32.19 100        |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority.....31.33 101             |       |      |
| 3.3.2 Personal rights.....59.33 62                      |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks.....62.55 87       |       |      |
| 3.3.4 Use of virtual professional networks.....12.30 68 |       |      |
| 3.3.5 Collaboration within organisations.....7.72 123   |       |      |
| 3.3.6 Collaboration across organisations.....19.93 94   |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....31.26 100</b>                |  |  |
| 4.1 Sustainability.....19.17 115             |  |  |
| 4.1.1 Pension system.....21.43 74            |  |  |
| 4.1.2 Social protection.....15.03 113        |  |  |
| 4.1.3 Brain retention.....21.04 107          |  |  |
| 4.2 Lifestyle.....43.36 93                   |  |  |
| 4.2.1 Environmental performance.....44.14 84 |  |  |
| 4.2.2 Personal safety.....8.44 120           |  |  |
| 4.2.3 Physician density.....30.53 60         |  |  |
| 4.2.4 Sanitation.....90.32 69                |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....25.14 106</b>          |  |  |
| 5.1 Mid-Level Skills.....27.33 84                               |  |  |
| 5.1.1 Workforce with secondary education.....42.09 64           |  |  |
| 5.1.2 Population with secondary education.....23.82 76          |  |  |
| 5.1.3 Technicians and associate professionals.....16.07 91      |  |  |
| 5.1.4 Labour productivity per employee.....n/a n/a              |  |  |
| 5.2 Employability.....28.95 113                                 |  |  |
| 5.2.1 Ease of finding skilled employees.....22.72 106           |  |  |
| 5.2.2 Relevance of education system to the economy.....1.64 122 |  |  |
| 5.2.3 Skills matching with secondary education.....31.61 92     |  |  |
| 5.2.4 Skills matching with tertiary education.....29.82 99      |  |  |

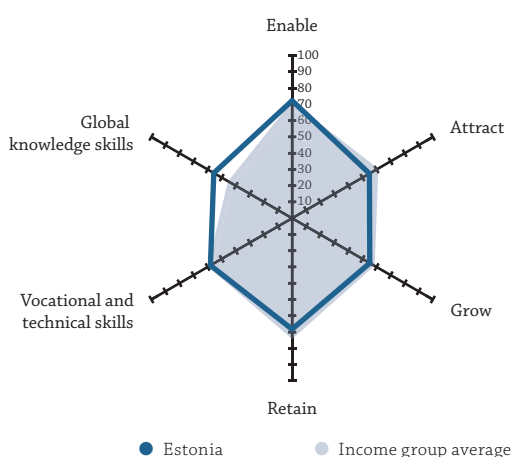
|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....8.15 114</b>               |  |  |
| 6.1 High-Level Skills.....7.97 116                          |  |  |
| 6.1.1 Workforce with tertiary education.....8.60 101        |  |  |
| 6.1.2 Population with tertiary education.....15.28 79       |  |  |
| 6.1.3 Professionals.....14.33 91                            |  |  |
| 6.1.4 Researchers.....0.68 86                               |  |  |
| 6.1.5 Senior officials and managers.....8.93 92             |  |  |
| 6.1.6 Availability of scientists and engineers.....0.00 125 |  |  |
| 6.2 Talent Impact.....8.33 102                              |  |  |
| 6.2.1 Innovation output.....12.27 109                       |  |  |
| 6.2.2 High-value exports.....8.37 75                        |  |  |
| 6.2.3 New product entrepreneurial activity.....18.36 67     |  |  |
| 6.2.4 New business density.....2.51 82                      |  |  |
| 6.2.5 Scientific journal articles.....0.14 117              |  |  |

# ESTONIA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>23</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>1.32</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 72.34 24</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 77.07 | 19   |
| 1.1.1 Government effectiveness.....            | 72.95 | 24   |
| 1.1.2 Business-government relations.....       | 67.99 | 35   |
| 1.1.3 Political stability.....                 | 80.56 | 33   |
| 1.1.4 Regulatory quality.....                  | 88.52 | 13   |
| 1.1.5 Corruption.....                          | 75.34 | 20   |
| 1.2 Market Landscape.....                      | 67.46 | 25   |
| 1.2.1 Competition intensity.....               | 87.46 | 11   |
| 1.2.2 Ease of doing business.....              | 89.67 | 10   |
| 1.2.3 Cluster development.....                 | 37.37 | 67   |
| 1.2.4 R&D expenditure.....                     | 29.89 | 25   |
| 1.2.5 ICT infrastructure.....                  | 82.44 | 18   |
| 1.2.6 Technology utilisation.....              | 77.95 | 20   |
| 1.3 Business and Labour Landscape.....         | 72.48 | 21   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 66.67 | 58   |
| 1.3.2 Ease of redundancy.....                  | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 77.79 | 14   |
| 1.3.4 Labour-employer cooperation.....         | 67.06 | 23   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 73.17 | 26   |
| 1.3.6 Relationship of pay to productivity..... | 75.21 | 15   |
| <b>2 ATTRACT..... 54.96 30</b>                 |       |      |
| 2.1 External Openness.....                     | 51.27 | 32   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 65.83 | 41   |
| 2.1.2 Prevalence of foreign ownership.....     | 89.38 | 8    |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 30.33 | 25   |
| 2.1.4 International students.....              | 26.00 | 34   |
| 2.1.5 Brain gain.....                          | 44.82 | 57   |
| 2.2 Internal Openness.....                     | 58.64 | 35   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 35.29 | 74   |
| 2.2.2 Tolerance of immigrants.....             | 13.51 | 115  |
| 2.2.3 Social mobility.....                     | 83.26 | 15   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 95.52 | 3    |
| 2.2.5 Gender earnings gap.....                 | 54.36 | 59   |
| 2.2.6 Leadership opportunities for women.....  | 69.90 | 22   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>31,637.68</b> |
| GDP (US\$ billions).....               | <b>25.92</b>     |
| GTCI score.....                        | <b>60.74</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 55.19 26</b>                     |       |      |
| 3.1 Formal Education.....                       | 48.34 | 28   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 40.13 | 37   |
| 3.1.2 Tertiary enrolment.....                   | 58.86 | 21   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 33.73 | 22   |
| 3.1.4 Reading, maths, and science.....          | 87.14 | 3    |
| 3.1.5 University ranking.....                   | 21.81 | 51   |
| 3.2 Lifelong Learning.....                      | 55.50 | 32   |
| 3.2.1 Quality of management schools.....        | 61.78 | 30   |
| 3.2.2 Prevalence of training in firms.....      | 41.95 | 38   |
| 3.2.3 Employee development.....                 | 62.76 | 28   |
| 3.3 Access to Growth Opportunities.....         | 61.73 | 24   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 64.45 | 27   |
| 3.3.2 Personal rights.....                      | 92.78 | 14   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 85.02 | 25   |
| 3.3.4 Use of virtual professional networks..... | 26.10 | 39   |
| 3.3.5 Collaboration within organisations.....   | 58.18 | 25   |
| 3.3.6 Collaboration across organisations.....   | 43.84 | 35   |

|                                      |        |    |
|--------------------------------------|--------|----|
| <b>4 RETAIN..... 68.28 28</b>        |        |    |
| 4.1 Sustainability.....              | 61.80  | 29 |
| 4.1.1 Pension system.....            | 93.88  | 6  |
| 4.1.2 Social protection.....         | 50.32  | 42 |
| 4.1.3 Brain retention.....           | 41.21  | 67 |
| 4.2 Lifestyle.....                   | 74.76  | 30 |
| 4.2.1 Environmental performance..... | 61.48  | 43 |
| 4.2.2 Personal safety.....           | 82.85  | 29 |
| 4.2.3 Physician density.....         | 54.71  | 24 |
| 4.2.4 Sanitation.....                | 100.00 | 1  |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 58.03 28</b>  |       |    |
| 5.1 Mid-Level Skills.....                               | 58.89 | 23 |
| 5.1.1 Workforce with secondary education.....           | 67.64 | 26 |
| 5.1.2 Population with secondary education.....          | 74.18 | 9  |
| 5.1.3 Technicians and associate professionals.....      | 58.93 | 26 |
| 5.1.4 Labour productivity per employee.....             | 34.80 | 45 |
| 5.2 Employability.....                                  | 57.17 | 33 |
| 5.2.1 Ease of finding skilled employees.....            | 39.48 | 78 |
| 5.2.2 Relevance of education system to the economy..... | 61.56 | 22 |
| 5.2.3 Skills matching with secondary education.....     | 64.59 | 21 |
| 5.2.4 Skills matching with tertiary education.....      | 63.03 | 32 |

|                                                     |        |    |
|-----------------------------------------------------|--------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 55.63 14</b>      |        |    |
| 6.1 High-Level Skills.....                          | 56.24  | 15 |
| 6.1.1 Workforce with tertiary education.....        | 59.51  | 19 |
| 6.1.2 Population with tertiary education.....       | 61.97  | 8  |
| 6.1.3 Professionals.....                            | 54.78  | 18 |
| 6.1.4 Researchers.....                              | 40.01  | 26 |
| 6.1.5 Senior officials and managers.....            | 70.83  | 6  |
| 6.1.6 Availability of scientists and engineers..... | 50.32  | 44 |
| 6.2 Talent Impact.....                              | 55.02  | 9  |
| 6.2.1 Innovation output.....                        | 63.30  | 17 |
| 6.2.2 High-value exports.....                       | 18.77  | 44 |
| 6.2.3 New product entrepreneurial activity.....     | 47.94  | 19 |
| 6.2.4 New business density.....                     | 100.00 | 1  |
| 6.2.5 Scientific journal articles.....              | 45.11  | 26 |

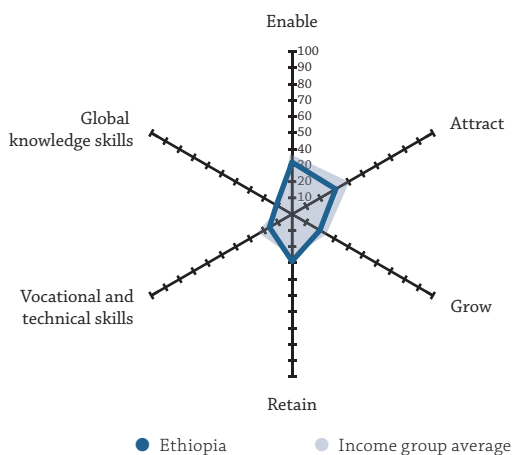


# ETHIOPIA

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>117</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>104.96</b>             |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....31.99 116</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 30.99 | 113  |
| 1.1.1 Government effectiveness.....            | 29.28 | 100  |
| 1.1.2 Business-government relations.....       | 49.89 | 81   |
| 1.1.3 Political stability.....                 | 28.24 | 118  |
| 1.1.4 Regulatory quality.....                  | 21.53 | 119  |
| 1.1.5 Corruption.....                          | 26.03 | 83   |
| 1.2 Market Landscape.....                      | 20.71 | 121  |
| 1.2.1 Competition intensity.....               | 27.09 | 124  |
| 1.2.2 Ease of doing business.....              | 30.35 | 116  |
| 1.2.3 Cluster development.....                 | 31.97 | 80   |
| 1.2.4 R&D expenditure.....                     | 13.92 | 53   |
| 1.2.5 ICT infrastructure.....                  | 8.52  | 118  |
| 1.2.6 Technology utilisation.....              | 12.42 | 122  |
| 1.3 Business and Labour Landscape.....         | 44.26 | 89   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 66.67 | 58   |
| 1.3.2 Ease of redundancy.....                  | 62.50 | 64   |
| 1.3.3 Active labour market policies.....       | 42.23 | 61   |
| 1.3.4 Labour-employer cooperation.....         | 21.50 | 110  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 29.13 | 106  |
| 1.3.6 Relationship of pay to productivity..... | 43.53 | 71   |
| <b>2 ATTRACT.....30.96 114</b>                 |       |      |
| 2.1 External Openness.....                     | 30.74 | 87   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 37.41 | 108  |
| 2.1.2 Prevalence of foreign ownership.....     | 37.22 | 108  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 2.27  | 95   |
| 2.1.4 International students.....              | n/a   | n/a  |
| 2.1.5 Brain gain.....                          | 46.05 | 51   |
| 2.2 Internal Openness.....                     | 31.18 | 122  |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 14.12 | 107  |
| 2.2.2 Tolerance of immigrants.....             | 45.95 | 80   |
| 2.2.3 Social mobility.....                     | 42.53 | 83   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 13.21 | 101  |
| 2.2.5 Gender earnings gap.....                 | 52.69 | 62   |
| 2.2.6 Leadership opportunities for women.....  | 18.58 | 110  |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>1,899.21</b> |
| GDP (US\$ billions).....               | <b>80.56</b>    |
| GTCI score.....                        | <b>23.15</b>    |
| GTCI score (income group average)..... | <b>24.81</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....19.72 120</b>                     |       |      |
| 3.1 Formal Education.....                       | 16.55 | 91   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 14.55 | 81   |
| 3.1.2 Tertiary enrolment.....                   | 6.07  | 106  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 45.58 | 10   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 26.48 | 111  |
| 3.2.1 Quality of management schools.....        | 29.59 | 95   |
| 3.2.2 Prevalence of training in firms.....      | 22.96 | 72   |
| 3.2.3 Employee development.....                 | 26.90 | 93   |
| 3.3 Access to Growth Opportunities.....         | 16.12 | 124  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 18.93 | 121  |
| 3.3.2 Personal rights.....                      | 5.94  | 119  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 17.83 | 123  |
| 3.3.4 Use of virtual professional networks..... | 0.00  | 120  |
| 3.3.5 Collaboration within organisations.....   | 21.68 | 99   |
| 3.3.6 Collaboration across organisations.....   | 32.36 | 62   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....28.93 104</b>        |       |     |
| 4.1 Sustainability.....              | 36.78 | 70  |
| 4.1.1 Pension system.....            | n/a   | n/a |
| 4.1.2 Social protection.....         | 33.38 | 76  |
| 4.1.3 Brain retention.....           | 40.17 | 69  |
| 4.2 Lifestyle.....                   | 21.09 | 122 |
| 4.2.1 Environmental performance..... | 28.92 | 105 |
| 4.2.2 Personal safety.....           | 55.33 | 76  |
| 4.2.3 Physician density.....         | 0.11  | 122 |
| 4.2.4 Sanitation.....                | 0.00  | 125 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....16.08 122</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 3.27  | 124 |
| 5.1.1 Workforce with secondary education.....           | 3.50  | 112 |
| 5.1.2 Population with secondary education.....          | 3.99  | 99  |
| 5.1.3 Technicians and associate professionals.....      | 4.91  | 114 |
| 5.1.4 Labour productivity per employee.....             | 0.68  | 102 |
| 5.2 Employability.....                                  | 28.88 | 100 |
| 5.2.1 Ease of finding skilled employees.....            | 32.95 | 96  |
| 5.2.2 Relevance of education system to the economy..... | 31.76 | 74  |
| 5.2.3 Skills matching with secondary education.....     | 19.71 | 114 |
| 5.2.4 Skills matching with tertiary education.....      | 31.12 | 94  |

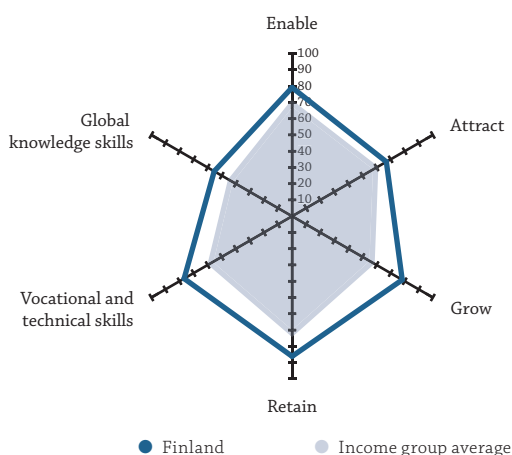
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|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....11.19 100</b>      |       |     |
| 6.1 High-Level Skills.....                          | 10.43 | 113 |
| 6.1.1 Workforce with tertiary education.....        | 24.50 | 76  |
| 6.1.2 Population with tertiary education.....       | 0.00  | 106 |
| 6.1.3 Professionals.....                            | 5.62  | 109 |
| 6.1.4 Researchers.....                              | 0.46  | 88  |
| 6.1.5 Senior officials and managers.....            | 2.98  | 112 |
| 6.1.6 Availability of scientists and engineers..... | 29.00 | 89  |
| 6.2 Talent Impact.....                              | 11.96 | 85  |
| 6.2.1 Innovation output.....                        | n/a   | n/a |
| 6.2.2 High-value exports.....                       | 31.29 | 23  |
| 6.2.3 New product entrepreneurial activity.....     | 16.08 | 74  |
| 6.2.4 New business density.....                     | 0.10  | 102 |
| 6.2.5 Scientific journal articles.....              | 0.39  | 107 |

# FINLAND

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>6</b>           |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>5.51</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....79.19</b>                      | <b>14</b> |      |
| 1.1 Regulatory Landscape.....                  | 91.08     | 6    |
| 1.1.1 Government effectiveness.....            | 91.07     | 6    |
| 1.1.2 Business-government relations.....       | 91.61     | 5    |
| 1.1.3 Political stability.....                 | 86.81     | 19   |
| 1.1.4 Regulatory quality.....                  | 91.39     | 7    |
| 1.1.5 Corruption.....                          | 94.52     | 3    |
| 1.2 Market Landscape.....                      | 75.95     | 14   |
| 1.2.1 Competition intensity.....               | 56.71     | 90   |
| 1.2.2 Ease of doing business.....              | 88.90     | 11   |
| 1.2.3 Cluster development.....                 | 78.32     | 15   |
| 1.2.4 R&D expenditure.....                     | 64.53     | 9    |
| 1.2.5 ICT infrastructure.....                  | 72.14     | 39   |
| 1.2.6 Technology utilisation.....              | 95.10     | 6    |
| 1.3 Business and Labour Landscape.....         | 70.54     | 25   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 55.67     | 76   |
| 1.3.2 Ease of redundancy.....                  | 50.00     | 85   |
| 1.3.3 Active labour market policies.....       | 78.77     | 13   |
| 1.3.4 Labour-employer cooperation.....         | 69.00     | 20   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 97.01     | 3    |
| 1.3.6 Relationship of pay to productivity..... | 72.77     | 21   |
| <b>2 ATTRACT.....66.97</b>                     | <b>15</b> |      |
| 2.1 External Openness.....                     | 48.67     | 33   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 66.16     | 40   |
| 2.1.2 Prevalence of foreign ownership.....     | 76.69     | 27   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 12.72     | 51   |
| 2.1.4 International students.....              | 39.26     | 26   |
| 2.1.5 Brain gain.....                          | 48.54     | 47   |
| 2.2 Internal Openness.....                     | 85.26     | 2    |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 91.76     | 4    |
| 2.2.2 Tolerance of immigrants.....             | 75.68     | 26   |
| 2.2.3 Social mobility.....                     | 100.00    | 1    |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 78.75     | 38   |
| 2.2.5 Gender earnings gap.....                 | 65.35     | 25   |
| 2.2.6 Leadership opportunities for women.....  | 100.00    | 1    |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>45,191.59</b> |
| GDP (US\$ billions).....               | <b>251.88</b>    |
| GTCI score.....                        | <b>73.78</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score    | Rank |
|-------------------------------------------------|----------|------|
| <b>3 GROW.....78.25</b>                         | <b>4</b> |      |
| 3.1 Formal Education.....                       | 70.70    | 2    |
| Enrolment                                       |          |      |
| 3.1.1 Vocational enrolment.....                 | 100.00   | 1    |
| 3.1.2 Tertiary enrolment.....                   | 71.20    | 7    |
| Quality                                         |          |      |
| 3.1.3 Tertiary education expenditure.....       | 47.41    | 7    |
| 3.1.4 Reading, maths, and science.....          | 86.41    | 5    |
| 3.1.5 University ranking.....                   | 48.47    | 18   |
| 3.2 Lifelong Learning.....                      | 81.86    | 8    |
| 3.2.1 Quality of management schools.....        | 78.90    | 11   |
| 3.2.2 Prevalence of training in firms.....      | n/a      | n/a  |
| 3.2.3 Employee development.....                 | 84.82    | 10   |
| 3.3 Access to Growth Opportunities.....         | 82.18    | 8    |
| Empowerment                                     |          |      |
| 3.3.1 Delegation of authority.....              | 90.71    | 4    |
| 3.3.2 Personal rights.....                      | 97.44    | 3    |
| Collaboration                                   |          |      |
| 3.3.3 Use of virtual social networks.....       | 90.41    | 10   |
| 3.3.4 Use of virtual professional networks..... | 36.65    | 26   |
| 3.3.5 Collaboration within organisations.....   | 87.95    | 8    |
| 3.3.6 Collaboration across organisations.....   | 89.93    | 4    |

|                                      |          |    |
|--------------------------------------|----------|----|
| <b>4 RETAIN.....86.21</b>            | <b>5</b> |    |
| 4.1 Sustainability.....              | 88.98    | 4  |
| 4.1.1 Pension system.....            | 89.80    | 18 |
| 4.1.2 Social protection.....         | 97.07    | 3  |
| 4.1.3 Brain retention.....           | 80.06    | 10 |
| 4.2 Lifestyle.....                   | 83.45    | 11 |
| 4.2.1 Environmental performance..... | 85.36    | 10 |
| 4.2.2 Personal safety.....           | 98.56    | 8  |
| 4.2.3 Physician density.....         | 50.95    | 32 |
| 4.2.4 Sanitation.....                | 98.92    | 21 |

|                                                         |          |    |
|---------------------------------------------------------|----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....76.71</b>      | <b>4</b> |    |
| 5.1 Mid-Level Skills.....                               | 63.43    | 14 |
| 5.1.1 Workforce with secondary education.....           | 61.89    | 30 |
| 5.1.2 Population with secondary education.....          | 55.06    | 28 |
| 5.1.3 Technicians and associate professionals.....      | 83.93    | 8  |
| 5.1.4 Labour productivity per employee.....             | 52.82    | 18 |
| 5.2 Employability.....                                  | 89.99    | 3  |
| 5.2.1 Ease of finding skilled employees.....            | 97.77    | 3  |
| 5.2.2 Relevance of education system to the economy..... | 90.33    | 3  |
| 5.2.3 Skills matching with secondary education.....     | 86.94    | 2  |
| 5.2.4 Skills matching with tertiary education.....      | 84.93    | 7  |

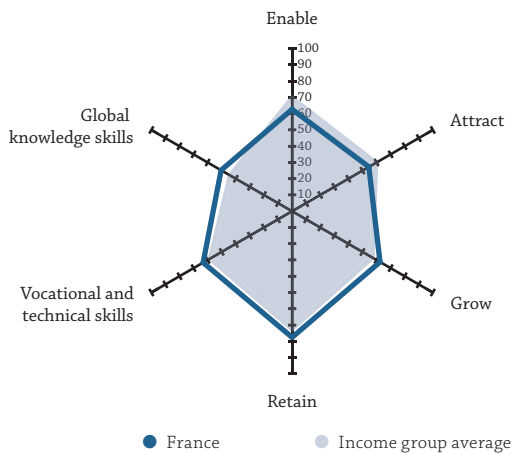
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|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....55.33</b>          | <b>15</b> |    |
| 6.1 High-Level Skills.....                          | 64.51     | 7  |
| 6.1.1 Workforce with tertiary education.....        | 63.79     | 14 |
| 6.1.2 Population with tertiary education.....       | 56.03     | 14 |
| 6.1.3 Professionals.....                            | 68.54     | 8  |
| 6.1.4 Researchers.....                              | 79.07     | 7  |
| 6.1.5 Senior officials and managers.....            | 19.64     | 65 |
| 6.1.6 Availability of scientists and engineers..... | 100.00    | 1  |
| 6.2 Talent Impact.....                              | 46.15     | 17 |
| 6.2.1 Innovation output.....                        | 73.41     | 8  |
| 6.2.2 High-value exports.....                       | 15.31     | 52 |
| 6.2.3 New product entrepreneurial activity.....     | 46.39     | 24 |
| 6.2.4 New business density.....                     | 18.99     | 31 |
| 6.2.5 Scientific journal articles.....              | 76.66     | 7  |

# FRANCE

Key Indicators

|                             |                    |
|-----------------------------|--------------------|
| Rank (out of 125).....      | <b>21</b>          |
| Income group .....          | <b>High income</b> |
| Regional group .....        | <b>Europe</b>      |
| Population (millions) ..... | <b>67.12</b>       |

GTCI 2019 Country Profile by Pillar



|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>1 ENABLE.....62.70</b>                       | <b>30</b> |      |
| 1.1 Regulatory Landscape.....                   | 65.39     | 36   |
| 1.1.1 Government effectiveness .....            | 80.15     | 17   |
| 1.1.2 Business-government relations .....       | 36.20     | 107  |
| 1.1.3 Political stability .....                 | 63.19     | 65   |
| 1.1.4 Regulatory quality .....                  | 73.44     | 27   |
| 1.1.5 Corruption .....                          | 73.97     | 22   |
| 1.2 Market Landscape.....                       | 75.00     | 17   |
| 1.2.1 Competition intensity .....               | 87.84     | 10   |
| 1.2.2 Ease of doing business .....              | 81.29     | 28   |
| 1.2.3 Cluster development .....                 | 67.71     | 19   |
| 1.2.4 R&D expenditure .....                     | 52.71     | 12   |
| 1.2.5 ICT infrastructure .....                  | 88.55     | 10   |
| 1.2.6 Technology utilisation .....              | 71.87     | 28   |
| 1.3 Business and Labour Landscape.....          | 47.71     | 81   |
| Labour Market                                   |           |      |
| 1.3.1 Ease of hiring .....                      | 22.33     | 112  |
| 1.3.2 Ease of redundancy .....                  | 50.00     | 85   |
| 1.3.3 Active labour market policies .....       | 58.30     | 37   |
| 1.3.4 Labour-employer cooperation .....         | 26.96     | 101  |
| Management Practice                             |           |      |
| 1.3.5 Professional management .....             | 77.21     | 22   |
| 1.3.6 Relationship of pay to productivity ..... | 51.48     | 59   |
| <b>2 ATTRACT.....54.54</b>                      | <b>33</b> |      |
| 2.1 External Openness .....                     | 54.77     | 27   |
| Attract Business                                |           |      |
| 2.1.1 FDI and technology transfer .....         | 72.40     | 27   |
| 2.1.2 Prevalence of foreign ownership .....     | 82.52     | 18   |
| Attract People                                  |           |      |
| 2.1.3 Migrant stock .....                       | 25.01     | 31   |
| 2.1.4 International students .....              | 49.71     | 19   |
| 2.1.5 Brain gain .....                          | 44.20     | 59   |
| 2.2 Internal Openness.....                      | 54.31     | 46   |
| Social Inclusion                                |           |      |
| 2.2.1 Tolerance of minorities .....             | 32.94     | 76   |
| 2.2.2 Tolerance of immigrants .....             | 71.62     | 34   |
| 2.2.3 Social mobility .....                     | 61.15     | 32   |
| Gender Equality                                 |           |      |
| 2.2.4 Female graduates .....                    | 70.35     | 64   |
| 2.2.5 Gender earnings gap .....                 | 68.82     | 17   |
| 2.2.6 Leadership opportunities for women .....  | 21.00     | 103  |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>42,778.93</b> |
| GDP (US\$ billions) .....               | <b>2,582.50</b>  |
| GTCI score .....                        | <b>61.82</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

|                                                  | Score     | Rank |
|--------------------------------------------------|-----------|------|
| <b>3 GROW.....62.47</b>                          | <b>18</b> |      |
| 3.1 Formal Education.....                        | 52.74     | 19   |
| Enrolment                                        |           |      |
| 3.1.1 Vocational enrolment .....                 | 37.69     | 42   |
| 3.1.2 Tertiary enrolment .....                   | 53.26     | 30   |
| Quality                                          |           |      |
| 3.1.3 Tertiary education expenditure .....       | 29.08     | 35   |
| 3.1.4 Reading, maths, and science .....          | 73.71     | 23   |
| 3.1.5 University ranking .....                   | 69.94     | 9    |
| 3.2 Lifelong Learning.....                       | 73.31     | 18   |
| 3.2.1 Quality of management schools .....        | 78.98     | 10   |
| 3.2.2 Prevalence of training in firms .....      | n/a       | n/a  |
| 3.2.3 Employee development .....                 | 67.63     | 23   |
| 3.3 Access to Growth Opportunities .....         | 61.35     | 25   |
| Empowerment                                      |           |      |
| 3.3.1 Delegation of authority .....              | 59.35     | 31   |
| 3.3.2 Personal rights .....                      | 85.66     | 24   |
| Collaboration                                    |           |      |
| 3.3.3 Use of virtual social networks .....       | 78.16     | 44   |
| 3.3.4 Use of virtual professional networks ..... | 43.98     | 22   |
| 3.3.5 Collaboration within organisations .....   | 56.63     | 27   |
| 3.3.6 Collaboration across organisations .....   | 44.33     | 34   |

|                                       |           |    |
|---------------------------------------|-----------|----|
| <b>4 RETAIN.....77.60</b>             | <b>17</b> |    |
| 4.1 Sustainability .....              | 73.56     | 20 |
| 4.1.1 Pension system .....            | 86.73     | 23 |
| 4.1.2 Social protection .....         | 96.08     | 6  |
| 4.1.3 Brain retention .....           | 37.86     | 71 |
| 4.2 Lifestyle .....                   | 81.63     | 15 |
| 4.2.1 Environmental performance ..... | 94.22     | 2  |
| 4.2.2 Personal safety .....           | 81.77     | 33 |
| 4.2.3 Physician density .....         | 51.63     | 29 |
| 4.2.4 Sanitation .....                | 98.92     | 21 |

|                                                          |           |    |
|----------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....63.19</b>       | <b>18</b> |    |
| 5.1 Mid-Level Skills .....                               | 64.42     | 11 |
| 5.1.1 Workforce with secondary education .....           | 58.89     | 35 |
| 5.1.2 Population with secondary education .....          | 55.21     | 27 |
| 5.1.3 Technicians and associate professionals .....      | 87.95     | 5  |
| 5.1.4 Labour productivity per employee .....             | 55.63     | 13 |
| 5.2 Employability.....                                   | 61.96     | 27 |
| 5.2.1 Ease of finding skilled employees .....            | 74.97     | 19 |
| 5.2.2 Relevance of education system to the economy ..... | 52.33     | 38 |
| 5.2.3 Skills matching with secondary education .....     | 55.82     | 35 |
| 5.2.4 Skills matching with tertiary education .....      | 64.75     | 29 |

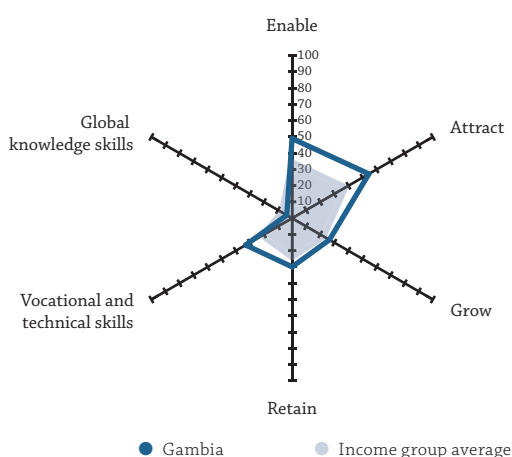
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|------------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....50.43</b>          | <b>19</b> |    |
| 6.1 High-Level Skills .....                          | 51.76     | 23 |
| 6.1.1 Workforce with tertiary education .....        | 58.48     | 20 |
| 6.1.2 Population with tertiary education .....       | 49.75     | 23 |
| 6.1.3 Professionals .....                            | 48.88     | 27 |
| 6.1.4 Researchers .....                              | 52.16     | 21 |
| 6.1.5 Senior officials and managers .....            | 41.67     | 27 |
| 6.1.6 Availability of scientists and engineers ..... | 59.64     | 29 |
| 6.2 Talent Impact.....                               | 49.11     | 16 |
| 6.2.1 Innovation output .....                        | 63.31     | 16 |
| 6.2.2 High-value exports .....                       | 48.40     | 9  |
| 6.2.3 New product entrepreneurial activity .....     | 83.57     | 3  |
| 6.2.4 New business density .....                     | 8.82      | 50 |
| 6.2.5 Scientific journal articles .....              | 41.43     | 27 |

# GAMBIA

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>93</b>                 |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>2.10</b>               |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....49.02</b>                      | <b>63</b> |      |
| 1.1 Regulatory Landscape.....                  | 41.04     | 90   |
| 1.1.1 Government effectiveness.....            | 24.32     | 113  |
| 1.1.2 Business-government relations.....       | 73.51     | 23   |
| 1.1.3 Political stability.....                 | 52.55     | 87   |
| 1.1.4 Regulatory quality.....                  | 35.65     | 100  |
| 1.1.5 Corruption.....                          | 19.18     | 99   |
| 1.2 Market Landscape.....                      | 40.81     | 84   |
| 1.2.1 Competition intensity.....               | 78.43     | 27   |
| 1.2.2 Ease of doing business.....              | 37.81     | 113  |
| 1.2.3 Cluster development.....                 | 45.71     | 47   |
| 1.2.4 R&D expenditure.....                     | 2.79      | 93   |
| 1.2.5 ICT infrastructure.....                  | 26.59     | 100  |
| 1.2.6 Technology utilisation.....              | 53.54     | 54   |
| 1.3 Business and Labour Landscape.....         | 65.21     | 33   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 75.00     | 45   |
| 1.3.3 Active labour market policies.....       | 42.18     | 62   |
| 1.3.4 Labour-employer cooperation.....         | 43.07     | 56   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 63.84     | 29   |
| 1.3.6 Relationship of pay to productivity..... | 67.14     | 27   |
| <b>2 ATTRACT.....54.55</b>                     | <b>32</b> |      |
| 2.1 External Openness.....                     | 54.59     | 28   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 59.35     | 54   |
| 2.1.2 Prevalence of foreign ownership.....     | 80.21     | 22   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 20.05     | 41   |
| 2.1.4 International students.....              | n/a       | n/a  |
| 2.1.5 Brain gain.....                          | 58.76     | 29   |
| 2.2 Internal Openness.....                     | 54.52     | 45   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 75.29     | 11   |
| 2.2.2 Tolerance of immigrants.....             | n/a       | n/a  |
| 2.2.3 Social mobility.....                     | 48.07     | 68   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 48.49     | 89   |
| 2.2.5 Gender earnings gap.....                 | 30.35     | 107  |
| 2.2.6 Leadership opportunities for women.....  | 70.38     | 21   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>1,714.59</b> |
| GDP (US\$ billions).....               | <b>1.01</b>     |
| GTCI score.....                        | <b>32.80</b>    |
| GTCI score (income group average)..... | <b>24.81</b>    |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....26.54</b>                         | <b>97</b> |      |
| 3.1 Formal Education.....                       | 6.94      | 115  |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 20.01     | 67   |
| 3.1.2 Tertiary enrolment.....                   | 1.92      | 117  |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 5.85      | 105  |
| 3.1.4 Reading, maths, and science.....          | n/a       | n/a  |
| 3.1.5 University ranking.....                   | 0.00      | 78   |
| 3.2 Lifelong Learning.....                      | 35.96     | 74   |
| 3.2.1 Quality of management schools.....        | 44.32     | 56   |
| 3.2.2 Prevalence of training in firms.....      | 29.29     | 59   |
| 3.2.3 Employee development.....                 | 34.28     | 70   |
| 3.3 Access to Growth Opportunities.....         | 36.71     | 81   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 74.44     | 22   |
| 3.3.2 Personal rights.....                      | 11.55     | 117  |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 73.67     | 57   |
| 3.3.4 Use of virtual professional networks..... | 4.35      | 93   |
| 3.3.5 Collaboration within organisations.....   | 35.32     | 65   |
| 3.3.6 Collaboration across organisations.....   | 20.92     | 92   |

|                                      |            |     |
|--------------------------------------|------------|-----|
| <b>4 RETAIN.....29.90</b>            | <b>101</b> |     |
| 4.1 Sustainability.....              | 34.16      | 75  |
| 4.1.1 Pension system.....            | 1.02       | 107 |
| 4.1.2 Social protection.....         | 47.39      | 47  |
| 4.1.3 Brain retention.....           | 54.05      | 38  |
| 4.2 Lifestyle.....                   | 25.64      | 111 |
| 4.2.1 Environmental performance..... | 24.99      | 113 |
| 4.2.2 Personal safety.....           | 38.53      | 104 |
| 4.2.3 Physician density.....         | 1.43       | 109 |
| 4.2.4 Sanitation.....                | 37.63      | 110 |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....32.99</b>      | <b>82</b> |     |
| 5.1 Mid-Level Skills.....                               | 10.06     | 111 |
| 5.1.1 Workforce with secondary education.....           | 14.31     | 101 |
| 5.1.2 Population with secondary education.....          | n/a       | n/a |
| 5.1.3 Technicians and associate professionals.....      | 5.80      | 111 |
| 5.1.4 Labour productivity per employee.....             | n/a       | n/a |
| 5.2 Employability.....                                  | 55.92     | 36  |
| 5.2.1 Ease of finding skilled employees.....            | 59.00     | 45  |
| 5.2.2 Relevance of education system to the economy..... | 54.25     | 35  |
| 5.2.3 Skills matching with secondary education.....     | 49.14     | 44  |
| 5.2.4 Skills matching with tertiary education.....      | 61.28     | 34  |

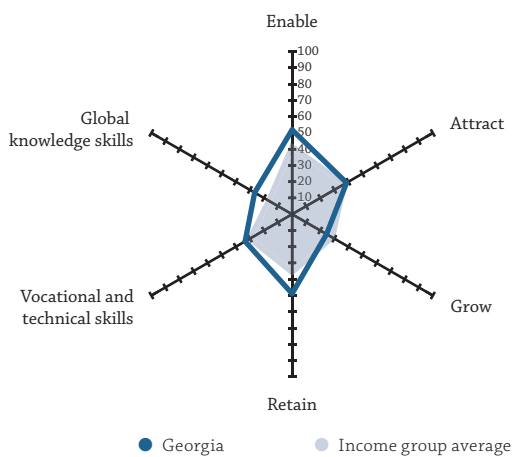
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|-----------------------------------------------------|------------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....3.79</b>           | <b>122</b> |     |
| 6.1 High-Level Skills.....                          | 6.02       | 122 |
| 6.1.1 Workforce with tertiary education.....        | 0.00       | 116 |
| 6.1.2 Population with tertiary education.....       | n/a        | n/a |
| 6.1.3 Professionals.....                            | 8.99       | 105 |
| 6.1.4 Researchers.....                              | 0.32       | 93  |
| 6.1.5 Senior officials and managers.....            | 1.79       | 118 |
| 6.1.6 Availability of scientists and engineers..... | 18.98      | 110 |
| 6.2 Talent Impact.....                              | 1.56       | 121 |
| 6.2.1 Innovation output.....                        | n/a        | n/a |
| 6.2.2 High-value exports.....                       | 2.26       | 105 |
| 6.2.3 New product entrepreneurial activity.....     | n/a        | n/a |
| 6.2.4 New business density.....                     | n/a        | n/a |
| 6.2.5 Scientific journal articles.....              | 0.85       | 95  |

# GEORGIA

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>76</b>                               |
| Income group.....          | <b>Lower-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>3.72</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....51.92</b>                      | <b>52</b> |      |
| 1.1 Regulatory Landscape.....                  | 60.33     | 45   |
| 1.1.1 Government effectiveness.....            | 57.82     | 42   |
| 1.1.2 Business-government relations.....       | 59.16     | 64   |
| 1.1.3 Political stability.....                 | 57.87     | 78   |
| 1.1.4 Regulatory quality.....                  | 72.01     | 30   |
| 1.1.5 Corruption.....                          | 54.79     | 39   |
| 1.2 Market Landscape.....                      | 43.87     | 74   |
| 1.2.1 Competition intensity.....               | 57.78     | 88   |
| 1.2.2 Ease of doing business.....              | 91.90     | 8    |
| 1.2.3 Cluster development.....                 | 12.57     | 117  |
| 1.2.4 R&D expenditure.....                     | 6.75      | 77   |
| 1.2.5 ICT infrastructure.....                  | 58.27     | 65   |
| 1.2.6 Technology utilisation.....              | 35.94     | 102  |
| 1.3 Business and Labour Landscape.....         | 51.55     | 64   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 66.67     | 58   |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 26.26     | 96   |
| 1.3.4 Labour-employer cooperation.....         | 34.52     | 80   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 46.02     | 66   |
| 1.3.6 Relationship of pay to productivity..... | 35.84     | 90   |
| <b>2 ATTRACT.....38.71</b>                     | <b>92</b> |      |
| 2.1 External Openness.....                     | 32.95     | 81   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 47.35     | 88   |
| 2.1.2 Prevalence of foreign ownership.....     | 58.40     | 63   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 3.99      | 84   |
| 2.1.4 International students.....              | 24.75     | 37   |
| 2.1.5 Brain gain.....                          | 30.26     | 92   |
| 2.2 Internal Openness.....                     | 44.46     | 87   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 20.00     | 100  |
| 2.2.2 Tolerance of immigrants.....             | 35.14     | 94   |
| 2.2.3 Social mobility.....                     | 47.88     | 69   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 81.47     | 31   |
| 2.2.5 Gender earnings gap.....                 | 37.99     | 99   |
| 2.2.6 Leadership opportunities for women.....  | 44.31     | 57   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>10,698.68</b> |
| GDP (US\$ billions).....               | <b>15.16</b>     |
| GTCI score.....                        | <b>37.32</b>     |
| GTCI score (income group average)..... | <b>31.64</b>     |

|                                                 | Score      | Rank |
|-------------------------------------------------|------------|------|
| <b>3 GROW.....24.50</b>                         | <b>107</b> |      |
| 3.1 Formal Education.....                       | 18.28      | 86   |
| Enrolment                                       |            |      |
| 3.1.1 Vocational enrolment.....                 | 9.13       | 90   |
| 3.1.2 Tertiary enrolment.....                   | 42.21      | 49   |
| Quality                                         |            |      |
| 3.1.3 Tertiary education expenditure.....       | 8.81       | 94   |
| 3.1.4 Reading, maths, and science.....          | 31.23      | 59   |
| 3.1.5 University ranking.....                   | 0.00       | 78   |
| 3.2 Lifelong Learning.....                      | 16.83      | 122  |
| 3.2.1 Quality of management schools.....        | 23.81      | 107  |
| 3.2.2 Prevalence of training in firms.....      | 9.37       | 86   |
| 3.2.3 Employee development.....                 | 17.33      | 117  |
| 3.3 Access to Growth Opportunities.....         | 38.39      | 71   |
| Empowerment                                     |            |      |
| 3.3.1 Delegation of authority.....              | 33.64      | 95   |
| 3.3.2 Personal rights.....                      | 60.04      | 59   |
| Collaboration                                   |            |      |
| 3.3.3 Use of virtual social networks.....       | 74.99      | 54   |
| 3.3.4 Use of virtual professional networks..... | 8.69       | 75   |
| 3.3.5 Collaboration within organisations.....   | 36.05      | 62   |
| 3.3.6 Collaboration across organisations.....   | 16.94      | 100  |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....48.85</b>            | <b>61</b> |     |
| 4.1 Sustainability.....              | 25.38     | 105 |
| 4.1.1 Pension system.....            | 27.55     | 66  |
| 4.1.2 Social protection.....         | 16.51     | 112 |
| 4.1.3 Brain retention.....           | 32.09     | 93  |
| 4.2 Lifestyle.....                   | 72.31     | 36  |
| 4.2.1 Environmental performance..... | 47.11     | 77  |
| 4.2.2 Personal safety.....           | 81.98     | 32  |
| 4.2.3 Physician density.....         | 76.29     | 3   |
| 4.2.4 Sanitation.....                | 83.87     | 79  |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....33.38</b>      | <b>80</b> |     |
| 5.1 Mid-Level Skills.....                               | 46.00     | 50  |
| 5.1.1 Workforce with secondary education.....           | 83.09     | 10  |
| 5.1.2 Population with secondary education.....          | 64.19     | 21  |
| 5.1.3 Technicians and associate professionals.....      | 25.45     | 78  |
| 5.1.4 Labour productivity per employee.....             | 11.27     | 79  |
| 5.2 Employability.....                                  | 20.75     | 117 |
| 5.2.1 Ease of finding skilled employees.....            | 23.07     | 117 |
| 5.2.2 Relevance of education system to the economy..... | 19.94     | 100 |
| 5.2.3 Skills matching with secondary education.....     | 19.28     | 115 |
| 5.2.4 Skills matching with tertiary education.....      | 20.72     | 114 |

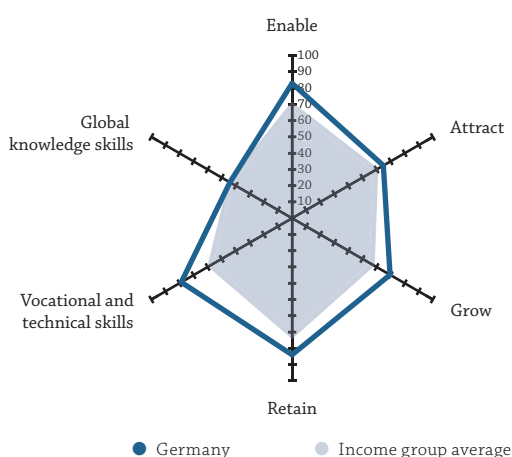
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|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....26.59</b>          | <b>56</b> |     |
| 6.1 High-Level Skills.....                          | 30.80     | 56  |
| 6.1.1 Workforce with tertiary education.....        | 49.71     | 32  |
| 6.1.2 Population with tertiary education.....       | 52.29     | 19  |
| 6.1.3 Professionals.....                            | 34.27     | 49  |
| 6.1.4 Researchers.....                              | 16.13     | 43  |
| 6.1.5 Senior officials and managers.....            | 20.24     | 64  |
| 6.1.6 Availability of scientists and engineers..... | 12.15     | 119 |
| 6.2 Talent Impact.....                              | 22.39     | 57  |
| 6.2.1 Innovation output.....                        | 29.97     | 61  |
| 6.2.2 High-value exports.....                       | 7.07      | 79  |
| 6.2.3 New product entrepreneurial activity.....     | 28.42     | 57  |
| 6.2.4 New business density.....                     | 40.29     | 16  |
| 6.2.5 Scientific journal articles.....              | 6.21      | 63  |

# GERMANY

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>14</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>82.70</b>       |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 82.96 8</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 84.54 | 11   |
| 1.1.1 Government effectiveness.....            | 88.34 | 11   |
| 1.1.2 Business-government relations.....       | 71.74 | 26   |
| 1.1.3 Political stability.....                 | 82.18 | 29   |
| 1.1.4 Regulatory quality.....                  | 91.39 | 7    |
| 1.1.5 Corruption.....                          | 89.04 | 12   |
| 1.2 Market Landscape.....                      | 86.24 | 3    |
| 1.2.1 Competition intensity.....               | 90.29 | 8    |
| 1.2.2 Ease of doing business.....              | 86.44 | 17   |
| 1.2.3 Cluster development.....                 | 91.40 | 3    |
| 1.2.4 R&D expenditure.....                     | 69.04 | 7    |
| 1.2.5 ICT infrastructure.....                  | 92.24 | 5    |
| 1.2.6 Technology utilisation.....              | 88.03 | 12   |
| 1.3 Business and Labour Landscape.....         | 78.11 | 16   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 89.00 | 27   |
| 1.3.2 Ease of redundancy.....                  | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 89.06 | 5    |
| 1.3.4 Labour-employer cooperation.....         | 70.36 | 19   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 81.28 | 17   |
| 1.3.6 Relationship of pay to productivity..... | 88.94 | 6    |
| <b>2 ATTRACT..... 64.85 20</b>                 |       |      |
| 2.1 External Openness.....                     | 60.57 | 17   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 83.13 | 10   |
| 2.1.2 Prevalence of foreign ownership.....     | 74.36 | 32   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 30.50 | 24   |
| 2.1.4 International students.....              | 38.64 | 27   |
| 2.1.5 Brain gain.....                          | 76.22 | 12   |
| 2.2 Internal Openness.....                     | 69.13 | 18   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 58.82 | 37   |
| 2.2.2 Tolerance of immigrants.....             | 82.43 | 20   |
| 2.2.3 Social mobility.....                     | 79.38 | 18   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap.....                 | 62.01 | 30   |
| 2.2.6 Leadership opportunities for women.....  | 62.99 | 25   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>50,715.55</b> |
| GDP (US\$ billions).....               | <b>3,677.44</b>  |
| GTCI score.....                        | <b>70.72</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 69.61 13</b>                     |       |      |
| 3.1 Formal Education.....                       | 54.56 | 15   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 38.73 | 39   |
| 3.1.2 Tertiary enrolment.....                   | 54.10 | 28   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 30.64 | 30   |
| 3.1.4 Reading, maths, and science.....          | 79.51 | 10   |
| 3.1.5 University ranking.....                   | 69.81 | 10   |
| 3.2 Lifelong Learning.....                      | 79.42 | 11   |
| 3.2.1 Quality of management schools.....        | 71.30 | 22   |
| 3.2.2 Prevalence of training in firms.....      | n/a   | n/a  |
| 3.2.3 Employee development.....                 | 87.54 | 6    |
| 3.3 Access to Growth Opportunities.....         | 74.87 | 16   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 81.30 | 13   |
| 3.3.2 Personal rights.....                      | 93.78 | 11   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 73.75 | 56   |
| 3.3.4 Use of virtual professional networks..... | 13.23 | 66   |
| 3.3.5 Collaboration within organisations.....   | 92.80 | 5    |
| 3.3.6 Collaboration across organisations.....   | 94.33 | 2    |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 84.01 10</b>        |       |    |
| 4.1 Sustainability.....              | 82.07 | 13 |
| 4.1.1 Pension system.....            | 86.73 | 23 |
| 4.1.2 Social protection.....         | 80.09 | 16 |
| 4.1.3 Brain retention.....           | 79.39 | 12 |
| 4.2 Lifestyle.....                   | 85.95 | 8  |
| 4.2.1 Environmental performance..... | 84.91 | 13 |
| 4.2.2 Personal safety.....           | 93.03 | 18 |
| 4.2.3 Physician density.....         | 66.91 | 8  |
| 4.2.4 Sanitation.....                | 98.92 | 21 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 78.72 3</b>   |       |    |
| 5.1 Mid-Level Skills.....                               | 74.33 | 3  |
| 5.1.1 Workforce with secondary education.....           | 78.09 | 14 |
| 5.1.2 Population with secondary education.....          | 69.19 | 15 |
| 5.1.3 Technicians and associate professionals.....      | 98.66 | 2  |
| 5.1.4 Labour productivity per employee.....             | 51.38 | 19 |
| 5.2 Employability.....                                  | 83.12 | 8  |
| 5.2.1 Ease of finding skilled employees.....            | 88.26 | 8  |
| 5.2.2 Relevance of education system to the economy..... | 79.33 | 9  |
| 5.2.3 Skills matching with secondary education.....     | 82.69 | 5  |
| 5.2.4 Skills matching with tertiary education.....      | 82.20 | 12 |

|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 44.18 23</b>      |       |    |
| 6.1 High-Level Skills.....                          | 48.75 | 26 |
| 6.1.1 Workforce with tertiary education.....        | 43.04 | 40 |
| 6.1.2 Population with tertiary education.....       | 41.26 | 33 |
| 6.1.3 Professionals.....                            | 48.31 | 30 |
| 6.1.4 Researchers.....                              | 59.27 | 13 |
| 6.1.5 Senior officials and managers.....            | 26.19 | 50 |
| 6.1.6 Availability of scientists and engineers..... | 74.42 | 11 |
| 6.2 Talent Impact.....                              | 39.62 | 29 |
| 6.2.1 Innovation output.....                        | 75.79 | 5  |
| 6.2.2 High-value exports.....                       | 30.68 | 24 |
| 6.2.3 New product entrepreneurial activity.....     | 35.45 | 48 |
| 6.2.4 New business density.....                     | 6.22  | 62 |
| 6.2.5 Scientific journal articles.....              | 49.95 | 22 |

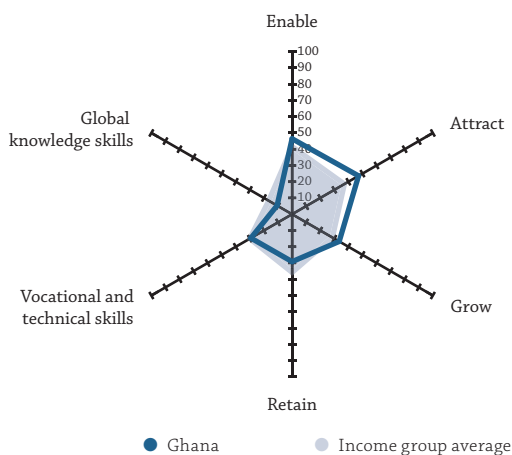


# GHANA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>94</b>                  |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>28.83</b>               |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>46.46</b> | <b>77</b> |
| 1.1 Regulatory Landscape.....                  | 43.65        | 82        |
| 1.1.1 Government effectiveness.....            | 40.20        | 81        |
| 1.1.2 Business-government relations.....       | 41.94        | 99        |
| 1.1.3 Political stability.....                 | 60.88        | 72        |
| 1.1.4 Regulatory quality.....                  | 42.34        | 82        |
| 1.1.5 Corruption.....                          | 32.88        | 64        |
| 1.2 Market Landscape.....                      | 40.86        | 83        |
| 1.2.1 Competition intensity.....               | 63.15        | 75        |
| 1.2.2 Ease of doing business.....              | 47.36        | 98        |
| 1.2.3 Cluster development.....                 | 51.33        | 38        |
| 1.2.4 R&D expenditure.....                     | 8.54         | 67        |
| 1.2.5 ICT infrastructure.....                  | 34.10        | 94        |
| 1.2.6 Technology utilisation.....              | 40.67        | 91        |
| 1.3 Business and Labour Landscape.....         | 54.88        | 53        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 100.00       | 1         |
| 1.3.2 Ease of redundancy.....                  | 37.50        | 104       |
| 1.3.3 Active labour market policies.....       | 37.91        | 72        |
| 1.3.4 Labour-employer cooperation.....         | 43.33        | 55        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 64.98        | 28        |
| 1.3.6 Relationship of pay to productivity..... | 45.54        | 67        |
| <b>2 ATTRACT.....</b>                          | <b>47.22</b> | <b>46</b> |
| 2.1 External Openness.....                     | 41.07        | 54        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 53.39        | 72        |
| 2.1.2 Prevalence of foreign ownership.....     | 75.02        | 29        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 2.85         | 92        |
| 2.1.4 International students.....              | 18.99        | 51        |
| 2.1.5 Brain gain.....                          | 55.08        | 34        |
| 2.2 Internal Openness.....                     | 53.38        | 49        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 61.18        | 31        |
| 2.2.2 Tolerance of immigrants.....             | 64.86        | 49        |
| 2.2.3 Social mobility.....                     | 50.73        | 60        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 33.56        | 96        |
| 2.2.5 Gender earnings gap.....                 | 67.74        | 18        |
| 2.2.6 Leadership opportunities for women.....  | 42.19        | 60        |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>4,641.32</b> |
| GDP (US\$ billions).....               | <b>47.33</b>    |
| GTCI score.....                        | <b>32.72</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>33.48</b> | <b>74</b> |
| 3.1 Formal Education.....                       | 10.87        | 107       |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 4.76         | 98        |
| 3.1.2 Tertiary enrolment.....                   | 12.63        | 93        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 26.09        | 45        |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 46.51        | 51        |
| 3.2.1 Quality of management schools.....        | 49.42        | 44        |
| 3.2.2 Prevalence of training in firms.....      | 48.42        | 33        |
| 3.2.3 Employee development.....                 | 41.71        | 61        |
| 3.3 Access to Growth Opportunities.....         | 43.04        | 55        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 46.03        | 64        |
| 3.3.2 Personal rights.....                      | 78.48        | 31        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 59.12        | 92        |
| 3.3.4 Use of virtual professional networks..... | 6.64         | 87        |
| 3.3.5 Collaboration within organisations.....   | 31.46        | 73        |
| 3.3.6 Collaboration across organisations.....   | 36.51        | 50        |

|                                      |              |            |
|--------------------------------------|--------------|------------|
| <b>4 RETAIN.....</b>                 | <b>29.17</b> | <b>103</b> |
| 4.1 Sustainability.....              | 31.77        | 84         |
| 4.1.1 Pension system.....            | 6.12         | 93         |
| 4.1.2 Social protection.....         | 36.52        | 70         |
| 4.1.3 Brain retention.....           | 52.67        | 41         |
| 4.2 Lifestyle.....                   | 26.57        | 109        |
| 4.2.1 Environmental performance..... | 37.06        | 96         |
| 4.2.2 Personal safety.....           | 60.44        | 68         |
| 4.2.3 Physician density.....         | 1.25         | 110        |
| 4.2.4 Sanitation.....                | 7.53         | 123        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>29.30</b> | <b>94</b> |
| 5.1 Mid-Level Skills.....                               | 11.42        | 109       |
| 5.1.1 Workforce with secondary education.....           | 19.62        | 96        |
| 5.1.2 Population with secondary education.....          | 12.98        | 92        |
| 5.1.3 Technicians and associate professionals.....      | 8.93         | 102       |
| 5.1.4 Labour productivity per employee.....             | 4.15         | 91        |
| 5.2 Employability.....                                  | 47.18        | 54        |
| 5.2.1 Ease of finding skilled employees.....            | 60.76        | 41        |
| 5.2.2 Relevance of education system to the economy..... | 46.66        | 45        |
| 5.2.3 Skills matching with secondary education.....     | 30.80        | 96        |
| 5.2.4 Skills matching with tertiary education.....      | 50.51        | 55        |

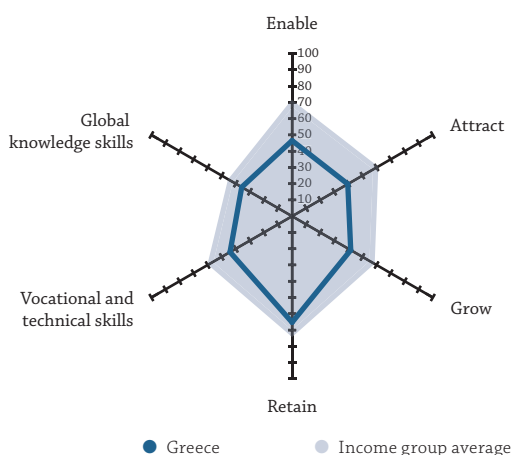
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|-----------------------------------------------------|--------------|------------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>10.67</b> | <b>102</b> |
| 6.1 High-Level Skills.....                          | 13.12        | 102        |
| 6.1.1 Workforce with tertiary education.....        | 12.44        | 95         |
| 6.1.2 Population with tertiary education.....       | 3.40         | 97         |
| 6.1.3 Professionals.....                            | 21.07        | 75         |
| 6.1.4 Researchers.....                              | 0.38         | 92         |
| 6.1.5 Senior officials and managers.....            | 7.14         | 96         |
| 6.1.6 Availability of scientists and engineers..... | 34.32        | 79         |
| 6.2 Talent Impact.....                              | 8.22         | 103        |
| 6.2.1 Innovation output.....                        | 14.74        | 99         |
| 6.2.2 High-value exports.....                       | 2.73         | 104        |
| 6.2.3 New product entrepreneurial activity.....     | 18.04        | 69         |
| 6.2.4 New business density.....                     | 4.29         | 71         |
| 6.2.5 Scientific journal articles.....              | 1.33         | 88         |

# GREECE

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>44</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>10.76</b>       |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>46.52</b> | <b>76</b> |
| 1.1 Regulatory Landscape.....                  | 48.59        | 64        |
| 1.1.1 Government effectiveness.....            | 50.37        | 55        |
| 1.1.2 Business-government relations.....       | 35.98        | 108       |
| 1.1.3 Political stability.....                 | 61.34        | 70        |
| 1.1.4 Regulatory quality.....                  | 51.44        | 61        |
| 1.1.5 Corruption.....                          | 43.84        | 49        |
| 1.2 Market Landscape.....                      | 49.01        | 61        |
| 1.2.1 Competition intensity.....               | 66.27        | 67        |
| 1.2.2 Ease of doing business.....              | 66.72        | 61        |
| 1.2.3 Cluster development.....                 | 14.10        | 113       |
| 1.2.4 R&D expenditure.....                     | 23.42        | 34        |
| 1.2.5 ICT infrastructure.....                  | 77.35        | 32        |
| 1.2.6 Technology utilisation.....              | 46.21        | 69        |
| 1.3 Business and Labour Landscape.....         | 41.94        | 92        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 55.67        | 76        |
| 1.3.2 Ease of redundancy.....                  | 62.50        | 64        |
| 1.3.3 Active labour market policies.....       | 27.07        | 93        |
| 1.3.4 Labour-employer cooperation.....         | 30.90        | 89        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 40.41        | 77        |
| 1.3.6 Relationship of pay to productivity..... | 35.11        | 93        |
| <b>2 ATTRACT.....</b>                          | <b>39.58</b> | <b>86</b> |
| 2.1 External Openness.....                     | 29.49        | 95        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 39.22        | 105       |
| 2.1.2 Prevalence of foreign ownership.....     | 51.03        | 87        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 22.47        | 38        |
| 2.1.4 International students.....              | 20.99        | 45        |
| 2.1.5 Brain gain.....                          | 13.74        | 121       |
| 2.2 Internal Openness.....                     | 49.68        | 62        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 55.29        | 42        |
| 2.2.2 Tolerance of immigrants.....             | 35.14        | 94        |
| 2.2.3 Social mobility.....                     | 39.04        | 94        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 74.78        | 53        |
| 2.2.5 Gender earnings gap.....                 | 59.02        | 41        |
| 2.2.6 Leadership opportunities for women.....  | 34.80        | 77        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>27,809.40</b> |
| GDP (US\$ billions).....               | <b>200.29</b>    |
| GTCI score.....                        | <b>45.49</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>41.66</b> | <b>47</b> |
| 3.1 Formal Education.....                       | 52.07        | 21        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 33.60        | 47        |
| 3.1.2 Tertiary enrolment.....                   | 96.34        | 2         |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | n/a          | n/a       |
| 3.1.4 Reading, maths, and science.....          | 56.20        | 39        |
| 3.1.5 University ranking.....                   | 22.15        | 49        |
| 3.2 Lifelong Learning.....                      | 34.88        | 77        |
| 3.2.1 Quality of management schools.....        | 37.87        | 73        |
| 3.2.2 Prevalence of training in firms.....      | n/a          | n/a       |
| 3.2.3 Employee development.....                 | 31.90        | 77        |
| 3.3 Access to Growth Opportunities.....         | 38.03        | 73        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 35.73        | 86        |
| 3.3.2 Personal rights.....                      | 69.45        | 43        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 55.66        | 100       |
| 3.3.4 Use of virtual professional networks..... | 25.53        | 41        |
| 3.3.5 Collaboration within organisations.....   | 25.32        | 93        |
| 3.3.6 Collaboration across organisations.....   | 16.51        | 102       |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>65.29</b> | <b>31</b> |
| 4.1 Sustainability.....              | 43.12        | 60        |
| 4.1.1 Pension system.....            | 85.71        | 27        |
| 4.1.2 Social protection.....         | 24.02        | 97        |
| 4.1.3 Brain retention.....           | 19.64        | 111       |
| 4.2 Lifestyle.....                   | 87.47        | 5         |
| 4.2.1 Environmental performance..... | 76.96        | 22        |
| 4.2.2 Personal safety.....           | 73.98        | 43        |
| 4.2.3 Physician density.....         | 100.00       | 1         |
| 4.2.4 Sanitation.....                | 98.92        | 21        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>44.09</b> | <b>49</b> |
| 5.1 Mid-Level Skills.....                               | 42.35        | 58        |
| 5.1.1 Workforce with secondary education.....           | 56.98        | 38        |
| 5.1.2 Population with secondary education.....          | 38.94        | 52        |
| 5.1.3 Technicians and associate professionals.....      | 34.38        | 61        |
| 5.1.4 Labour productivity per employee.....             | 39.10        | 36        |
| 5.2 Employability.....                                  | 45.82        | 56        |
| 5.2.1 Ease of finding skilled employees.....            | 60.49        | 42        |
| 5.2.2 Relevance of education system to the economy..... | 20.50        | 99        |
| 5.2.3 Skills matching with secondary education.....     | 49.87        | 42        |
| 5.2.4 Skills matching with tertiary education.....      | 52.45        | 48        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>35.78</b> | <b>36</b> |
| 6.1 High-Level Skills.....                          | 43.52        | 34        |
| 6.1.1 Workforce with tertiary education.....        | 49.76        | 30        |
| 6.1.2 Population with tertiary education.....       | 38.54        | 37        |
| 6.1.3 Professionals.....                            | 52.81        | 21        |
| 6.1.4 Researchers.....                              | 31.81        | 31        |
| 6.1.5 Senior officials and managers.....            | 13.69        | 74        |
| 6.1.6 Availability of scientists and engineers..... | 74.53        | 10        |
| 6.2 Talent Impact.....                              | 28.04        | 43        |
| 6.2.1 Innovation output.....                        | 35.20        | 51        |
| 6.2.2 High-value exports.....                       | 20.76        | 42        |
| 6.2.3 New product entrepreneurial activity.....     | 40.63        | 38        |
| 6.2.4 New business density.....                     | 3.66         | 74        |
| 6.2.5 Scientific journal articles.....              | 39.92        | 28        |

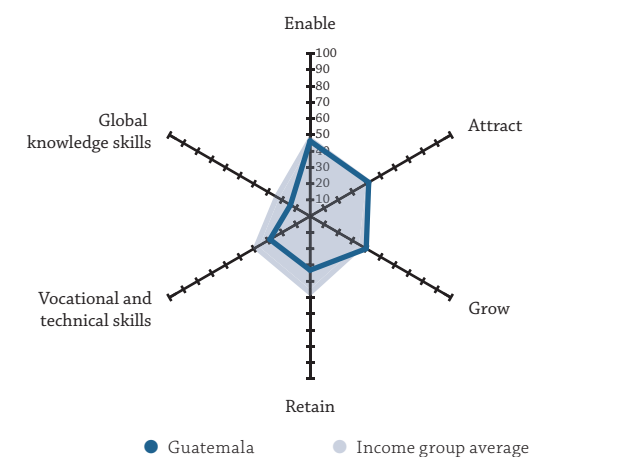


# GUATEMALA

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>88</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>16.91</b>                           |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>46.32</b> | <b>78</b> |
| 1.1 Regulatory Landscape.....                  | 40.82        | 91        |
| 1.1.1 Government effectiveness.....            | 30.27        | 98        |
| 1.1.2 Business-government relations.....       | 62.25        | 46        |
| 1.1.3 Political stability.....                 | 52.08        | 90        |
| 1.1.4 Regulatory quality.....                  | 43.06        | 79        |
| 1.1.5 Corruption.....                          | 16.44        | 109       |
| 1.2 Market Landscape.....                      | 45.15        | 70        |
| 1.2.1 Competition intensity.....               | 77.31        | 34        |
| 1.2.2 Ease of doing business.....              | 54.44        | 83        |
| 1.2.3 Cluster development.....                 | 37.11        | 69        |
| 1.2.4 R&D expenditure.....                     | 0.35         | 108       |
| 1.2.5 ICT infrastructure.....                  | 36.13        | 91        |
| 1.2.6 Technology utilisation.....              | 65.57        | 39        |
| 1.3 Business and Labour Landscape.....         | 52.98        | 61        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 33.33        | 107       |
| 1.3.2 Ease of redundancy.....                  | 100.00       | 1         |
| 1.3.3 Active labour market policies.....       | 21.71        | 101       |
| 1.3.4 Labour-employer cooperation.....         | 62.42        | 28        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 48.13        | 63        |
| 1.3.6 Relationship of pay to productivity..... | 52.27        | 57        |
| <b>2 ATTRACT.....</b>                          | <b>41.62</b> | <b>73</b> |
| 2.1 External Openness.....                     | 38.95        | 64        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 58.28        | 60        |
| 2.1.2 Prevalence of foreign ownership.....     | 58.68        | 59        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 0.85         | 111       |
| 2.1.4 International students.....              | n/a          | n/a       |
| 2.1.5 Brain gain.....                          | 37.98        | 77        |
| 2.2 Internal Openness.....                     | 44.29        | 89        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 18.82        | 104       |
| 2.2.2 Tolerance of immigrants.....             | 37.84        | 91        |
| 2.2.3 Social mobility.....                     | 54.56        | 47        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 86.46        | 19        |
| 2.2.5 Gender earnings gap.....                 | 41.22        | 90        |
| 2.2.6 Leadership opportunities for women.....  | 26.86        | 93        |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>8,150.26</b> |
| GDP (US\$ billions).....               | <b>75.62</b>    |
| GTCI score.....                        | <b>33.91</b>    |
| GTCI score (income group average)..... | <b>39.16</b>    |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>39.90</b> | <b>53</b> |
| 3.1 Formal Education.....                       | 19.19        | 83        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 51.12        | 25        |
| 3.1.2 Tertiary enrolment.....                   | 16.94        | 85        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 8.68         | 96        |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 56.94        | 31        |
| 3.2.1 Quality of management schools.....        | 49.58        | 43        |
| 3.2.2 Prevalence of training in firms.....      | 69.00        | 12        |
| 3.2.3 Employee development.....                 | 52.25        | 37        |
| 3.3 Access to Growth Opportunities.....         | 43.58        | 51        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 48.29        | 58        |
| 3.3.2 Personal rights.....                      | 47.57        | 76        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 78.91        | 42        |
| 3.3.4 Use of virtual professional networks..... | 9.34         | 74        |
| 3.3.5 Collaboration within organisations.....   | 42.85        | 42        |
| 3.3.6 Collaboration across organisations.....   | 34.51        | 57        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>33.17</b> | <b>98</b> |
| 4.1 Sustainability.....              | 31.06        | 86        |
| 4.1.1 Pension system.....            | 18.37        | 78        |
| 4.1.2 Social protection.....         | 22.43        | 101       |
| 4.1.3 Brain retention.....           | 52.37        | 43        |
| 4.2 Lifestyle.....                   | 35.29        | 98        |
| 4.2.1 Environmental performance..... | 41.51        | 87        |
| 4.2.2 Personal safety.....           | 21.06        | 117       |
| 4.2.3 Physician density.....         | 14.09        | 88        |
| 4.2.4 Sanitation.....                | 64.52        | 95        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>28.53</b> | <b>95</b> |
| 5.1 Mid-Level Skills.....                               | 15.84        | 102       |
| 5.1.1 Workforce with secondary education.....           | 17.87        | 99        |
| 5.1.2 Population with secondary education.....          | 23.11        | 79        |
| 5.1.3 Technicians and associate professionals.....      | 12.05        | 99        |
| 5.1.4 Labour productivity per employee.....             | 10.32        | 81        |
| 5.2 Employability.....                                  | 41.23        | 69        |
| 5.2.1 Ease of finding skilled employees.....            | 57.51        | 48        |
| 5.2.2 Relevance of education system to the economy..... | 9.51         | 115       |
| 5.2.3 Skills matching with secondary education.....     | 42.84        | 60        |
| 5.2.4 Skills matching with tertiary education.....      | 55.05        | 42        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>13.93</b> | <b>96</b> |
| 6.1 High-Level Skills.....                          | 12.49        | 105       |
| 6.1.1 Workforce with tertiary education.....        | 5.38         | 108       |
| 6.1.2 Population with tertiary education.....       | 12.39        | 88        |
| 6.1.3 Professionals.....                            | 14.04        | 93        |
| 6.1.4 Researchers.....                              | 0.18         | 100       |
| 6.1.5 Senior officials and managers.....            | 4.76         | 106       |
| 6.1.6 Availability of scientists and engineers..... | 38.17        | 68        |
| 6.2 Talent Impact.....                              | 15.37        | 75        |
| 6.2.1 Innovation output.....                        | 17.64        | 93        |
| 6.2.2 High-value exports.....                       | 9.88         | 68        |
| 6.2.3 New product entrepreneurial activity.....     | 46.61        | 23        |
| 6.2.4 New business density.....                     | 2.55         | 80        |
| 6.2.5 Scientific journal articles.....              | 0.16         | 115       |

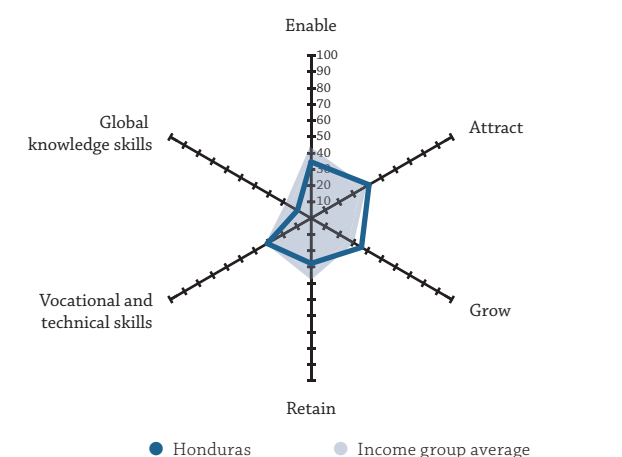
# HONDURAS

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>98</b>                              |
| Income group.....          | <b>Lower-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>9.27</b>                            |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>4,986.23</b> |
| GDP (US\$ billions).....               | <b>22.98</b>    |
| GTCI score.....                        | <b>30.05</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank       |
|------------------------------------------------|--------------|------------|
| <b>1 ENABLE.....</b>                           | <b>34.68</b> | <b>111</b> |
| 1.1 Regulatory Landscape.....                  | 37.59        | 101        |
| 1.1.1 Government effectiveness.....            | 27.05        | 107        |
| 1.1.2 Business-government relations.....       | 51.21        | 75         |
| 1.1.3 Political stability.....                 | 56.25        | 80         |
| 1.1.4 Regulatory quality.....                  | 35.65        | 100        |
| 1.1.5 Corruption.....                          | 17.81        | 102        |
| 1.2 Market Landscape.....                      | 38.05        | 94         |
| 1.2.1 Competition intensity.....               | 62.58        | 76         |
| 1.2.2 Ease of doing business.....              | 49.55        | 95         |
| 1.2.3 Cluster development.....                 | 34.86        | 74         |
| 1.2.4 R&D expenditure.....                     | 0.00         | 110        |
| 1.2.5 ICT infrastructure.....                  | 30.53        | 99         |
| 1.2.6 Technology utilisation.....              | 50.78        | 60         |
| 1.3 Business and Labour Landscape.....         | 28.40        | 119        |
| Labour Market                                  |              |            |
| 1.3.1 Ease of hiring.....                      | 0.00         | 121        |
| 1.3.2 Ease of redundancy.....                  | 25.00        | 109        |
| 1.3.3 Active labour market policies.....       | 18.75        | 109        |
| 1.3.4 Labour-employer cooperation.....         | 48.82        | 45         |
| Management Practice                            |              |            |
| 1.3.5 Professional management.....             | 34.72        | 91         |
| 1.3.6 Relationship of pay to productivity..... | 43.09        | 74         |
| <b>2 ATTRACT.....</b>                          | <b>41.17</b> | <b>75</b>  |
| 2.1 External Openness.....                     | 30.40        | 91         |
| Attract Business                               |              |            |
| 2.1.1 FDI and technology transfer.....         | 58.05        | 61         |
| 2.1.2 Prevalence of foreign ownership.....     | 55.33        | 73         |
| Attract People                                 |              |            |
| 2.1.3 Migrant stock.....                       | 0.72         | 113        |
| 2.1.4 International students.....              | 3.72         | 80         |
| 2.1.5 Brain gain.....                          | 34.20        | 85         |
| 2.2 Internal Openness.....                     | 51.93        | 53         |
| Social Inclusion                               |              |            |
| 2.2.1 Tolerance of minorities.....             | 43.53        | 62         |
| 2.2.2 Tolerance of immigrants.....             | 51.35        | 74         |
| 2.2.3 Social mobility.....                     | 47.54        | 71         |
| Gender Equality                                |              |            |
| 2.2.4 Female graduates.....                    | 91.72        | 11         |
| 2.2.5 Gender earnings gap.....                 | 43.49        | 85         |
| 2.2.6 Leadership opportunities for women.....  | 33.98        | 78         |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>35.81</b> | <b>69</b> |
| 3.1 Formal Education.....                       | 29.40        | 61        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 81.14        | 5         |
| 3.1.2 Tertiary enrolment.....                   | 16.28        | 86        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 20.18        | 63        |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 42.63        | 62        |
| 3.2.1 Quality of management schools.....        | 25.64        | 104       |
| 3.2.2 Prevalence of training in firms.....      | 58.44        | 22        |
| 3.2.3 Employee development.....                 | 43.82        | 54        |
| 3.3 Access to Growth Opportunities.....         | 35.40        | 85        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 45.43        | 66        |
| 3.3.2 Personal rights.....                      | 42.08        | 85        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 69.35        | 70        |
| 3.3.4 Use of virtual professional networks..... | 7.94         | 80        |
| 3.3.5 Collaboration within organisations.....   | 28.78        | 82        |
| 3.3.6 Collaboration across organisations.....   | 18.80        | 96        |

|                                      |              |            |
|--------------------------------------|--------------|------------|
| <b>4 RETAIN.....</b>                 | <b>27.81</b> | <b>109</b> |
| 4.1 Sustainability.....              | 24.47        | 107        |
| 4.1.1 Pension system.....            | 15.31        | 82         |
| 4.1.2 Social protection.....         | 18.12        | 110        |
| 4.1.3 Brain retention.....           | 39.99        | 70         |
| 4.2 Lifestyle.....                   | 31.15        | 103        |
| 4.2.1 Environmental performance..... | 40.14        | 90         |
| 4.2.2 Personal safety.....           | 0.00         | 121        |
| 4.2.3 Physician density.....         | 5.96         | 99         |
| 4.2.4 Sanitation.....                | 78.49        | 84         |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>31.14</b> | <b>84</b> |
| 5.1 Mid-Level Skills.....                               | 25.14        | 87        |
| 5.1.1 Workforce with secondary education.....           | 26.82        | 82        |
| 5.1.2 Population with secondary education.....          | 18.69        | 89        |
| 5.1.3 Technicians and associate professionals.....      | 29.91        | 71        |
| 5.1.4 Labour productivity per employee.....             | n/a          | n/a       |
| 5.2 Employability.....                                  | 37.14        | 74        |
| 5.2.1 Ease of finding skilled employees.....            | 43.74        | 70        |
| 5.2.2 Relevance of education system to the economy..... | 24.19        | 92        |
| 5.2.3 Skills matching with secondary education.....     | 39.58        | 69        |
| 5.2.4 Skills matching with tertiary education.....      | 41.07        | 75        |

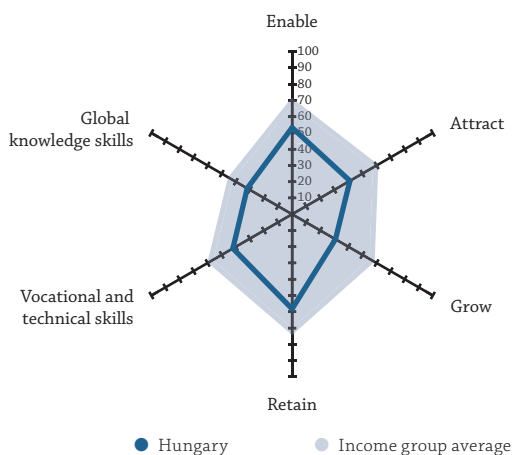
|                                                     |             |            |
|-----------------------------------------------------|-------------|------------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>9.71</b> | <b>107</b> |
| 6.1 High-Level Skills.....                          | 13.32       | 100        |
| 6.1.1 Workforce with tertiary education.....        | 9.18        | 99         |
| 6.1.2 Population with tertiary education.....       | 14.77       | 81         |
| 6.1.3 Professionals.....                            | 10.96       | 100        |
| 6.1.4 Researchers.....                              | 0.19        | 99         |
| 6.1.5 Senior officials and managers.....            | 16.67       | 69         |
| 6.1.6 Availability of scientists and engineers..... | 28.18       | 93         |
| 6.2 Talent Impact.....                              | 6.09        | 112        |
| 6.2.1 Innovation output.....                        | 13.66       | 103        |
| 6.2.2 High-value exports.....                       | 4.50        | 89         |
| 6.2.3 New product entrepreneurial activity.....     | n/a         | n/a        |
| 6.2.4 New business density.....                     | n/a         | n/a        |
| 6.2.5 Scientific journal articles.....              | 0.10        | 120        |

# HUNGARY

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>53</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>9.78</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 53.29 50</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 55.14  | 48   |
| 1.1.1 Government effectiveness.....            | 56.33  | 46   |
| 1.1.2 Business-government relations.....       | 36.42  | 106  |
| 1.1.3 Political stability.....                 | 81.02  | 32   |
| 1.1.4 Regulatory quality.....                  | 62.20  | 44   |
| 1.1.5 Corruption.....                          | 39.73  | 54   |
| 1.2 Market Landscape.....                      | 47.96  | 65   |
| 1.2.1 Competition intensity.....               | 42.20  | 118  |
| 1.2.2 Ease of doing business.....              | 74.57  | 43   |
| 1.2.3 Cluster development.....                 | 30.98  | 84   |
| 1.2.4 R&D expenditure.....                     | 28.12  | 30   |
| 1.2.5 ICT infrastructure.....                  | 77.61  | 31   |
| 1.2.6 Technology utilisation.....              | 34.30  | 103  |
| 1.3 Business and Labour Landscape.....         | 56.76  | 46   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 89.00  | 27   |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 38.29  | 71   |
| 1.3.4 Labour-employer cooperation.....         | 38.52  | 71   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 33.79  | 94   |
| 1.3.6 Relationship of pay to productivity..... | 40.96  | 80   |
| <b>2 ATTRACT..... 41.08 78</b>                 |        |      |
| 2.1 External Openness.....                     | 40.82  | 58   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 63.86  | 46   |
| 2.1.2 Prevalence of foreign ownership.....     | 58.60  | 61   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 10.57  | 54   |
| 2.1.4 International students.....              | 44.56  | 22   |
| 2.1.5 Brain gain.....                          | 26.51  | 102  |
| 2.2 Internal Openness.....                     | 41.35  | 102  |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 56.47  | 39   |
| 2.2.2 Tolerance of immigrants.....             | 14.86  | 114  |
| 2.2.3 Social mobility.....                     | 27.31  | 118  |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 83.81  | 24   |
| 2.2.5 Gender earnings gap.....                 | 55.91  | 51   |
| 2.2.6 Leadership opportunities for women.....  | 9.71   | 120  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>28,375.37</b> |
| GDP (US\$ billions).....               | <b>139.14</b>    |
| GTCI score.....                        | <b>42.89</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 30.82 83</b>                     |       |      |
| 3.1 Formal Education.....                       | 32.98 | 54   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 24.29 | 57   |
| 3.1.2 Tertiary enrolment.....                   | 39.03 | 55   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 17.19 | 73   |
| 3.1.4 Reading, maths, and science.....          | 63.66 | 35   |
| 3.1.5 University ranking.....                   | 20.73 | 53   |
| 3.2 Lifelong Learning.....                      | 27.67 | 108  |
| 3.2.1 Quality of management schools.....        | 41.82 | 62   |
| 3.2.2 Prevalence of training in firms.....      | 16.36 | 82   |
| 3.2.3 Employee development.....                 | 24.85 | 97   |
| 3.3 Access to Growth Opportunities.....         | 31.81 | 103  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 37.15 | 82   |
| 3.3.2 Personal rights.....                      | 58.67 | 63   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 52.09 | 104  |
| 3.3.4 Use of virtual professional networks..... | 16.79 | 60   |
| 3.3.5 Collaboration within organisations.....   | 11.28 | 119  |
| 3.3.6 Collaboration across organisations.....   | 14.86 | 106  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 58.20 45</b>        |       |     |
| 4.1 Sustainability.....              | 43.91 | 58  |
| 4.1.1 Pension system.....            | 91.84 | 12  |
| 4.1.2 Social protection.....         | 21.49 | 103 |
| 4.1.3 Brain retention.....           | 18.41 | 116 |
| 4.2 Lifestyle.....                   | 72.49 | 35  |
| 4.2.1 Environmental performance..... | 62.64 | 39  |
| 4.2.2 Personal safety.....           | 80.17 | 36  |
| 4.2.3 Physician density.....         | 49.30 | 34  |
| 4.2.4 Sanitation.....                | 97.85 | 37  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 42.05 53</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 62.35 | 17  |
| 5.1.1 Workforce with secondary education.....           | 82.84 | 11  |
| 5.1.2 Population with secondary education.....          | 66.05 | 19  |
| 5.1.3 Technicians and associate professionals.....      | 66.07 | 19  |
| 5.1.4 Labour productivity per employee.....             | 34.45 | 46  |
| 5.2 Employability.....                                  | 21.75 | 115 |
| 5.2.1 Ease of finding skilled employees.....            | 4.80  | 124 |
| 5.2.2 Relevance of education system to the economy..... | 17.03 | 104 |
| 5.2.3 Skills matching with secondary education.....     | 33.60 | 86  |
| 5.2.4 Skills matching with tertiary education.....      | 31.56 | 92  |

|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 31.88 46</b>      |       |    |
| 6.1 High-Level Skills.....                          | 33.38 | 50 |
| 6.1.1 Workforce with tertiary education.....        | 38.37 | 47 |
| 6.1.2 Population with tertiary education.....       | 34.97 | 42 |
| 6.1.3 Professionals.....                            | 39.61 | 44 |
| 6.1.4 Researchers.....                              | 32.01 | 30 |
| 6.1.5 Senior officials and managers.....            | 26.19 | 50 |
| 6.1.6 Availability of scientists and engineers..... | 29.12 | 88 |
| 6.2 Talent Impact.....                              | 30.38 | 39 |
| 6.2.1 Innovation output.....                        | 55.80 | 24 |
| 6.2.2 High-value exports.....                       | 25.47 | 32 |
| 6.2.3 New product entrepreneurial activity.....     | 29.00 | 55 |
| 6.2.4 New business density.....                     | 16.24 | 35 |
| 6.2.5 Scientific journal articles.....              | 25.40 | 39 |

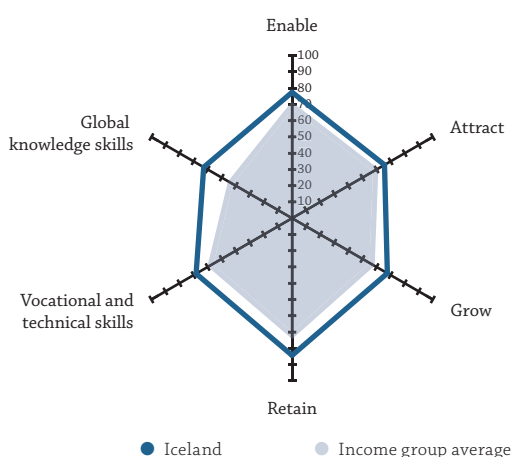
# ICELAND

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>13</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>0.34</b>        |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>53,518.09</b> |
| GDP (US\$ billions) .....               | <b>23.91</b>     |
| GTCI score.....                         | <b>71.03</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>1 ENABLE.....77.48 18</b>                           |       |      |
| 1.1 Regulatory Landscape.....78.64 18                  |       |      |
| 1.1.1 Government effectiveness.....80.15 17            |       |      |
| 1.1.2 Business-government relations.....55.63 68       |       |      |
| 1.1.3 Political stability.....95.37 4                  |       |      |
| 1.1.4 Regulatory quality.....78.47 22                  |       |      |
| 1.1.5 Corruption.....83.56 13                          |       |      |
| 1.2 Market Landscape.....73.50 18                      |       |      |
| 1.2.1 Competition intensity.....63.77 70               |       |      |
| 1.2.2 Ease of doing business.....85.54 20              |       |      |
| 1.2.3 Cluster development.....49.05 41                 |       |      |
| 1.2.4 R&D expenditure.....49.27 15                     |       |      |
| 1.2.5 ICT infrastructure.....97.96 2                   |       |      |
| 1.2.6 Technology utilisation.....95.39 5               |       |      |
| 1.3 Business and Labour Landscape.....80.31 13         |       |      |
| Labour Market                                          |       |      |
| 1.3.1 Ease of hiring.....55.67 76                      |       |      |
| 1.3.2 Ease of redundancy.....100.00 1                  |       |      |
| 1.3.3 Active labour market policies.....87.54 7        |       |      |
| 1.3.4 Labour-employer cooperation.....80.50 11         |       |      |
| Management Practice                                    |       |      |
| 1.3.5 Professional management.....79.06 20             |       |      |
| 1.3.6 Relationship of pay to productivity.....79.09 12 |       |      |
| <b>2 ATTRACT.....65.66 18</b>                          |       |      |
| 2.1 External Openness.....41.57 52                     |       |      |
| Attract Business                                       |       |      |
| 2.1.1 FDI and technology transfer.....55.53 67         |       |      |
| 2.1.2 Prevalence of foreign ownership.....33.22 114    |       |      |
| Attract People                                         |       |      |
| 2.1.3 Migrant stock.....25.69 30                       |       |      |
| 2.1.4 International students.....37.19 28              |       |      |
| 2.1.5 Brain gain.....56.21 31                          |       |      |
| 2.2 Internal Openness.....89.75 1                      |       |      |
| Social Inclusion                                       |       |      |
| 2.2.1 Tolerance of minorities.....100.00 1             |       |      |
| 2.2.2 Tolerance of immigrants.....94.59 4              |       |      |
| 2.2.3 Social mobility.....91.53 8                      |       |      |
| Gender Equality                                        |       |      |
| 2.2.4 Female graduates.....91.72 10                    |       |      |
| 2.2.5 Gender earnings gap.....67.38 20                 |       |      |
| 2.2.6 Leadership opportunities for women.....93.29 3   |       |      |

|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>3 GROW.....67.69 16</b>                             |       |      |
| 3.1 Formal Education.....41.76 38                      |       |      |
| Enrolment                                              |       |      |
| 3.1.1 Vocational enrolment.....44.77 31                |       |      |
| 3.1.2 Tertiary enrolment.....61.93 19                  |       |      |
| Quality                                                |       |      |
| 3.1.3 Tertiary education expenditure.....35.33 20      |       |      |
| 3.1.4 Reading, maths, and science.....66.75 32         |       |      |
| 3.1.5 University ranking.....0.00 78                   |       |      |
| 3.2 Lifelong Learning.....74.97 15                     |       |      |
| 3.2.1 Quality of management schools.....73.07 19       |       |      |
| 3.2.2 Prevalence of training in firms.....n/a n/a      |       |      |
| 3.2.3 Employee development.....76.86 17                |       |      |
| 3.3 Access to Growth Opportunities.....86.35 5         |       |      |
| Empowerment                                            |       |      |
| 3.3.1 Delegation of authority.....80.95 14             |       |      |
| 3.3.2 Personal rights.....93.37 12                     |       |      |
| Collaboration                                          |       |      |
| 3.3.3 Use of virtual social networks.....97.98 3       |       |      |
| 3.3.4 Use of virtual professional networks.....92.67 2 |       |      |
| 3.3.5 Collaboration within organisations.....85.74 9   |       |      |
| 3.3.6 Collaboration across organisations.....67.36 17  |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....84.37 9</b>                  |  |  |
| 4.1 Sustainability.....82.76 12              |  |  |
| 4.1.1 Pension system.....86.73 23            |  |  |
| 4.1.2 Social protection.....84.27 12         |  |  |
| 4.1.3 Brain retention.....77.29 15           |  |  |
| 4.2 Lifestyle.....85.98 7                    |  |  |
| 4.2.1 Environmental performance.....85.25 11 |  |  |
| 4.2.2 Personal safety.....99.24 6            |  |  |
| 4.2.3 Physician density.....60.49 17         |  |  |
| 4.2.4 Sanitation.....98.92 21                |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....68.20 12</b>           |  |  |
| 5.1 Mid-Level Skills.....54.72 30                               |  |  |
| 5.1.1 Workforce with secondary education.....50.42 52           |  |  |
| 5.1.2 Population with secondary education.....n/a n/a           |  |  |
| 5.1.3 Technicians and associate professionals.....65.18 21      |  |  |
| 5.1.4 Labour productivity per employee.....48.57 24             |  |  |
| 5.2 Employability.....81.68 9                                   |  |  |
| 5.2.1 Ease of finding skilled employees.....87.38 9             |  |  |
| 5.2.2 Relevance of education system to the economy.....75.84 13 |  |  |
| 5.2.3 Skills matching with secondary education.....77.60 8      |  |  |
| 5.2.4 Skills matching with tertiary education.....85.92 6       |  |  |

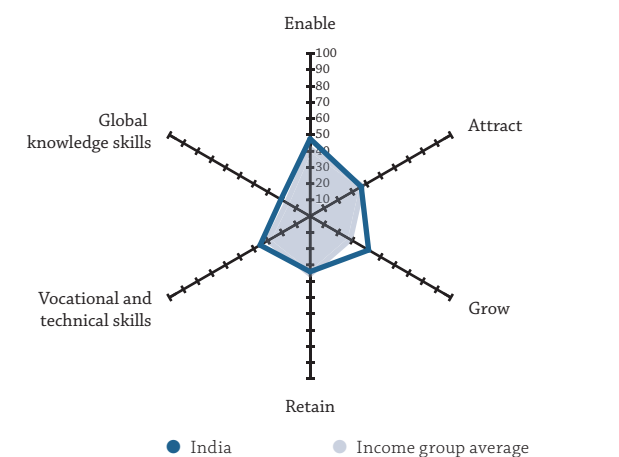
|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....62.79 2</b>                |  |  |
| 6.1 High-Level Skills.....65.94 5                           |  |  |
| 6.1.1 Workforce with tertiary education.....53.71 24        |  |  |
| 6.1.2 Population with tertiary education.....n/a n/a        |  |  |
| 6.1.3 Professionals.....69.66 6                             |  |  |
| 6.1.4 Researchers.....80.40 6                               |  |  |
| 6.1.5 Senior officials and managers.....60.12 11            |  |  |
| 6.1.6 Availability of scientists and engineers.....65.80 18 |  |  |
| 6.2 Talent Impact.....59.64 5                               |  |  |
| 6.2.1 Innovation output.....61.39 19                        |  |  |
| 6.2.2 High-value exports.....42.19 12                       |  |  |
| 6.2.3 New product entrepreneurial activity.....n/a n/a      |  |  |
| 6.2.4 New business density.....58.46 9                      |  |  |
| 6.2.5 Scientific journal articles.....76.52 8               |  |  |

# INDIA

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>80</b>                        |
| Income group.....          | <b>Lower-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>1,339.18</b>                  |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....47.67</b>                      | <b>70</b> |      |
| 1.1 Regulatory Landscape.....                  | 42.16     | 86   |
| 1.1.1 Government effectiveness.....            | 47.64     | 63   |
| 1.1.2 Business-government relations.....       | 47.24     | 88   |
| 1.1.3 Political stability.....                 | 42.59     | 105  |
| 1.1.4 Regulatory quality.....                  | 40.43     | 88   |
| 1.1.5 Corruption.....                          | 32.88     | 64   |
| 1.2 Market Landscape.....                      | 42.50     | 79   |
| 1.2.1 Competition intensity.....               | 56.51     | 91   |
| 1.2.2 Ease of doing business.....              | 53.68     | 85   |
| 1.2.3 Cluster development.....                 | 59.49     | 29   |
| 1.2.4 R&D expenditure.....                     | 14.37     | 50   |
| 1.2.5 ICT infrastructure.....                  | 24.43     | 104  |
| 1.2.6 Technology utilisation.....              | 46.50     | 68   |
| 1.3 Business and Labour Landscape.....         | 58.37     | 38   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 72.17     | 57   |
| 1.3.2 Ease of redundancy.....                  | 50.00     | 85   |
| 1.3.3 Active labour market policies.....       | 63.76     | 28   |
| 1.3.4 Labour-employer cooperation.....         | 44.17     | 52   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 54.73     | 45   |
| 1.3.6 Relationship of pay to productivity..... | 65.40     | 31   |
| <b>2 ATTRACT.....36.33</b>                     | <b>95</b> |      |
| 2.1 External Openness.....                     | 37.70     | 67   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 59.20     | 55   |
| 2.1.2 Prevalence of foreign ownership.....     | 59.23     | 58   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 0.65      | 114  |
| 2.1.4 International students.....              | 0.56      | 98   |
| 2.1.5 Brain gain.....                          | 68.84     | 18   |
| 2.2 Internal Openness.....                     | 34.95     | 116  |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 15.29     | 105  |
| 2.2.2 Tolerance of immigrants.....             | 28.38     | 104  |
| 2.2.3 Social mobility.....                     | 56.49     | 42   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 55.91     | 81   |
| 2.2.5 Gender earnings gap.....                 | 8.24      | 116  |
| 2.2.6 Leadership opportunities for women.....  | 45.40     | 55   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>7,055.55</b> |
| GDP (US\$ billions).....               | <b>2,597.49</b> |
| GTCI score.....                        | <b>35.98</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....41.57</b>                         | <b>48</b> |      |
| 3.1 Formal Education.....                       | 24.36     | 70   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 2.70      | 106  |
| 3.1.2 Tertiary enrolment.....                   | 21.60     | 83   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 25.39     | 49   |
| 3.1.4 Reading, maths, and science.....          | n/a       | n/a  |
| 3.1.5 University ranking.....                   | 47.76     | 20   |
| 3.2 Lifelong Learning.....                      | 51.53     | 38   |
| 3.2.1 Quality of management schools.....        | 53.27     | 38   |
| 3.2.2 Prevalence of training in firms.....      | 42.88     | 37   |
| 3.2.3 Employee development.....                 | 58.46     | 31   |
| 3.3 Access to Growth Opportunities.....         | 48.82     | 41   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 52.40     | 41   |
| 3.3.2 Personal rights.....                      | 69.05     | 45   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 48.52     | 109  |
| 3.3.4 Use of virtual professional networks..... | 7.68      | 83   |
| 3.3.5 Collaboration within organisations.....   | 54.58     | 29   |
| 3.3.6 Collaboration across organisations.....   | 60.70     | 22   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....34.13</b>            | <b>96</b> |     |
| 4.1 Sustainability.....              | 42.63     | 62  |
| 4.1.1 Pension system.....            | 8.16      | 88  |
| 4.1.2 Social protection.....         | 51.40     | 41  |
| 4.1.3 Brain retention.....           | 68.33     | 23  |
| 4.2 Lifestyle.....                   | 25.62     | 112 |
| 4.2.1 Environmental performance..... | 5.23      | 121 |
| 4.2.2 Personal safety.....           | 45.59     | 97  |
| 4.2.3 Physician density.....         | 11.86     | 93  |
| 4.2.4 Sanitation.....                | 39.78     | 107 |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....35.49</b>      | <b>72</b> |     |
| 5.1 Mid-Level Skills.....                               | 13.84     | 106 |
| 5.1.1 Workforce with secondary education.....           | 9.05      | 106 |
| 5.1.2 Population with secondary education.....          | 23.82     | 76  |
| 5.1.3 Technicians and associate professionals.....      | 13.84     | 95  |
| 5.1.4 Labour productivity per employee.....             | 8.63      | 83  |
| 5.2 Employability.....                                  | 57.14     | 34  |
| 5.2.1 Ease of finding skilled employees.....            | 58.83     | 46  |
| 5.2.2 Relevance of education system to the economy..... | 60.25     | 25  |
| 5.2.3 Skills matching with secondary education.....     | 58.24     | 32  |
| 5.2.4 Skills matching with tertiary education.....      | 51.24     | 53  |

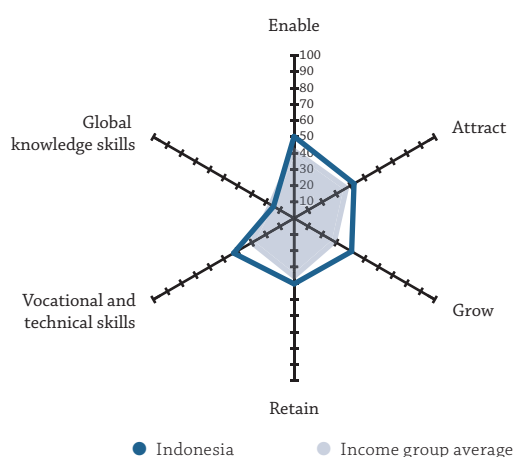
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|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....20.72</b>          | <b>72</b> |     |
| 6.1 High-Level Skills.....                          | 23.56     | 77  |
| 6.1.1 Workforce with tertiary education.....        | 14.43     | 91  |
| 6.1.2 Population with tertiary education.....       | 14.94     | 80  |
| 6.1.3 Professionals.....                            | 8.71      | 106 |
| 6.1.4 Researchers.....                              | 2.53      | 74  |
| 6.1.5 Senior officials and managers.....            | 41.67     | 27  |
| 6.1.6 Availability of scientists and engineers..... | 59.05     | 30  |
| 6.2 Talent Impact.....                              | 17.88     | 67  |
| 6.2.1 Innovation output.....                        | 33.65     | 56  |
| 6.2.2 High-value exports.....                       | 12.93     | 60  |
| 6.2.3 New product entrepreneurial activity.....     | 39.05     | 41  |
| 6.2.4 New business density.....                     | 0.48      | 94  |
| 6.2.5 Scientific journal articles.....              | 3.26      | 77  |

# INDONESIA

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>67</b>                                     |
| Income group.....          | <b>Lower-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>263.99</b>                                 |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>50.32</b> | <b>60</b> |
| 1.1 Regulatory Landscape.....                  | 48.63        | 63        |
| 1.1.1 Government effectiveness.....            | 45.41        | 68        |
| 1.1.2 Business-government relations.....       | 68.21        | 34        |
| 1.1.3 Political stability.....                 | 55.79        | 81        |
| 1.1.4 Regulatory quality.....                  | 44.98        | 74        |
| 1.1.5 Corruption.....                          | 28.77        | 73        |
| 1.2 Market Landscape.....                      | 52.20        | 51        |
| 1.2.1 Competition intensity.....               | 76.01        | 36        |
| 1.2.2 Ease of doing business.....              | 63.94        | 65        |
| 1.2.3 Cluster development.....                 | 64.83        | 24        |
| 1.2.4 R&D expenditure.....                     | 1.65         | 105       |
| 1.2.5 ICT infrastructure.....                  | 40.33        | 84        |
| 1.2.6 Technology utilisation.....              | 66.46        | 37        |
| 1.3 Business and Labour Landscape.....         | 50.11        | 69        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 27.67        | 111       |
| 1.3.2 Ease of redundancy.....                  | 25.00        | 109       |
| 1.3.3 Active labour market policies.....       | 61.81        | 33        |
| 1.3.4 Labour-employer cooperation.....         | 52.83        | 39        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 60.55        | 32        |
| 1.3.6 Relationship of pay to productivity..... | 72.83        | 19        |
| <b>2 ATTRACT.....</b>                          | <b>42.58</b> | <b>65</b> |
| 2.1 External Openness.....                     | 38.27        | 65        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 64.73        | 42        |
| 2.1.2 Prevalence of foreign ownership.....     | 61.46        | 55        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 0.12         | 123       |
| 2.1.4 International students.....              | 0.45         | 99        |
| 2.1.5 Brain gain.....                          | 64.57        | 24        |
| 2.2 Internal Openness.....                     | 46.90        | 72        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 29.41        | 82        |
| 2.2.2 Tolerance of immigrants.....             | 20.27        | 109       |
| 2.2.3 Social mobility.....                     | 55.32        | 45        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 77.41        | 42        |
| 2.2.5 Gender earnings gap.....                 | 39.19        | 96        |
| 2.2.6 Leadership opportunities for women.....  | 59.78        | 31        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>12,283.62</b> |
| GDP (US\$ billions).....               | <b>1,015.54</b>  |
| GTCI score.....                        | <b>38.61</b>     |
| GTCI score (income group average)..... | <b>31.64</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>40.88</b> | <b>51</b> |
| 3.1 Formal Education.....                       | 26.24        | 67        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 38.26        | 41        |
| 3.1.2 Tertiary enrolment.....                   | 22.43        | 81        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 12.40        | 88        |
| 3.1.4 Reading, maths, and science.....          | 26.56        | 61        |
| 3.1.5 University ranking.....                   | 31.57        | 36        |
| 3.2 Lifelong Learning.....                      | 40.34        | 66        |
| 3.2.1 Quality of management schools.....        | 52.35        | 39        |
| 3.2.2 Prevalence of training in firms.....      | 5.67         | 88        |
| 3.2.3 Employee development.....                 | 63.00        | 27        |
| 3.3 Access to Growth Opportunities.....         | 56.05        | 32        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 64.91        | 25        |
| 3.3.2 Personal rights.....                      | 59.66        | 61        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 75.14        | 52        |
| 3.3.4 Use of virtual professional networks..... | 4.02         | 94        |
| 3.3.5 Collaboration within organisations.....   | 63.36        | 24        |
| 3.3.6 Collaboration across organisations.....   | 69.19        | 15        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>40.39</b> | <b>87</b> |
| 4.1 Sustainability.....              | 40.24        | 64        |
| 4.1.1 Pension system.....            | 5.10         | 96        |
| 4.1.2 Social protection.....         | 53.17        | 39        |
| 4.1.3 Brain retention.....           | 62.44        | 31        |
| 4.2 Lifestyle.....                   | 40.55        | 95        |
| 4.2.1 Environmental performance..... | 32.49        | 103       |
| 4.2.2 Personal safety.....           | 61.17        | 67        |
| 4.2.3 Physician density.....         | 2.93         | 106       |
| 4.2.4 Sanitation.....                | 65.59        | 94        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>42.90</b> | <b>51</b> |
| 5.1 Mid-Level Skills.....                               | 23.91        | 90        |
| 5.1.1 Workforce with secondary education.....           | 37.02        | 72        |
| 5.1.2 Population with secondary education.....          | 32.67        | 62        |
| 5.1.3 Technicians and associate professionals.....      | 12.05        | 99        |
| 5.1.4 Labour productivity per employee.....             | 13.91        | 73        |
| 5.2 Employability.....                                  | 61.89        | 28        |
| 5.2.1 Ease of finding skilled employees.....            | 67.22        | 31        |
| 5.2.2 Relevance of education system to the economy..... | 55.57        | 31        |
| 5.2.3 Skills matching with secondary education.....     | 59.59        | 29        |
| 5.2.4 Skills matching with tertiary education.....      | 65.19        | 28        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>14.59</b> | <b>94</b> |
| 6.1 High-Level Skills.....                          | 19.23        | 86        |
| 6.1.1 Workforce with tertiary education.....        | 17.97        | 85        |
| 6.1.2 Population with tertiary education.....       | 13.92        | 84        |
| 6.1.3 Professionals.....                            | 15.17        | 89        |
| 6.1.4 Researchers.....                              | 0.99         | 84        |
| 6.1.5 Senior officials and managers.....            | 10.71        | 87        |
| 6.1.6 Availability of scientists and engineers..... | 56.60        | 33        |
| 6.2 Talent Impact.....                              | 9.94         | 96        |
| 6.2.1 Innovation output.....                        | 24.60        | 72        |
| 6.2.2 High-value exports.....                       | 10.50        | 66        |
| 6.2.3 New product entrepreneurial activity.....     | 11.95        | 78        |
| 6.2.4 New business density.....                     | 1.54         | 87        |
| 6.2.5 Scientific journal articles.....              | 1.13         | 91        |

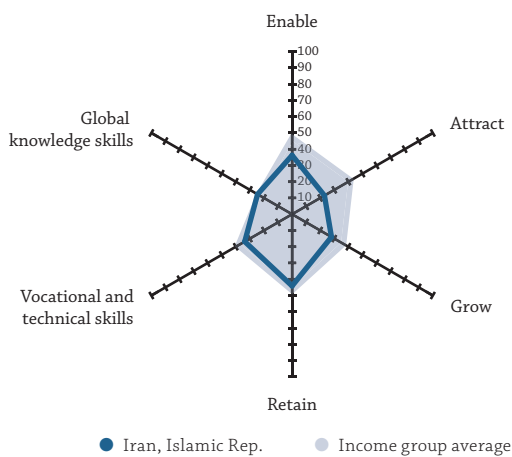


# IRAN, ISLAMIC REP.

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>97</b>                        |
| Income group.....          | <b>Upper-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>81.16</b>                     |

GTCI 2019 Country Profile by Pillar



|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>1 ENABLE..... 36.25 107</b>                          |       |      |
| 1.1 Regulatory Landscape..... 31.98 110                 |       |      |
| 1.1.1 Government effectiveness..... 40.20 81            |       |      |
| 1.1.2 Business-government relations..... 34.66 111      |       |      |
| 1.1.3 Political stability..... 47.45 96                 |       |      |
| 1.1.4 Regulatory quality..... 18.42 121                 |       |      |
| 1.1.5 Corruption..... 19.18 99                          |       |      |
| 1.2 Market Landscape..... 37.62 97                      |       |      |
| 1.2.1 Competition intensity..... 43.05 117              |       |      |
| 1.2.2 Ease of doing business..... 45.99 101             |       |      |
| 1.2.3 Cluster development..... 37.30 68                 |       |      |
| 1.2.4 R&D expenditure..... 5.61 80                      |       |      |
| 1.2.5 ICT infrastructure..... 64.38 59                  |       |      |
| 1.2.6 Technology utilisation..... 29.41 112             |       |      |
| 1.3 Business and Labour Landscape..... 39.14 101        |       |      |
| Labour Market                                           |       |      |
| 1.3.1 Ease of hiring..... 77.67 46                      |       |      |
| 1.3.2 Ease of redundancy..... 37.50 104                 |       |      |
| 1.3.3 Active labour market policies..... 39.45 68       |       |      |
| 1.3.4 Labour-employer cooperation..... 20.41 112        |       |      |
| Management Practice                                     |       |      |
| 1.3.5 Professional management..... 24.95 114            |       |      |
| 1.3.6 Relationship of pay to productivity..... 34.86 95 |       |      |
| <b>2 ATTRACT..... 22.99 123</b>                         |       |      |
| 2.1 External Openness..... 22.29 117                    |       |      |
| Attract Business                                        |       |      |
| 2.1.1 FDI and technology transfer..... 55.25 68         |       |      |
| 2.1.2 Prevalence of foreign ownership..... 20.04 122    |       |      |
| Attract People                                          |       |      |
| 2.1.3 Migrant stock..... 6.73 67                        |       |      |
| 2.1.4 International students..... 2.03 86               |       |      |
| 2.1.5 Brain gain..... 27.38 99                          |       |      |
| 2.2 Internal Openness..... 23.70 123                    |       |      |
| Social Inclusion                                        |       |      |
| 2.2.1 Tolerance of minorities..... 11.76 110            |       |      |
| 2.2.2 Tolerance of immigrants..... 43.24 84             |       |      |
| 2.2.3 Social mobility..... 39.17 93                     |       |      |
| Gender Equality                                         |       |      |
| 2.2.4 Female graduates..... 32.64 97                    |       |      |
| 2.2.5 Gender earnings gap..... 0.60 120                 |       |      |
| 2.2.6 Leadership opportunities for women..... 14.79 115 |       |      |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>20,949.94</b> |
| GDP (US\$ billions).....               | <b>439.51</b>    |
| GTCI score.....                        | <b>31.59</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW..... 27.98 94</b>                             |       |      |
| 3.1 Formal Education..... 33.32 53                      |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment..... 30.36 52                |       |      |
| 3.1.2 Tertiary enrolment..... 56.22 23                  |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure..... 23.12 58      |       |      |
| 3.1.4 Reading, maths, and science..... n/a n/a          |       |      |
| 3.1.5 University ranking..... 23.59 47                  |       |      |
| 3.2 Lifelong Learning..... 30.23 96                     |       |      |
| 3.2.1 Quality of management schools..... 32.92 86       |       |      |
| 3.2.2 Prevalence of training in firms..... n/a n/a      |       |      |
| 3.2.3 Employee development..... 27.54 92                |       |      |
| 3.3 Access to Growth Opportunities..... 20.38 121       |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority..... 21.45 119            |       |      |
| 3.3.2 Personal rights..... 4.12 121                     |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks..... 43.94 112     |       |      |
| 3.3.4 Use of virtual professional networks..... n/a n/a |       |      |
| 3.3.5 Collaboration within organisations..... 16.54 113 |       |      |
| 3.3.6 Collaboration across organisations..... 15.85 105 |       |      |

|                                               |  |  |
|-----------------------------------------------|--|--|
| <b>4 RETAIN..... 44.12 72</b>                 |  |  |
| 4.1 Sustainability..... 34.53 72              |  |  |
| 4.1.1 Pension system..... 32.65 61            |  |  |
| 4.1.2 Social protection..... 40.95 59         |  |  |
| 4.1.3 Brain retention..... 29.98 97           |  |  |
| 4.2 Lifestyle..... 53.70 74                   |  |  |
| 4.2.1 Environmental performance..... 51.23 68 |  |  |
| 4.2.2 Personal safety..... 52.88 83           |  |  |
| 4.2.3 Physician density..... 23.62 76         |  |  |
| 4.2.4 Sanitation..... 87.10 74                |  |  |

|                                                                  |  |  |
|------------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 33.64 78</b>           |  |  |
| 5.1 Mid-Level Skills..... 32.26 74                               |  |  |
| 5.1.1 Workforce with secondary education..... n/a n/a            |  |  |
| 5.1.2 Population with secondary education..... 35.81 56          |  |  |
| 5.1.3 Technicians and associate professionals..... 21.88 84      |  |  |
| 5.1.4 Labour productivity per employee..... 39.11 35             |  |  |
| 5.2 Employability..... 35.02 82                                  |  |  |
| 5.2.1 Ease of finding skilled employees..... 45.13 66            |  |  |
| 5.2.2 Relevance of education system to the economy..... 26.01 88 |  |  |
| 5.2.3 Skills matching with secondary education..... 38.13 75     |  |  |
| 5.2.4 Skills matching with tertiary education..... 30.80 95      |  |  |

|                                                              |  |  |
|--------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 24.54 63</b>               |  |  |
| 6.1 High-Level Skills..... 27.57 67                          |  |  |
| 6.1.1 Workforce with tertiary education..... n/a n/a         |  |  |
| 6.1.2 Population with tertiary education..... 35.14 40       |  |  |
| 6.1.3 Professionals..... 23.88 69                            |  |  |
| 6.1.4 Researchers..... 8.05 58                               |  |  |
| 6.1.5 Senior officials and managers..... 16.07 70            |  |  |
| 6.1.6 Availability of scientists and engineers..... 54.70 37 |  |  |
| 6.2 Talent Impact..... 21.51 59                              |  |  |
| 6.2.1 Innovation output..... 37.58 45                        |  |  |
| 6.2.2 High-value exports..... 7.46 78                        |  |  |
| 6.2.3 New product entrepreneurial activity..... 20.78 64     |  |  |
| 6.2.4 New business density..... n/a n/a                      |  |  |
| 6.2.5 Scientific journal articles..... 20.20 42              |  |  |

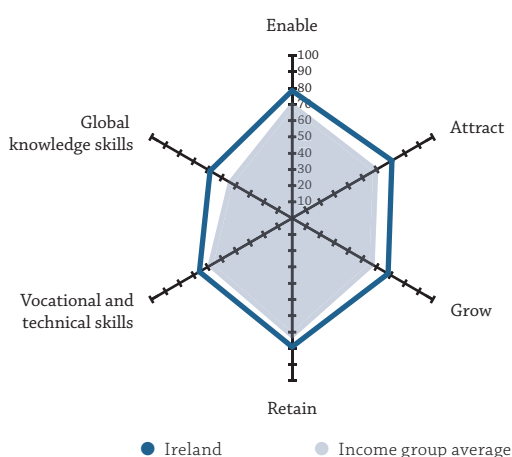
# IRELAND

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>16</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>4.81</b>        |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>76,304.71</b> |
| GDP (US\$ billions) .....               | <b>333.73</b>    |
| GTCI score.....                         | <b>70.15</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                     | Score | Rank |
|-----------------------------------------------------|-------|------|
| <b>1 ENABLE.....78.47 16</b>                        |       |      |
| 1.1 Regulatory Landscape.....84.39                  |       | 12   |
| 1.1.1 Government effectiveness.....78.66            |       | 20   |
| 1.1.2 Business-government relations.....89.40       |       | 8    |
| 1.1.3 Political stability.....84.95                 |       | 22   |
| 1.1.4 Regulatory quality.....89.47                  |       | 10   |
| 1.1.5 Corruption.....79.45                          |       | 18   |
| 1.2 Market Landscape.....69.60                      |       | 24   |
| 1.2.1 Competition intensity.....73.38               |       | 48   |
| 1.2.2 Ease of doing business.....87.36              |       | 14   |
| 1.2.3 Cluster development.....70.13                 |       | 18   |
| 1.2.4 R&D expenditure.....27.43                     |       | 32   |
| 1.2.5 ICT infrastructure.....82.19                  |       | 20   |
| 1.2.6 Technology utilisation.....77.12              |       | 21   |
| 1.3 Business and Labour Landscape.....81.43         |       | 11   |
| Labour Market                                       |       |      |
| 1.3.1 Ease of hiring.....89.00                      |       | 27   |
| 1.3.2 Ease of redundancy.....87.50                  |       | 34   |
| 1.3.3 Active labour market policies.....75.74       |       | 19   |
| 1.3.4 Labour-employer cooperation.....65.64         |       | 25   |
| Management Practice                                 |       |      |
| 1.3.5 Professional management.....91.48             |       | 10   |
| 1.3.6 Relationship of pay to productivity.....79.22 |       | 11   |
| <b>2 ATTRACT.....70.94 11</b>                       |       |      |
| 2.1 External Openness.....68.76                     |       | 11   |
| Attract Business                                    |       |      |
| 2.1.1 FDI and technology transfer.....100.00        |       | 1    |
| 2.1.2 Prevalence of foreign ownership.....91.44     |       | 7    |
| Attract People                                      |       |      |
| 2.1.3 Migrant stock.....34.89                       |       | 20   |
| 2.1.4 International students.....41.19              |       | 24   |
| 2.1.5 Brain gain.....76.28                          |       | 11   |
| 2.2 Internal Openness.....73.13                     |       | 11   |
| Social Inclusion                                    |       |      |
| 2.2.1 Tolerance of minorities.....96.47             |       | 2    |
| 2.2.2 Tolerance of immigrants.....91.89             |       | 7    |
| 2.2.3 Social mobility.....79.53                     |       | 17   |
| Gender Equality                                     |       |      |
| 2.2.4 Female graduates.....60.58                    |       | 77   |
| 2.2.5 Gender earnings gap.....50.18                 |       | 75   |
| 2.2.6 Leadership opportunities for women.....60.12  |       | 30   |

|                                                      | Score | Rank |
|------------------------------------------------------|-------|------|
| <b>3 GROW.....68.22 15</b>                           |       |      |
| 3.1 Formal Education.....50.61                       |       | 24   |
| Enrolment                                            |       |      |
| 3.1.1 Vocational enrolment.....33.73                 |       | 46   |
| 3.1.2 Tertiary enrolment.....68.35                   |       | 9    |
| Quality                                              |       |      |
| 3.1.3 Tertiary education expenditure.....23.49       |       | 57   |
| 3.1.4 Reading, maths, and science.....79.97          |       | 9    |
| 3.1.5 University ranking.....47.49                   |       | 21   |
| 3.2 Lifelong Learning.....73.90                      |       | 16   |
| 3.2.1 Quality of management schools.....74.66        |       | 15   |
| 3.2.2 Prevalence of training in firms.....n/a        |       | n/a  |
| 3.2.3 Employee development.....73.14                 |       | 19   |
| 3.3 Access to Growth Opportunities.....80.15         |       | 12   |
| Empowerment                                          |       |      |
| 3.3.1 Delegation of authority.....83.15              |       | 11   |
| 3.3.2 Personal rights.....94.19                      |       | 10   |
| Collaboration                                        |       |      |
| 3.3.3 Use of virtual social networks.....87.81       |       | 15   |
| 3.3.4 Use of virtual professional networks.....80.78 |       | 6    |
| 3.3.5 Collaboration within organisations.....71.81   |       | 21   |
| 3.3.6 Collaboration across organisations.....63.17   |       | 20   |

|                                           |  |    |
|-------------------------------------------|--|----|
| <b>4 RETAIN.....79.12 16</b>              |  |    |
| 4.1 Sustainability.....78.94              |  | 16 |
| 4.1.1 Pension system.....88.78            |  | 21 |
| 4.1.2 Social protection.....78.13         |  | 17 |
| 4.1.3 Brain retention.....69.92           |  | 20 |
| 4.2 Lifestyle.....79.30                   |  | 20 |
| 4.2.1 Environmental performance.....85.58 |  | 9  |
| 4.2.2 Personal safety.....93.05           |  | 17 |
| 4.2.3 Physician density.....47.19         |  | 38 |
| 4.2.4 Sanitation.....91.40                |  | 66 |

|                                                              |  |    |
|--------------------------------------------------------------|--|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....65.85 13</b>        |  |    |
| 5.1 Mid-Level Skills.....54.17                               |  | 31 |
| 5.1.1 Workforce with secondary education.....49.26           |  | 55 |
| 5.1.2 Population with secondary education.....38.66          |  | 53 |
| 5.1.3 Technicians and associate professionals.....49.55      |  | 41 |
| 5.1.4 Labour productivity per employee.....79.22             |  | 6  |
| 5.2 Employability.....77.52                                  |  | 13 |
| 5.2.1 Ease of finding skilled employees.....84.84            |  | 13 |
| 5.2.2 Relevance of education system to the economy.....80.64 |  | 7  |
| 5.2.3 Skills matching with secondary education.....62.65     |  | 26 |
| 5.2.4 Skills matching with tertiary education.....81.95      |  | 13 |

|                                                          |  |    |
|----------------------------------------------------------|--|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....58.28 11</b>            |  |    |
| 6.1 High-Level Skills.....59.10                          |  | 13 |
| 6.1.1 Workforce with tertiary education.....67.06        |  | 9  |
| 6.1.2 Population with tertiary education.....49.58       |  | 24 |
| 6.1.3 Professionals.....58.15                            |  | 17 |
| 6.1.4 Researchers.....67.40                              |  | 9  |
| 6.1.5 Senior officials and managers.....48.21            |  | 19 |
| 6.1.6 Availability of scientists and engineers.....64.22 |  | 21 |
| 6.2 Talent Impact.....57.46                              |  | 7  |
| 6.2.1 Innovation output.....73.19                        |  | 9  |
| 6.2.2 High-value exports.....52.79                       |  | 6  |
| 6.2.3 New product entrepreneurial activity.....72.16     |  | 7  |
| 6.2.4 New business density.....32.29                     |  | 20 |
| 6.2.5 Scientific journal articles.....56.88              |  | 16 |

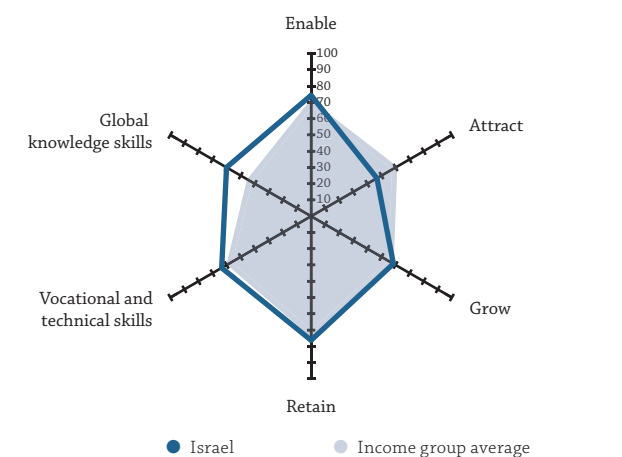


# ISRAEL

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>20</b>                               |
| Income group.....          | <b>High income</b>                      |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>8.71</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....74.40</b>                      | <b>22</b> |      |
| 1.1 Regulatory Landscape.....                  | 64.28     | 38   |
| 1.1.1 Government effectiveness.....            | 78.66     | 20   |
| 1.1.2 Business-government relations.....       | 55.19     | 70   |
| 1.1.3 Political stability.....                 | 45.37     | 100  |
| 1.1.4 Regulatory quality.....                  | 79.19     | 21   |
| 1.1.5 Corruption.....                          | 63.01     | 28   |
| 1.2 Market Landscape.....                      | 80.01     | 12   |
| 1.2.1 Competition intensity.....               | 73.86     | 46   |
| 1.2.2 Ease of doing business.....              | 72.83     | 49   |
| 1.2.3 Cluster development.....                 | 59.24     | 30   |
| 1.2.4 R&D expenditure.....                     | 100.00    | 1    |
| 1.2.5 ICT infrastructure.....                  | 82.57     | 17   |
| 1.2.6 Technology utilisation.....              | 91.58     | 8    |
| 1.3 Business and Labour Landscape.....         | 78.90     | 15   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 89.00     | 27   |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 63.41     | 30   |
| 1.3.4 Labour-employer cooperation.....         | 66.97     | 24   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 79.55     | 19   |
| 1.3.6 Relationship of pay to productivity..... | 74.45     | 17   |
| <b>2 ATTRACT.....46.77</b>                     | <b>49</b> |      |
| 2.1 External Openness.....                     | 55.71     | 24   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 86.16     | 6    |
| 2.1.2 Prevalence of foreign ownership.....     | 74.99     | 30   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 48.63     | 14   |
| 2.1.4 International students.....              | 13.88     | 59   |
| 2.1.5 Brain gain.....                          | 54.88     | 35   |
| 2.2 Internal Openness.....                     | 37.83     | 109  |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 0.00      | 125  |
| 2.2.2 Tolerance of immigrants.....             | 18.92     | 110  |
| 2.2.3 Social mobility.....                     | 67.64     | 28   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | n/a       | n/a  |
| 2.2.5 Gender earnings gap.....                 | 51.61     | 68   |
| 2.2.6 Leadership opportunities for women.....  | 50.99     | 46   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>38,412.68</b> |
| GDP (US\$ billions).....               | <b>350.85</b>    |
| GTCI score.....                        | <b>63.26</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....58.49</b>                         | <b>21</b> |      |
| 3.1 Formal Education.....                       | 43.80     | 35   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 41.22     | 34   |
| 3.1.2 Tertiary enrolment.....                   | 52.35     | 33   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 19.98     | 64   |
| 3.1.4 Reading, maths, and science.....          | 62.42     | 36   |
| 3.1.5 University ranking.....                   | 43.02     | 26   |
| 3.2 Lifelong Learning.....                      | 54.19     | 34   |
| 3.2.1 Quality of management schools.....        | 73.77     | 17   |
| 3.2.2 Prevalence of training in firms.....      | 20.05     | 74   |
| 3.2.3 Employee development.....                 | 68.74     | 22   |
| 3.3 Access to Growth Opportunities.....         | 77.49     | 14   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 72.35     | 23   |
| 3.3.2 Personal rights.....                      | 75.70     | 37   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 96.54     | 4    |
| 3.3.4 Use of virtual professional networks..... | 47.02     | 19   |
| 3.3.5 Collaboration within organisations.....   | 89.45     | 7    |
| 3.3.6 Collaboration across organisations.....   | 83.87     | 7    |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....76.29</b>            | <b>19</b> |    |
| 4.1 Sustainability.....              | 73.64     | 19 |
| 4.1.1 Pension system.....            | 88.88     | 20 |
| 4.1.2 Social protection.....         | 59.85     | 32 |
| 4.1.3 Brain retention.....           | 72.19     | 18 |
| 4.2 Lifestyle.....                   | 78.94     | 21 |
| 4.2.1 Environmental performance..... | 79.31     | 19 |
| 4.2.2 Personal safety.....           | 79.41     | 37 |
| 4.2.3 Physician density.....         | 57.05     | 20 |
| 4.2.4 Sanitation.....                | 100.00    | 1  |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....63.52</b>      | <b>17</b> |    |
| 5.1 Mid-Level Skills.....                               | 51.14     | 35 |
| 5.1.1 Workforce with secondary education.....           | 56.52     | 39 |
| 5.1.2 Population with secondary education.....          | 48.79     | 36 |
| 5.1.3 Technicians and associate professionals.....      | 57.59     | 27 |
| 5.1.4 Labour productivity per employee.....             | 41.67     | 29 |
| 5.2 Employability.....                                  | 75.90     | 15 |
| 5.2.1 Ease of finding skilled employees.....            | 94.72     | 4  |
| 5.2.2 Relevance of education system to the economy..... | 60.75     | 24 |
| 5.2.3 Skills matching with secondary education.....     | 68.44     | 19 |
| 5.2.4 Skills matching with tertiary education.....      | 79.69     | 17 |

|                                                     |          |    |
|-----------------------------------------------------|----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....60.08</b>          | <b>6</b> |    |
| 6.1 High-Level Skills.....                          | 76.51    | 1  |
| 6.1.1 Workforce with tertiary education.....        | 70.34    | 6  |
| 6.1.2 Population with tertiary education.....       | 77.93    | 4  |
| 6.1.3 Professionals.....                            | 69.10    | 7  |
| 6.1.4 Researchers.....                              | 100.00   | 1  |
| 6.1.5 Senior officials and managers.....            | 61.90    | 10 |
| 6.1.6 Availability of scientists and engineers..... | 79.79    | 6  |
| 6.2 Talent Impact.....                              | 43.64    | 21 |
| 6.2.1 Innovation output.....                        | 72.48    | 11 |
| 6.2.2 High-value exports.....                       | 33.35    | 19 |
| 6.2.3 New product entrepreneurial activity.....     | 41.18    | 37 |
| 6.2.4 New business density.....                     | 16.53    | 34 |
| 6.2.5 Scientific journal articles.....              | 54.68    | 18 |

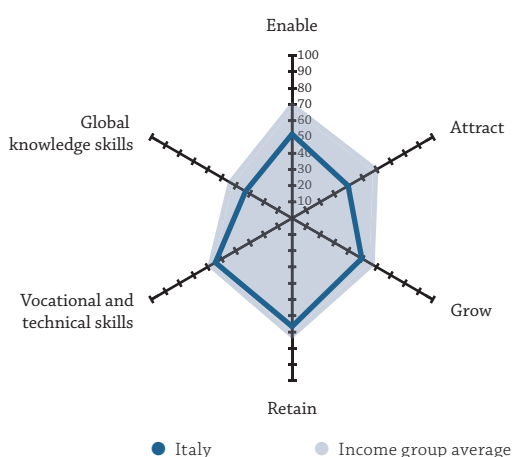
# ITALY

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>38</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>60.55</b>       |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>39,817.15</b> |
| GDP (US\$ billions) .....               | <b>1,934.80</b>  |
| GTCI score.....                         | <b>49.21</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....51.73</b>                      | <b>53</b> |      |
| 1.1 Regulatory Landscape.....                  | 52.45     | 55   |
| 1.1.1 Government effectiveness .....           | 58.06     | 41   |
| 1.1.2 Business-government relations .....      | 20.09     | 122  |
| 1.1.3 Political stability .....                | 72.69     | 46   |
| 1.1.4 Regulatory quality.....                  | 64.83     | 37   |
| 1.1.5 Corruption .....                         | 46.58     | 44   |
| 1.2 Market Landscape.....                      | 64.83     | 30   |
| 1.2.1 Competition intensity .....              | 71.23     | 56   |
| 1.2.2 Ease of doing business .....             | 75.13     | 41   |
| 1.2.3 Cluster development .....                | 88.51     | 6    |
| 1.2.4 R&D expenditure .....                    | 30.00     | 24   |
| 1.2.5 ICT infrastructure.....                  | 71.88     | 40   |
| 1.2.6 Technology utilisation.....              | 52.26     | 57   |
| 1.3 Business and Labour Landscape.....         | 37.90     | 105  |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring .....                     | 72.33     | 50   |
| 1.3.2 Ease of redundancy .....                 | 37.50     | 104  |
| 1.3.3 Active labour market policies.....       | 29.54     | 87   |
| 1.3.4 Labour-employer cooperation .....        | 29.09     | 94   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 35.13     | 90   |
| 1.3.6 Relationship of pay to productivity..... | 23.80     | 118  |
| <b>2 ATTRACT.....39.83</b>                     | <b>84</b> |      |
| 2.1 External Openness .....                    | 32.42     | 82   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 47.27     | 89   |
| 2.1.2 Prevalence of foreign ownership .....    | 41.40     | 103  |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 20.44     | 40   |
| 2.1.4 International students.....              | 24.85     | 36   |
| 2.1.5 Brain gain.....                          | 28.16     | 95   |
| 2.2 Internal Openness.....                     | 47.24     | 71   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities .....            | 56.47     | 39   |
| 2.2.2 Tolerance of immigrants.....             | 62.16     | 52   |
| 2.2.3 Social mobility.....                     | 40.31     | 89   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates .....                   | 77.92     | 41   |
| 2.2.5 Gender earnings gap.....                 | 42.41     | 89   |
| 2.2.6 Leadership opportunities for women.....  | 4.16      | 122  |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....49.50</b>                         | <b>35</b> |      |
| 3.1 Formal Education.....                       | 51.55     | 22   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment .....                | 71.65     | 13   |
| 3.1.2 Tertiary enrolment.....                   | 51.29     | 36   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 18.08     | 70   |
| 3.1.4 Reading, maths, and science .....         | 68.67     | 30   |
| 3.1.5 University ranking .....                  | 48.06     | 19   |
| 3.2 Lifelong Learning.....                      | 48.84     | 43   |
| 3.2.1 Quality of management schools.....        | 70.12     | 25   |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 27.57     | 91   |
| 3.3 Access to Growth Opportunities .....        | 48.10     | 44   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 28.58     | 108  |
| 3.3.2 Personal rights.....                      | 77.96     | 33   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 80.70     | 38   |
| 3.3.4 Use of virtual professional networks..... | 43.09     | 23   |
| 3.3.5 Collaboration within organisations .....  | 27.34     | 85   |
| 3.3.6 Collaboration across organisations .....  | 30.92     | 69   |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....66.61</b>            | <b>30</b> |    |
| 4.1 Sustainability .....             | 55.66     | 35 |
| 4.1.1 Pension system.....            | 89.80     | 18 |
| 4.1.2 Social protection .....        | 48.69     | 43 |
| 4.1.3 Brain retention .....          | 28.48     | 99 |
| 4.2 Lifestyle .....                  | 77.56     | 25 |
| 4.2.1 Environmental performance..... | 82.56     | 16 |
| 4.2.2 Personal safety .....          | 64.58     | 60 |
| 4.2.3 Physician density .....        | 64.18     | 10 |
| 4.2.4 Sanitation .....               | 98.92     | 21 |

|                                                          |           |    |
|----------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....54.50</b>       | <b>30</b> |    |
| 5.1 Mid-Level Skills .....                               | 59.60     | 22 |
| 5.1.1 Workforce with secondary education .....           | 62.31     | 29 |
| 5.1.2 Population with secondary education .....          | 48.64     | 37 |
| 5.1.3 Technicians and associate professionals .....      | 77.23     | 11 |
| 5.1.4 Labour productivity per employee.....              | 50.23     | 21 |
| 5.2 Employability.....                                   | 49.40     | 46 |
| 5.2.1 Ease of finding skilled employees .....            | 63.90     | 36 |
| 5.2.2 Relevance of education system to the economy ..... | 37.35     | 61 |
| 5.2.3 Skills matching with secondary education.....      | 46.96     | 54 |
| 5.2.4 Skills matching with tertiary education .....      | 49.40     | 58 |

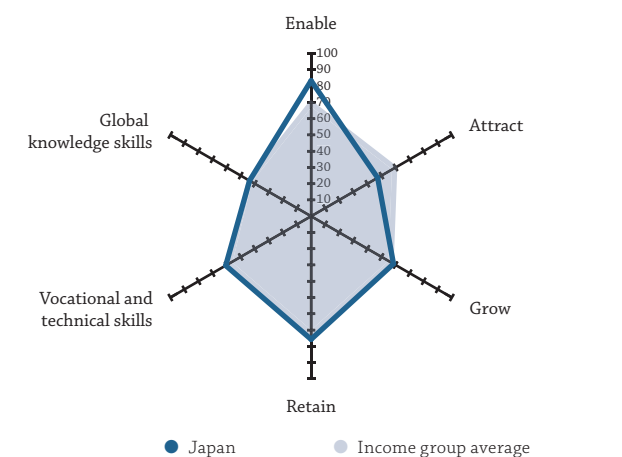
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|------------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....33.08</b>          | <b>39</b> |    |
| 6.1 High-Level Skills .....                          | 32.68     | 51 |
| 6.1.1 Workforce with tertiary education .....        | 30.35     | 62 |
| 6.1.2 Population with tertiary education .....       | 22.58     | 66 |
| 6.1.3 Professionals.....                             | 39.89     | 43 |
| 6.1.4 Researchers.....                               | 25.77     | 38 |
| 6.1.5 Senior officials and managers .....            | 21.43     | 62 |
| 6.1.6 Availability of scientists and engineers ..... | 56.07     | 34 |
| 6.2 Talent Impact.....                               | 33.49     | 34 |
| 6.2.1 Innovation output.....                         | 51.29     | 31 |
| 6.2.2 High-value exports .....                       | 13.58     | 56 |
| 6.2.3 New product entrepreneurial activity .....     | 44.11     | 32 |
| 6.2.4 New business density .....                     | 12.72     | 39 |
| 6.2.5 Scientific journal articles.....               | 45.72     | 24 |

# JAPAN

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>22</b>                                     |
| Income group.....          | <b>High income</b>                            |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>126.79</b>                                 |

GTCI 2019 Country Profile by Pillar



|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>1 ENABLE.....83.37 6</b>                            |       |      |
| 1.1 Regulatory Landscape.....83.72 13                  |       |      |
| 1.1.1 Government effectiveness.....90.57 8             |       |      |
| 1.1.2 Business-government relations.....79.91 16       |       |      |
| 1.1.3 Political stability.....87.96 14                 |       |      |
| 1.1.4 Regulatory quality.....82.06 18                  |       |      |
| 1.1.5 Corruption.....78.08 19                          |       |      |
| 1.2 Market Landscape.....85.19 5                       |       |      |
| 1.2.1 Competition intensity.....100.00 1               |       |      |
| 1.2.2 Ease of doing business.....80.48 31              |       |      |
| 1.2.3 Cluster development.....82.35 9                  |       |      |
| 1.2.4 R&D expenditure.....73.92 5                      |       |      |
| 1.2.5 ICT infrastructure.....90.59 8                   |       |      |
| 1.2.6 Technology utilisation.....83.78 15              |       |      |
| 1.3 Business and Labour Landscape.....81.22 12         |       |      |
| Labour Market                                          |       |      |
| 1.3.1 Ease of hiring.....89.00 27                      |       |      |
| 1.3.2 Ease of redundancy.....100.00 1                  |       |      |
| 1.3.3 Active labour market policies.....66.19 27       |       |      |
| 1.3.4 Labour-employer cooperation.....85.47 7          |       |      |
| Management Practice                                    |       |      |
| 1.3.5 Professional management.....82.85 16             |       |      |
| 1.3.6 Relationship of pay to productivity.....63.81 37 |       |      |
| <b>2 ATTRACT.....47.30 45</b>                          |       |      |
| 2.1 External Openness.....43.75 43                     |       |      |
| Attract Business                                       |       |      |
| 2.1.1 FDI and technology transfer.....74.69 24         |       |      |
| 2.1.2 Prevalence of foreign ownership.....82.44 19     |       |      |
| Attract People                                         |       |      |
| 2.1.3 Migrant stock.....3.62 86                        |       |      |
| 2.1.4 International students.....17.18 53              |       |      |
| 2.1.5 Brain gain.....40.82 68                          |       |      |
| 2.2 Internal Openness.....50.86 56                     |       |      |
| Social Inclusion                                       |       |      |
| 2.2.1 Tolerance of minorities.....69.41 19             |       |      |
| 2.2.2 Tolerance of immigrants.....43.24 84             |       |      |
| 2.2.3 Social mobility.....71.45 26                     |       |      |
| Gender Equality                                        |       |      |
| 2.2.4 Female graduates.....53.60 82                    |       |      |
| 2.2.5 Gender earnings gap.....43.13 86                 |       |      |
| 2.2.6 Leadership opportunities for women.....24.30 99  |       |      |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>43,875.75</b> |
| GDP (US\$ billions).....               | <b>4,872.14</b>  |
| GTCI score.....                        | <b>61.56</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW.....58.55 20</b>                              |       |      |
| 3.1 Formal Education.....52.33 20                       |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment.....24.02 60                 |       |      |
| 3.1.2 Tertiary enrolment.....51.59 34                   |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure.....16.79 74       |       |      |
| 3.1.4 Reading, maths, and science.....89.33 2           |       |      |
| 3.1.5 University ranking.....79.94 7                    |       |      |
| 3.2 Lifelong Learning.....63.12 24                      |       |      |
| 3.2.1 Quality of management schools.....44.75 55        |       |      |
| 3.2.2 Prevalence of training in firms.....n/a n/a       |       |      |
| 3.2.3 Employee development.....81.50 12                 |       |      |
| 3.3 Access to Growth Opportunities.....60.18 26         |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority.....61.32 28              |       |      |
| 3.3.2 Personal rights.....85.21 26                      |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks.....80.90 37       |       |      |
| 3.3.4 Use of virtual professional networks.....2.41 103 |       |      |
| 3.3.5 Collaboration within organisations.....75.16 18   |       |      |
| 3.3.6 Collaboration across organisations.....56.09 25   |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....75.74 20</b>                 |  |  |
| 4.1 Sustainability.....73.33 21              |  |  |
| 4.1.1 Pension system.....94.90 3             |  |  |
| 4.1.2 Social protection.....72.47 21         |  |  |
| 4.1.3 Brain retention.....52.62 42           |  |  |
| 4.2 Lifestyle.....78.16 23                   |  |  |
| 4.2.1 Environmental performance.....78.78 20 |  |  |
| 4.2.2 Personal safety.....96.19 12           |  |  |
| 4.2.3 Physician density.....37.66 51         |  |  |
| 4.2.4 Sanitation.....100.00 1                |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....60.66 23</b>           |  |  |
| 5.1 Mid-Level Skills.....67.46 9                                |  |  |
| 5.1.1 Workforce with secondary education.....69.11 24           |  |  |
| 5.1.2 Population with secondary education.....56.78 26          |  |  |
| 5.1.3 Technicians and associate professionals.....100.00 1      |  |  |
| 5.1.4 Labour productivity per employee.....43.97 27             |  |  |
| 5.2 Employability.....53.86 38                                  |  |  |
| 5.2.1 Ease of finding skilled employees.....61.33 40            |  |  |
| 5.2.2 Relevance of education system to the economy.....54.33 34 |  |  |
| 5.2.3 Skills matching with secondary education.....48.01 47     |  |  |
| 5.2.4 Skills matching with tertiary education.....51.78 50      |  |  |

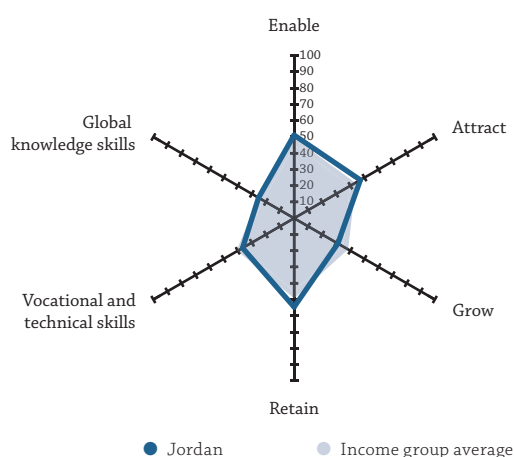
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|------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....43.74 26</b>              |  |  |
| 6.1 High-Level Skills.....55.55 18                         |  |  |
| 6.1.1 Workforce with tertiary education.....73.98 5        |  |  |
| 6.1.2 Population with tertiary education.....48.90 26      |  |  |
| 6.1.3 Professionals.....n/a n/a                            |  |  |
| 6.1.4 Researchers.....63.12 11                             |  |  |
| 6.1.5 Senior officials and managers.....12.50 79           |  |  |
| 6.1.6 Availability of scientists and engineers.....79.26 8 |  |  |
| 6.2 Talent Impact.....31.93 36                             |  |  |
| 6.2.1 Innovation output.....61.78 18                       |  |  |
| 6.2.2 High-value exports.....29.43 26                      |  |  |
| 6.2.3 New product entrepreneurial activity.....37.27 46    |  |  |
| 6.2.4 New business density.....0.67 91                     |  |  |
| 6.2.5 Scientific journal articles.....30.48 34             |  |  |

# JORDAN

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>57</b>                               |
| Income group.....          | <b>Upper-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>9.70</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....51.13 55</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 51.08 | 57   |
| 1.1.1 Government effectiveness.....            | 48.64 | 60   |
| 1.1.2 Business-government relations.....       | 61.59 | 52   |
| 1.1.3 Political stability.....                 | 52.31 | 89   |
| 1.1.4 Regulatory quality.....                  | 49.04 | 67   |
| 1.1.5 Corruption.....                          | 43.84 | 49   |
| 1.2 Market Landscape.....                      | 53.15 | 49   |
| 1.2.1 Competition intensity.....               | 79.26 | 23   |
| 1.2.2 Ease of doing business.....              | 53.36 | 87   |
| 1.2.3 Cluster development.....                 | 59.94 | 28   |
| 1.2.4 R&D expenditure.....                     | 7.48  | 73   |
| 1.2.5 ICT infrastructure.....                  | 55.34 | 68   |
| 1.2.6 Technology utilisation.....              | 63.52 | 41   |
| 1.3 Business and Labour Landscape.....         | 49.14 | 73   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 77.67 | 46   |
| 1.3.2 Ease of redundancy.....                  | 25.00 | 109  |
| 1.3.3 Active labour market policies.....       | 41.37 | 65   |
| 1.3.4 Labour-employer cooperation.....         | 54.31 | 36   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 39.61 | 80   |
| 1.3.6 Relationship of pay to productivity..... | 56.91 | 49   |
| <b>2 ATTRACT.....47.06 48</b>                  |       |      |
| 2.1 External Openness.....                     | 59.57 | 18   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 59.94 | 53   |
| 2.1.2 Prevalence of foreign ownership.....     | 55.05 | 75   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 68.79 | 9    |
| 2.1.4 International students.....              | 75.07 | 11   |
| 2.1.5 Brain gain.....                          | 39.01 | 73   |
| 2.2 Internal Openness.....                     | 34.56 | 117  |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 24.71 | 93   |
| 2.2.2 Tolerance of immigrants.....             | 45.95 | 80   |
| 2.2.3 Social mobility.....                     | 45.19 | 77   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 46.91 | 90   |
| 2.2.5 Gender earnings gap.....                 | 0.00  | 121  |
| 2.2.6 Leadership opportunities for women.....  | 44.58 | 56   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>9,153.35</b> |
| GDP (US\$ billions).....               | <b>40.07</b>    |
| GTCI score.....                        | <b>40.96</b>    |
| GTCI score (income group average)..... | <b>39.16</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....31.11 82</b>                      |       |      |
| 3.1 Formal Education.....                       | 20.02 | 78   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 7.80  | 94   |
| 3.1.2 Tertiary enrolment.....                   | 29.31 | 70   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 17.56 | 72   |
| 3.1.4 Reading, maths, and science.....          | 28.21 | 60   |
| 3.1.5 University ranking.....                   | 17.23 | 58   |
| 3.2 Lifelong Learning.....                      | 29.90 | 99   |
| 3.2.1 Quality of management schools.....        | 44.96 | 54   |
| 3.2.2 Prevalence of training in firms.....      | 0.00  | 90   |
| 3.2.3 Employee development.....                 | 44.73 | 52   |
| 3.3 Access to Growth Opportunities.....         | 43.43 | 54   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 35.93 | 85   |
| 3.3.2 Personal rights.....                      | 35.50 | 92   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 84.01 | 27   |
| 3.3.4 Use of virtual professional networks..... | 23.67 | 44   |
| 3.3.5 Collaboration within organisations.....   | 37.89 | 58   |
| 3.3.6 Collaboration across organisations.....   | 43.56 | 36   |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN.....54.61 53</b>         |       |    |
| 4.1 Sustainability.....              | 41.82 | 63 |
| 4.1.1 Pension system.....            | 36.73 | 56 |
| 4.1.2 Social protection.....         | 47.37 | 48 |
| 4.1.3 Brain retention.....           | 41.35 | 65 |
| 4.2 Lifestyle.....                   | 67.41 | 44 |
| 4.2.1 Environmental performance..... | 57.96 | 55 |
| 4.2.2 Personal safety.....           | 60.26 | 69 |
| 4.2.3 Physician density.....         | 54.64 | 25 |
| 4.2.4 Sanitation.....                | 96.77 | 44 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....36.58 70</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 21.39 | 93  |
| 5.1.1 Workforce with secondary education.....           | n/a   | n/a |
| 5.1.2 Population with secondary education.....          | 20.11 | 83  |
| 5.1.3 Technicians and associate professionals.....      | n/a   | n/a |
| 5.1.4 Labour productivity per employee.....             | 22.67 | 60  |
| 5.2 Employability.....                                  | 51.76 | 42  |
| 5.2.1 Ease of finding skilled employees.....            | 64.61 | 35  |
| 5.2.2 Relevance of education system to the economy..... | 50.43 | 41  |
| 5.2.3 Skills matching with secondary education.....     | 44.72 | 57  |
| 5.2.4 Skills matching with tertiary education.....      | 47.27 | 64  |

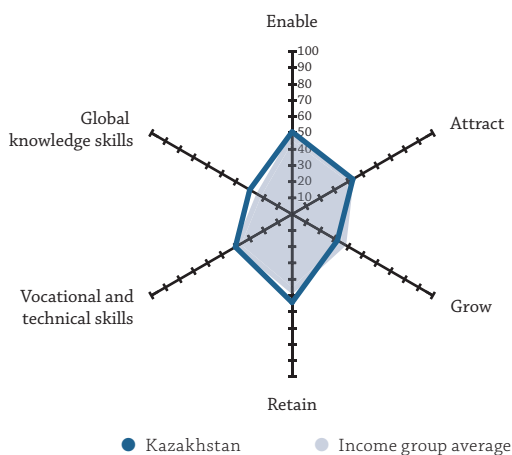
|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....25.27 61</b>       |       |     |
| 6.1 High-Level Skills.....                          | 35.27 | 47  |
| 6.1.1 Workforce with tertiary education.....        | n/a   | n/a |
| 6.1.2 Population with tertiary education.....       | 25.64 | 61  |
| 6.1.3 Professionals.....                            | n/a   | n/a |
| 6.1.4 Researchers.....                              | 7.17  | 61  |
| 6.1.5 Senior officials and managers.....            | n/a   | n/a |
| 6.1.6 Availability of scientists and engineers..... | 73.01 | 13  |
| 6.2 Talent Impact.....                              | 15.27 | 77  |
| 6.2.1 Innovation output.....                        | 27.50 | 66  |
| 6.2.2 High-value exports.....                       | 3.48  | 100 |
| 6.2.3 New product entrepreneurial activity.....     | 35.76 | 47  |
| 6.2.4 New business density.....                     | 2.84  | 77  |
| 6.2.5 Scientific journal articles.....              | 6.79  | 61  |

# KAZAKHSTAN

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>56</b>                        |
| Income group.....          | <b>Upper-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>18.04</b>                     |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 50.69 57</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 47.71  | 68   |
| 1.1.1 Government effectiveness.....            | 43.67  | 72   |
| 1.1.2 Business-government relations.....       | 63.36  | 42   |
| 1.1.3 Political stability.....                 | 65.51  | 62   |
| 1.1.4 Regulatory quality.....                  | 45.45  | 72   |
| 1.1.5 Corruption.....                          | 20.55  | 92   |
| 1.2 Market Landscape.....                      | 44.37  | 73   |
| 1.2.1 Competition intensity.....               | 50.93  | 107  |
| 1.2.2 Ease of doing business.....              | 80.05  | 33   |
| 1.2.3 Cluster development.....                 | 12.67  | 116  |
| 1.2.4 R&D expenditure.....                     | 2.99   | 91   |
| 1.2.5 ICT infrastructure.....                  | 74.68  | 36   |
| 1.2.6 Technology utilisation.....              | 44.93  | 75   |
| 1.3 Business and Labour Landscape.....         | 60.00  | 37   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 75.00  | 45   |
| 1.3.3 Active labour market policies.....       | 54.86  | 41   |
| 1.3.4 Labour-employer cooperation.....         | 41.04  | 64   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 31.37  | 100  |
| 1.3.6 Relationship of pay to productivity..... | 57.71  | 47   |
| <b>2 ATTRACT..... 43.15 63</b>                 |        |      |
| 2.1 External Openness.....                     | 37.33  | 70   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 47.48  | 87   |
| 2.1.2 Prevalence of foreign ownership.....     | 41.85  | 102  |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 41.16  | 17   |
| 2.1.4 International students.....              | 11.02  | 63   |
| 2.1.5 Brain gain.....                          | 45.16  | 55   |
| 2.2 Internal Openness.....                     | 48.96  | 67   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 29.41  | 82   |
| 2.2.2 Tolerance of immigrants.....             | 33.78  | 97   |
| 2.2.3 Social mobility.....                     | 51.46  | 58   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 70.34  | 65   |
| 2.2.5 Gender earnings gap.....                 | 51.49  | 69   |
| 2.2.6 Leadership opportunities for women.....  | 57.26  | 35   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>26,409.54</b> |
| GDP (US\$ billions).....               | <b>159.41</b>    |
| GTCI score.....                        | <b>41.79</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 32.20 78</b>                     |       |      |
| 3.1 Formal Education.....                       | 30.67 | 58   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 22.86 | 61   |
| 3.1.2 Tertiary enrolment.....                   | 40.30 | 52   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 7.03  | 102  |
| 3.1.4 Reading, maths, and science.....          | 51.17 | 40   |
| 3.1.5 University ranking.....                   | 31.98 | 35   |
| 3.2 Lifelong Learning.....                      | 33.62 | 85   |
| 3.2.1 Quality of management schools.....        | 29.86 | 94   |
| 3.2.2 Prevalence of training in firms.....      | 32.85 | 52   |
| 3.2.3 Employee development.....                 | 38.15 | 64   |
| 3.3 Access to Growth Opportunities.....         | 32.32 | 99   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 44.24 | 67   |
| 3.3.2 Personal rights.....                      | 15.43 | 111  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 56.38 | 98   |
| 3.3.4 Use of virtual professional networks..... | 6.02  | 89   |
| 3.3.5 Collaboration within organisations.....   | 36.57 | 61   |
| 3.3.6 Collaboration across organisations.....   | 35.25 | 54   |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 54.29 54</b>        |       |    |
| 4.1 Sustainability.....              | 44.95 | 57 |
| 4.1.1 Pension system.....            | 62.24 | 41 |
| 4.1.2 Social protection.....         | 35.55 | 72 |
| 4.1.3 Brain retention.....           | 37.05 | 77 |
| 4.2 Lifestyle.....                   | 63.63 | 53 |
| 4.2.1 Environmental performance..... | 45.22 | 82 |
| 4.2.2 Personal safety.....           | 59.23 | 71 |
| 4.2.3 Physician density.....         | 52.20 | 27 |
| 4.2.4 Sanitation.....                | 97.85 | 37 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 40.30 56</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 43.86 | 54  |
| 5.1.1 Workforce with secondary education.....           | 52.78 | 45  |
| 5.1.2 Population with secondary education.....          | 43.22 | 45  |
| 5.1.3 Technicians and associate professionals.....      | 49.55 | 41  |
| 5.1.4 Labour productivity per employee.....             | 29.87 | 50  |
| 5.2 Employability.....                                  | 36.74 | 76  |
| 5.2.1 Ease of finding skilled employees.....            | 44.35 | 67  |
| 5.2.2 Relevance of education system to the economy..... | 32.95 | 71  |
| 5.2.3 Skills matching with secondary education.....     | 42.06 | 63  |
| 5.2.4 Skills matching with tertiary education.....      | 27.62 | 106 |

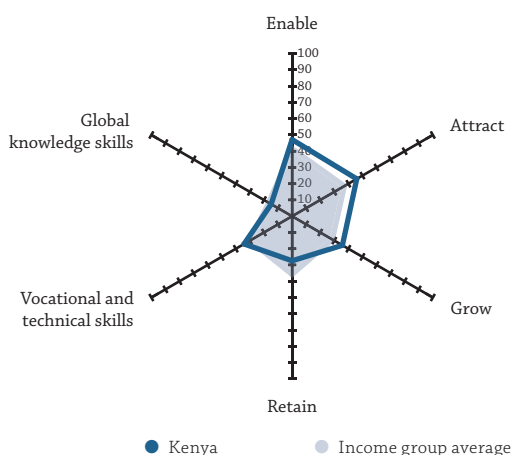
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|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 30.09 50</b>      |       |    |
| 6.1 High-Level Skills.....                          | 35.46 | 46 |
| 6.1.1 Workforce with tertiary education.....        | 53.54 | 25 |
| 6.1.2 Population with tertiary education.....       | 36.67 | 39 |
| 6.1.3 Professionals.....                            | 45.51 | 35 |
| 6.1.4 Researchers.....                              | 8.25  | 55 |
| 6.1.5 Senior officials and managers.....            | 29.76 | 43 |
| 6.1.6 Availability of scientists and engineers..... | 39.05 | 64 |
| 6.2 Talent Impact.....                              | 24.72 | 50 |
| 6.2.1 Innovation output.....                        | 19.21 | 89 |
| 6.2.2 High-value exports.....                       | 55.15 | 5  |
| 6.2.3 New product entrepreneurial activity.....     | 35.07 | 49 |
| 6.2.4 New business density.....                     | 10.75 | 45 |
| 6.2.5 Scientific journal articles.....              | 3.44  | 75 |

## KENYA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>85</b>                  |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>49.70</b>               |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....47.15 75</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 37.90 | 99   |
| 1.1.1 Government effectiveness.....            | 37.47 | 88   |
| 1.1.2 Business-government relations.....       | 61.15 | 55   |
| 1.1.3 Political stability.....                 | 33.80 | 114  |
| 1.1.4 Regulatory quality.....                  | 40.67 | 86   |
| 1.1.5 Corruption.....                          | 16.44 | 109  |
| 1.2 Market Landscape.....                      | 50.93 | 57   |
| 1.2.1 Competition intensity.....               | 78.37 | 29   |
| 1.2.2 Ease of doing business.....              | 61.57 | 72   |
| 1.2.3 Cluster development.....                 | 53.71 | 35   |
| 1.2.4 R&D expenditure.....                     | 18.20 | 44   |
| 1.2.5 ICT infrastructure.....                  | 24.81 | 102  |
| 1.2.6 Technology utilisation.....              | 68.93 | 34   |
| 1.3 Business and Labour Landscape.....         | 52.63 | 62   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 66.67 | 58   |
| 1.3.2 Ease of redundancy.....                  | 62.50 | 64   |
| 1.3.3 Active labour market policies.....       | 36.72 | 73   |
| 1.3.4 Labour-employer cooperation.....         | 40.43 | 65   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 51.89 | 56   |
| 1.3.6 Relationship of pay to productivity..... | 57.55 | 48   |
| <b>2 ATTRACT.....45.94 54</b>                  |       |      |
| 2.1 External Openness.....                     | 48.23 | 34   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 67.15 | 39   |
| 2.1.2 Prevalence of foreign ownership.....     | 65.97 | 48   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 4.34  | 81   |
| 2.1.4 International students.....              | n/a   | n/a  |
| 2.1.5 Brain gain.....                          | 55.46 | 33   |
| 2.2 Internal Openness.....                     | 43.65 | 92   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 8.24  | 116  |
| 2.2.2 Tolerance of immigrants.....             | 64.86 | 49   |
| 2.2.3 Social mobility.....                     | 54.73 | 46   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap.....                 | 57.71 | 48   |
| 2.2.6 Leadership opportunities for women.....  | 32.69 | 82   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>3,285.91</b> |
| GDP (US\$ billions).....               | <b>74.94</b>    |
| GTCI score.....                        | <b>34.21</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....35.75 70</b>                      |       |      |
| 3.1 Formal Education.....                       | 6.63  | 116  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 0.94  | 110  |
| 3.1.2 Tertiary enrolment.....                   | 2.70  | 114  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 15.41 | 80   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 7.47  | 77   |
| 3.2 Lifelong Learning.....                      | 51.76 | 37   |
| 3.2.1 Quality of management schools.....        | 56.19 | 34   |
| 3.2.2 Prevalence of training in firms.....      | 49.08 | 31   |
| 3.2.3 Employee development.....                 | 50.00 | 40   |
| 3.3 Access to Growth Opportunities.....         | 48.86 | 40   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 59.21 | 32   |
| 3.3.2 Personal rights.....                      | 45.21 | 81   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 79.40 | 39   |
| 3.3.4 Use of virtual professional networks..... | 7.52  | 84   |
| 3.3.5 Collaboration within organisations.....   | 52.66 | 31   |
| 3.3.6 Collaboration across organisations.....   | 49.15 | 28   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....27.42 110</b>        |       |     |
| 4.1 Sustainability.....              | 31.85 | 83  |
| 4.1.1 Pension system.....            | 6.12  | 93  |
| 4.1.2 Social protection.....         | 35.27 | 73  |
| 4.1.3 Brain retention.....           | 54.17 | 37  |
| 4.2 Lifestyle.....                   | 22.98 | 119 |
| 4.2.1 Environmental performance..... | 33.04 | 100 |
| 4.2.2 Personal safety.....           | 31.17 | 112 |
| 4.2.3 Physician density.....         | 2.98  | 105 |
| 4.2.4 Sanitation.....                | 24.73 | 117 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....34.11 76</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 11.60 | 107 |
| 5.1.1 Workforce with secondary education.....           | n/a   | n/a |
| 5.1.2 Population with secondary education.....          | 19.69 | 84  |
| 5.1.3 Technicians and associate professionals.....      | n/a   | n/a |
| 5.1.4 Labour productivity per employee.....             | 3.51  | 93  |
| 5.2 Employability.....                                  | 56.62 | 35  |
| 5.2.1 Ease of finding skilled employees.....            | 72.16 | 24  |
| 5.2.2 Relevance of education system to the economy..... | 57.74 | 27  |
| 5.2.3 Skills matching with secondary education.....     | 40.15 | 67  |
| 5.2.4 Skills matching with tertiary education.....      | 56.45 | 39  |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....14.87 91</b>       |       |     |
| 6.1 High-Level Skills.....                          | 19.49 | 83  |
| 6.1.1 Workforce with tertiary education.....        | n/a   | n/a |
| 6.1.2 Population with tertiary education.....       | 1.87  | 98  |
| 6.1.3 Professionals.....                            | n/a   | n/a |
| 6.1.4 Researchers.....                              | 2.64  | 73  |
| 6.1.5 Senior officials and managers.....            | n/a   | n/a |
| 6.1.6 Availability of scientists and engineers..... | 53.97 | 39  |
| 6.2 Talent Impact.....                              | 10.24 | 91  |
| 6.2.1 Innovation output.....                        | 29.38 | 63  |
| 6.2.2 High-value exports.....                       | 6.82  | 80  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 4.00  | 72  |
| 6.2.5 Scientific journal articles.....              | 0.76  | 97  |

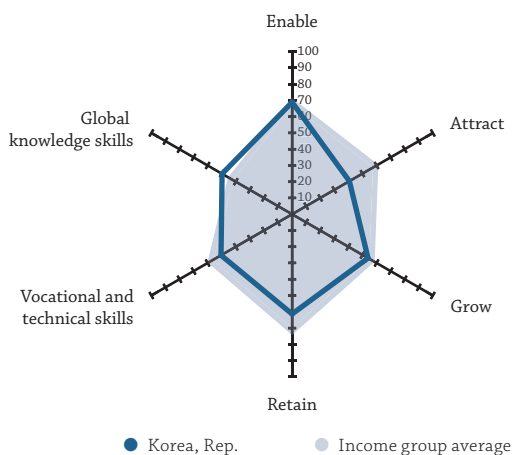


# KOREA, REP.

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>30</b>                                     |
| Income group.....          | <b>High income</b>                            |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>51.47</b>                                  |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 68.87 27</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 65.74 | 34   |
| 1.1.1 Government effectiveness.....            | 71.71 | 28   |
| 1.1.2 Business-government relations.....       | 62.03 | 48   |
| 1.1.3 Political stability.....                 | 68.52 | 56   |
| 1.1.4 Regulatory quality.....                  | 74.40 | 25   |
| 1.1.5 Corruption.....                          | 52.05 | 42   |
| 1.2 Market Landscape.....                      | 87.09 | 2    |
| 1.2.1 Competition intensity.....               | 95.01 | 3    |
| 1.2.2 Ease of doing business.....              | 95.28 | 4    |
| 1.2.3 Cluster development.....                 | 64.32 | 25   |
| 1.2.4 R&D expenditure.....                     | 99.70 | 2    |
| 1.2.5 ICT infrastructure.....                  | 91.22 | 6    |
| 1.2.6 Technology utilisation.....              | 76.99 | 23   |
| 1.3 Business and Labour Landscape.....         | 53.78 | 58   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 55.67 | 76   |
| 1.3.2 Ease of redundancy.....                  | 62.50 | 64   |
| 1.3.3 Active labour market policies.....       | 58.55 | 36   |
| 1.3.4 Labour-employer cooperation.....         | 13.76 | 120  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 56.53 | 36   |
| 1.3.6 Relationship of pay to productivity..... | 75.69 | 13   |
| <b>2 ATTRACT..... 40.71 81</b>                 |       |      |
| 2.1 External Openness.....                     | 36.17 | 74   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 60.73 | 52   |
| 2.1.2 Prevalence of foreign ownership.....     | 54.55 | 77   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 4.53  | 78   |
| 2.1.4 International students.....              | 8.28  | 71   |
| 2.1.5 Brain gain.....                          | 52.77 | 40   |
| 2.2 Internal Openness.....                     | 45.25 | 82   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 78.82 | 8    |
| 2.2.2 Tolerance of immigrants.....             | 52.70 | 67   |
| 2.2.3 Social mobility.....                     | 35.11 | 105  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 57.75 | 80   |
| 2.2.5 Gender earnings gap.....                 | 33.93 | 103  |
| 2.2.6 Leadership opportunities for women.....  | 13.19 | 117  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>38,260.18</b> |
| GDP (US\$ billions).....               | <b>1,530.75</b>  |
| GTCI score.....                        | <b>54.19</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 53.97 28</b>                     |       |      |
| 3.1 Formal Education.....                       | 55.97 | 12   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 19.63 | 68   |
| 3.1.2 Tertiary enrolment.....                   | 76.38 | 4    |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 24.29 | 53   |
| 3.1.4 Reading, maths, and science.....          | 84.71 | 6    |
| 3.1.5 University ranking.....                   | 74.82 | 8    |
| 3.2 Lifelong Learning.....                      | 46.73 | 49   |
| 3.2.1 Quality of management schools.....        | 41.44 | 65   |
| 3.2.2 Prevalence of training in firms.....      | n/a   | n/a  |
| 3.2.3 Employee development.....                 | 52.01 | 38   |
| 3.3 Access to Growth Opportunities.....         | 59.20 | 27   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 42.47 | 73   |
| 3.3.2 Personal rights.....                      | 69.21 | 44   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 81.01 | 36   |
| 3.3.4 Use of virtual professional networks..... | n/a   | n/a  |
| 3.3.5 Collaboration within organisations.....   | 49.17 | 36   |
| 3.3.6 Collaboration across organisations.....   | 54.15 | 27   |

|                                      |        |    |
|--------------------------------------|--------|----|
| <b>4 RETAIN..... 61.38 39</b>        |        |    |
| 4.1 Sustainability.....              | 51.75  | 41 |
| 4.1.1 Pension system.....            | 47.96  | 50 |
| 4.1.2 Social protection.....         | 42.06  | 56 |
| 4.1.3 Brain retention.....           | 65.23  | 28 |
| 4.2 Lifestyle.....                   | 71.00  | 42 |
| 4.2.1 Environmental performance..... | 58.13  | 53 |
| 4.2.2 Personal safety.....           | 88.87  | 22 |
| 4.2.3 Physician density.....         | 37.00  | 53 |
| 4.2.4 Sanitation.....                | 100.00 | 1  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 50.48 37</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 48.72 | 44  |
| 5.1.1 Workforce with secondary education.....           | 51.47 | 50  |
| 5.1.2 Population with secondary education.....          | 53.21 | 31  |
| 5.1.3 Technicians and associate professionals.....      | n/a   | n/a |
| 5.1.4 Labour productivity per employee.....             | 41.47 | 31  |
| 5.2 Employability.....                                  | 52.24 | 40  |
| 5.2.1 Ease of finding skilled employees.....            | 69.15 | 29  |
| 5.2.2 Relevance of education system to the economy..... | 31.50 | 75  |
| 5.2.3 Skills matching with secondary education.....     | 55.49 | 36  |
| 5.2.4 Skills matching with tertiary education.....      | 52.80 | 46  |

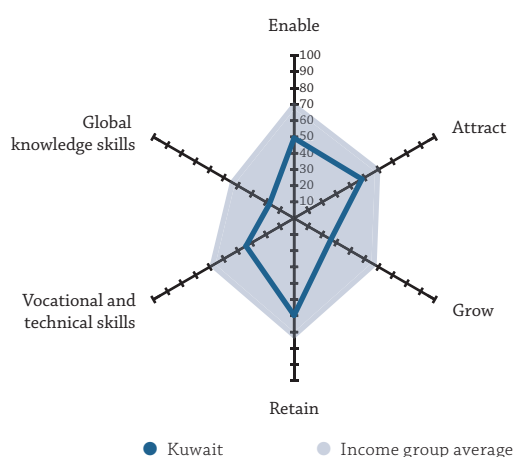
|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 49.75 20</b>      |       |    |
| 6.1 High-Level Skills.....                          | 55.30 | 19 |
| 6.1.1 Workforce with tertiary education.....        | 69.89 | 7  |
| 6.1.2 Population with tertiary education.....       | 58.23 | 10 |
| 6.1.3 Professionals.....                            | 54.78 | 18 |
| 6.1.4 Researchers.....                              | 86.20 | 4  |
| 6.1.5 Senior officials and managers.....            | 7.14  | 96 |
| 6.1.6 Availability of scientists and engineers..... | 55.58 | 36 |
| 6.2 Talent Impact.....                              | 44.20 | 20 |
| 6.2.1 Innovation output.....                        | 70.81 | 12 |
| 6.2.2 High-value exports.....                       | 48.24 | 10 |
| 6.2.3 New product entrepreneurial activity.....     | 40.50 | 39 |
| 6.2.4 New business density.....                     | 12.39 | 41 |
| 6.2.5 Scientific journal articles.....              | 49.08 | 23 |

# KUWAIT

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>64</b>                               |
| Income group.....          | <b>High income</b>                      |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>4.14</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....49.33</b>                      | <b>62</b> |      |
| 1.1 Regulatory Landscape.....                  | 43.09     | 83   |
| 1.1.1 Government effectiveness.....            | 40.69     | 79   |
| 1.1.2 Business-government relations.....       | 35.98     | 108  |
| 1.1.3 Political stability.....                 | 61.11     | 71   |
| 1.1.4 Regulatory quality.....                  | 46.17     | 69   |
| 1.1.5 Corruption.....                          | 31.51     | 68   |
| 1.2 Market Landscape.....                      | 48.12     | 63   |
| 1.2.1 Competition intensity.....               | 59.25     | 83   |
| 1.2.2 Ease of doing business.....              | 54.53     | 82   |
| 1.2.3 Cluster development.....                 | 47.97     | 45   |
| 1.2.4 R&D expenditure.....                     | 9.73      | 66   |
| 1.2.5 ICT infrastructure.....                  | 69.21     | 49   |
| 1.2.6 Technology utilisation.....              | 48.03     | 65   |
| 1.3 Business and Labour Landscape.....         | 56.78     | 45   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 41.62     | 64   |
| 1.3.4 Labour-employer cooperation.....         | 45.46     | 50   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 24.39     | 115  |
| 1.3.6 Relationship of pay to productivity..... | 29.23     | 107  |
| <b>2 ATTRACT.....48.14</b>                     | <b>43</b> |      |
| 2.1 External Openness.....                     | 45.45     | 38   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 33.31     | 114  |
| 2.1.2 Prevalence of foreign ownership.....     | 12.24     | 124  |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 100.00    | 1    |
| 2.1.4 International students.....              | n/a       | n/a  |
| 2.1.5 Brain gain.....                          | 36.25     | 82   |
| 2.2 Internal Openness.....                     | 50.84     | 57   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 54.12     | 46   |
| 2.2.2 Tolerance of immigrants.....             | 71.62     | 34   |
| 2.2.3 Social mobility.....                     | 38.36     | 96   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 76.06     | 51   |
| 2.2.5 Gender earnings gap.....                 | 31.42     | 106  |
| 2.2.6 Leadership opportunities for women.....  | 33.44     | 80   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>71,943.01</b> |
| GDP (US\$ billions).....               | <b>120.13</b>    |
| GTCI score.....                        | <b>39.17</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....26.12</b>                         | <b>99</b> |      |
| 3.1 Formal Education.....                       | 14.95     | 95   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 4.95      | 97   |
| 3.1.2 Tertiary enrolment.....                   | 26.26     | 75   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | n/a       | n/a  |
| 3.1.4 Reading, maths, and science.....          | n/a       | n/a  |
| 3.1.5 University ranking.....                   | 13.63     | 68   |
| 3.2 Lifelong Learning.....                      | 28.08     | 104  |
| 3.2.1 Quality of management schools.....        | 25.37     | 105  |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 30.79     | 80   |
| 3.3 Access to Growth Opportunities.....         | 35.32     | 86   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 31.76     | 99   |
| 3.3.2 Personal rights.....                      | 30.38     | 97   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 81.22     | 35   |
| 3.3.4 Use of virtual professional networks..... | 22.76     | 45   |
| 3.3.5 Collaboration within organisations.....   | 21.24     | 100  |
| 3.3.6 Collaboration across organisations.....   | 24.58     | 85   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....59.74</b>            | <b>43</b> |     |
| 4.1 Sustainability.....              | 48.42     | 48  |
| 4.1.1 Pension system.....            | n/a       | n/a |
| 4.1.2 Social protection.....         | 60.58     | 31  |
| 4.1.3 Brain retention.....           | 36.27     | 82  |
| 4.2 Lifestyle.....                   | 71.05     | 41  |
| 4.2.1 Environmental performance..... | 58.09     | 54  |
| 4.2.2 Personal safety.....           | 84.58     | 26  |
| 4.2.3 Physician density.....         | 41.53     | 44  |
| 4.2.4 Sanitation.....                | 100.00    | 1   |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....34.19</b>      | <b>75</b> |     |
| 5.1 Mid-Level Skills.....                               | 39.28     | 62  |
| 5.1.1 Workforce with secondary education.....           | 26.01     | 86  |
| 5.1.2 Population with secondary education.....          | 19.12     | 86  |
| 5.1.3 Technicians and associate professionals.....      | 32.14     | 66  |
| 5.1.4 Labour productivity per employee.....             | 79.87     | 4   |
| 5.2 Employability.....                                  | 29.10     | 99  |
| 5.2.1 Ease of finding skilled employees.....            | 34.37     | 91  |
| 5.2.2 Relevance of education system to the economy..... | 27.45     | 83  |
| 5.2.3 Skills matching with secondary education.....     | 25.98     | 109 |
| 5.2.4 Skills matching with tertiary education.....      | 28.61     | 102 |

|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....17.51</b>          | <b>83</b> |     |
| 6.1 High-Level Skills.....                          | 19.42     | 84  |
| 6.1.1 Workforce with tertiary education.....        | 28.68     | 68  |
| 6.1.2 Population with tertiary education.....       | 21.22     | 69  |
| 6.1.3 Professionals.....                            | 20.79     | 76  |
| 6.1.4 Researchers.....                              | 4.59      | 68  |
| 6.1.5 Senior officials and managers.....            | 13.69     | 74  |
| 6.1.6 Availability of scientists and engineers..... | 27.54     | 95  |
| 6.2 Talent Impact.....                              | 15.60     | 72  |
| 6.2.1 Innovation output.....                        | 36.23     | 48  |
| 6.2.2 High-value exports.....                       | 3.46      | 101 |
| 6.2.3 New product entrepreneurial activity.....     | n/a       | n/a |
| 6.2.4 New business density.....                     | n/a       | n/a |
| 6.2.5 Scientific journal articles.....              | 7.12      | 58  |

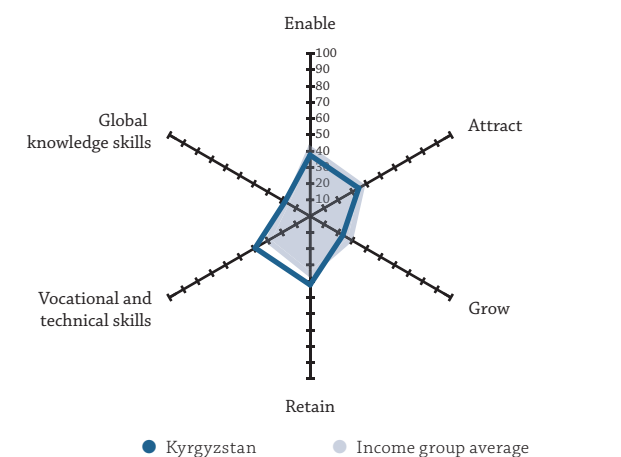


# KYRGYZSTAN

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>95</b>                        |
| Income group.....          | <b>Lower-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>6.20</b>                      |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....37.63 104</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 35.07  | 104  |
| 1.1.1 Government effectiveness.....            | 22.83  | 115  |
| 1.1.2 Business-government relations.....       | 45.92  | 91   |
| 1.1.3 Political stability.....                 | 49.31  | 94   |
| 1.1.4 Regulatory quality.....                  | 39.47  | 90   |
| 1.1.5 Corruption.....                          | 17.81  | 102  |
| 1.2 Market Landscape.....                      | 28.13  | 115  |
| 1.2.1 Competition intensity.....               | 44.53  | 116  |
| 1.2.2 Ease of doing business.....              | 62.55  | 69   |
| 1.2.3 Cluster development.....                 | 7.78   | 121  |
| 1.2.4 R&D expenditure.....                     | 2.38   | 99   |
| 1.2.5 ICT infrastructure.....                  | 36.39  | 90   |
| 1.2.6 Technology utilisation.....              | 15.14  | 119  |
| 1.3 Business and Labour Landscape.....         | 49.69  | 72   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 66.67  | 58   |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 27.95  | 90   |
| 1.3.4 Labour-employer cooperation.....         | 27.12  | 100  |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 20.58  | 122  |
| 1.3.6 Relationship of pay to productivity..... | 55.83  | 50   |
| <b>2 ATTRACT.....34.55 103</b>                 |        |      |
| 2.1 External Openness.....                     | 23.56  | 113  |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 23.47  | 121  |
| 2.1.2 Prevalence of foreign ownership.....     | 35.62  | 110  |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 6.71   | 68   |
| 2.1.4 International students.....              | 30.12  | 32   |
| 2.1.5 Brain gain.....                          | 21.87  | 110  |
| 2.2 Internal Openness.....                     | 45.55  | 80   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 14.12  | 107  |
| 2.2.2 Tolerance of immigrants.....             | 50.00  | 76   |
| 2.2.3 Social mobility.....                     | 46.05  | 74   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 76.82  | 47   |
| 2.2.5 Gender earnings gap.....                 | 40.26  | 92   |
| 2.2.6 Leadership opportunities for women.....  | 46.05  | 54   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>3,725.54</b> |
| GDP (US\$ billions).....               | <b>7.56</b>     |
| GTCI score.....                        | <b>32.43</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....23.28 109</b>                     |       |      |
| 3.1 Formal Education.....                       | 15.36 | 94   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 19.35 | 69   |
| 3.1.2 Tertiary enrolment.....                   | 37.26 | 59   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 4.82  | 110  |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 32.66 | 87   |
| 3.2.1 Quality of management schools.....        | 4.43  | 123  |
| 3.2.2 Prevalence of training in firms.....      | 78.23 | 6    |
| 3.2.3 Employee development.....                 | 15.31 | 119  |
| 3.3 Access to Growth Opportunities.....         | 21.84 | 117  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 22.96 | 115  |
| 3.3.2 Personal rights.....                      | 40.38 | 88   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 30.65 | 121  |
| 3.3.4 Use of virtual professional networks..... | 1.88  | 106  |
| 3.3.5 Collaboration within organisations.....   | 25.36 | 92   |
| 3.3.6 Collaboration across organisations.....   | 9.79  | 114  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....42.21 80</b>         |       |     |
| 4.1 Sustainability.....              | 27.45 | 97  |
| 4.1.1 Pension system.....            | 38.78 | 55  |
| 4.1.2 Social protection.....         | 24.06 | 95  |
| 4.1.3 Brain retention.....           | 19.52 | 112 |
| 4.2 Lifestyle.....                   | 56.97 | 65  |
| 4.2.1 Environmental performance..... | 45.72 | 80  |
| 4.2.2 Personal safety.....           | 55.96 | 75  |
| 4.2.3 Physician density.....         | 29.44 | 63  |
| 4.2.4 Sanitation.....                | 96.77 | 44  |

|                                                         |        |     |
|---------------------------------------------------------|--------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....39.02 60</b>   |        |     |
| 5.1 Mid-Level Skills.....                               | 56.28  | 28  |
| 5.1.1 Workforce with secondary education.....           | 100.00 | 1   |
| 5.1.2 Population with secondary education.....          | 87.59  | 3   |
| 5.1.3 Technicians and associate professionals.....      | 33.48  | 63  |
| 5.1.4 Labour productivity per employee.....             | 4.07   | 92  |
| 5.2 Employability.....                                  | 21.75  | 114 |
| 5.2.1 Ease of finding skilled employees.....            | 29.77  | 103 |
| 5.2.2 Relevance of education system to the economy..... | 21.13  | 97  |
| 5.2.3 Skills matching with secondary education.....     | 26.98  | 106 |
| 5.2.4 Skills matching with tertiary education.....      | 9.12   | 122 |

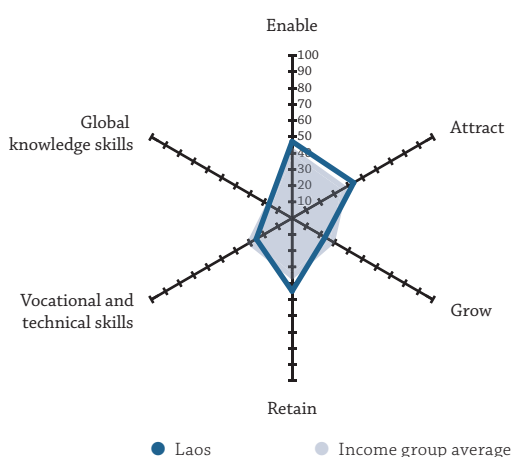
|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....17.88 82</b>       |       |     |
| 6.1 High-Level Skills.....                          | 21.79 | 81  |
| 6.1.1 Workforce with tertiary education.....        | 27.25 | 72  |
| 6.1.2 Population with tertiary education.....       | 28.01 | 58  |
| 6.1.3 Professionals.....                            | 27.25 | 62  |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 5.95  | 102 |
| 6.1.6 Availability of scientists and engineers..... | 20.50 | 108 |
| 6.2 Talent Impact.....                              | 13.96 | 81  |
| 6.2.1 Innovation output.....                        | 15.60 | 98  |
| 6.2.2 High-value exports.....                       | 33.55 | 18  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 6.07  | 63  |
| 6.2.5 Scientific journal articles.....              | 0.61  | 100 |

# LAO PDR

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>91</b>                                     |
| Income group.....          | <b>Lower-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>6.86</b>                                   |

GTCI 2019 Country Profile by Pillar



|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>1 ENABLE.....47.23 72</b>                           |       |      |
| 1.1 Regulatory Landscape.....48.21 66                  |       |      |
| 1.1.1 Government effectiveness.....35.48 89            |       |      |
| 1.1.2 Business-government relations.....81.24 14       |       |      |
| 1.1.3 Political stability.....76.16 39                 |       |      |
| 1.1.4 Regulatory quality.....30.38 108                 |       |      |
| 1.1.5 Corruption.....17.81 102                         |       |      |
| 1.2 Market Landscape.....36.96 100                     |       |      |
| 1.2.1 Competition intensity.....40.31 120              |       |      |
| 1.2.2 Ease of doing business.....39.76 110             |       |      |
| 1.2.3 Cluster development.....43.84 50                 |       |      |
| 1.2.4 R&D expenditure.....n/a n/a                      |       |      |
| 1.2.5 ICT infrastructure.....22.77 106                 |       |      |
| 1.2.6 Technology utilisation.....38.11 96              |       |      |
| 1.3 Business and Labour Landscape.....56.52 49         |       |      |
| Labour Market                                          |       |      |
| 1.3.1 Ease of hiring.....72.33 50                      |       |      |
| 1.3.2 Ease of redundancy.....75.00 45                  |       |      |
| 1.3.3 Active labour market policies.....42.84 59       |       |      |
| 1.3.4 Labour-employer cooperation.....47.05 48         |       |      |
| Management Practice                                    |       |      |
| 1.3.5 Professional management.....40.18 78             |       |      |
| 1.3.6 Relationship of pay to productivity.....61.71 42 |       |      |
| <b>2 ATTRACT.....43.80 59</b>                          |       |      |
| 2.1 External Openness.....30.31 92                     |       |      |
| Attract Business                                       |       |      |
| 2.1.1 FDI and technology transfer.....50.25 81         |       |      |
| 2.1.2 Prevalence of foreign ownership.....52.65 84     |       |      |
| Attract People                                         |       |      |
| 2.1.3 Migrant stock.....1.22 104                       |       |      |
| 2.1.4 International students.....1.72 91               |       |      |
| 2.1.5 Brain gain.....45.69 54                          |       |      |
| 2.2 Internal Openness.....57.29 38                     |       |      |
| Social Inclusion                                       |       |      |
| 2.2.1 Tolerance of minorities.....37.65 68             |       |      |
| 2.2.2 Tolerance of immigrants.....62.16 52             |       |      |
| 2.2.3 Social mobility.....52.49 54                     |       |      |
| Gender Equality                                        |       |      |
| 2.2.4 Female graduates.....51.96 84                    |       |      |
| 2.2.5 Gender earnings gap.....81.60 7                  |       |      |
| 2.2.6 Leadership opportunities for women.....57.87 33  |       |      |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>7,023.37</b> |
| GDP (US\$ billions).....               | <b>16.85</b>    |
| GTCI score.....                        | <b>33.56</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>3 GROW.....23.40 108</b>                            |       |      |
| 3.1 Formal Education.....6.16 118                      |       |      |
| Enrolment                                              |       |      |
| 3.1.1 Vocational enrolment.....2.59 107                |       |      |
| 3.1.2 Tertiary enrolment.....13.57 92                  |       |      |
| Quality                                                |       |      |
| 3.1.3 Tertiary education expenditure.....8.48 97       |       |      |
| 3.1.4 Reading, maths, and science.....n/a n/a          |       |      |
| 3.1.5 University ranking.....0.00 78                   |       |      |
| 3.2 Lifelong Learning.....25.21 114                    |       |      |
| 3.2.1 Quality of management schools.....36.79 74       |       |      |
| 3.2.2 Prevalence of training in firms.....4.09 89      |       |      |
| 3.2.3 Employee development.....34.75 68                |       |      |
| 3.3 Access to Growth Opportunities.....38.84 68        |       |      |
| Empowerment                                            |       |      |
| 3.3.1 Delegation of authority.....48.12 59             |       |      |
| 3.3.2 Personal rights.....5.53 120                     |       |      |
| Collaboration                                          |       |      |
| 3.3.3 Use of virtual social networks.....51.22 106     |       |      |
| 3.3.4 Use of virtual professional networks.....n/a n/a |       |      |
| 3.3.5 Collaboration within organisations.....44.10 40  |       |      |
| 3.3.6 Collaboration across organisations.....45.21 32  |       |      |

|                                               |  |  |
|-----------------------------------------------|--|--|
| <b>4 RETAIN.....44.87 69</b>                  |  |  |
| 4.1 Sustainability.....45.92 54               |  |  |
| 4.1.1 Pension system.....n/a n/a              |  |  |
| 4.1.2 Social protection.....39.02 64          |  |  |
| 4.1.3 Brain retention.....52.83 40            |  |  |
| 4.2 Lifestyle.....43.82 92                    |  |  |
| 4.2.1 Environmental performance.....25.85 112 |  |  |
| 4.2.2 Personal safety.....70.88 46            |  |  |
| 4.2.3 Physician density.....7.58 96           |  |  |
| 4.2.4 Sanitation.....70.97 92                 |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....25.48 104</b>          |  |  |
| 5.1 Mid-Level Skills.....8.78 112                               |  |  |
| 5.1.1 Workforce with secondary education.....12.66 103          |  |  |
| 5.1.2 Population with secondary education.....n/a n/a           |  |  |
| 5.1.3 Technicians and associate professionals.....4.91 114      |  |  |
| 5.1.4 Labour productivity per employee.....n/a n/a              |  |  |
| 5.2 Employability.....42.19 66                                  |  |  |
| 5.2.1 Ease of finding skilled employees.....41.98 74            |  |  |
| 5.2.2 Relevance of education system to the economy.....44.89 50 |  |  |
| 5.2.3 Skills matching with secondary education.....32.79 89     |  |  |
| 5.2.4 Skills matching with tertiary education.....49.08 60      |  |  |

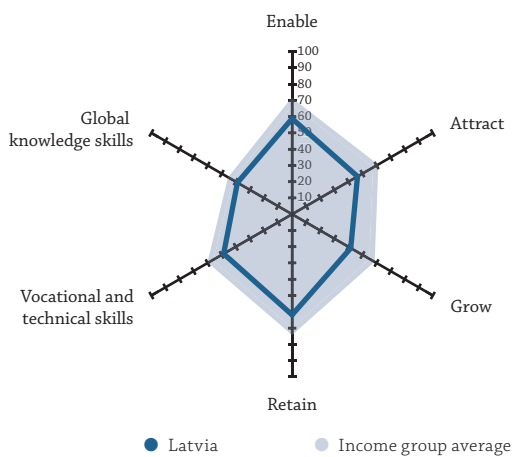
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|--------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....16.57 86</b>                |  |  |
| 6.1 High-Level Skills.....12.22 106                          |  |  |
| 6.1.1 Workforce with tertiary education.....12.10 96         |  |  |
| 6.1.2 Population with tertiary education.....n/a n/a         |  |  |
| 6.1.3 Professionals.....11.80 97                             |  |  |
| 6.1.4 Researchers.....n/a n/a                                |  |  |
| 6.1.5 Senior officials and managers.....7.74 95              |  |  |
| 6.1.6 Availability of scientists and engineers.....17.23 113 |  |  |
| 6.2 Talent Impact.....20.93 60                               |  |  |
| 6.2.1 Innovation output.....n/a n/a                          |  |  |
| 6.2.2 High-value exports.....60.94 4                         |  |  |
| 6.2.3 New product entrepreneurial activity.....n/a n/a       |  |  |
| 6.2.4 New business density.....1.40 89                       |  |  |
| 6.2.5 Scientific journal articles.....0.46 105               |  |  |

# LATVIA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>37</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>1.94</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>58.81</b> | <b>40</b> |
| 1.1 Regulatory Landscape.....                  | 64.45        | 37        |
| 1.1.1 Government effectiveness.....            | 69.98        | 32        |
| 1.1.2 Business-government relations.....       | 47.46        | 87        |
| 1.1.3 Political stability.....                 | 73.61        | 44        |
| 1.1.4 Regulatory quality.....                  | 73.68        | 26        |
| 1.1.5 Corruption.....                          | 57.53        | 35        |
| 1.2 Market Landscape.....                      | 54.27        | 46        |
| 1.2.1 Competition intensity.....               | 78.90        | 25        |
| 1.2.2 Ease of doing business.....              | 86.91        | 16        |
| 1.2.3 Cluster development.....                 | 27.33        | 92        |
| 1.2.4 R&D expenditure.....                     | 10.10        | 63        |
| 1.2.5 ICT infrastructure.....                  | 72.90        | 38        |
| 1.2.6 Technology utilisation.....              | 49.50        | 62        |
| 1.3 Business and Labour Landscape.....         | 57.71        | 42        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 66.67        | 58        |
| 1.3.2 Ease of redundancy.....                  | 75.00        | 45        |
| 1.3.3 Active labour market policies.....       | 52.29        | 45        |
| 1.3.4 Labour-employer cooperation.....         | 49.53        | 44        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 43.96        | 70        |
| 1.3.6 Relationship of pay to productivity..... | 58.82        | 46        |
| <b>2 ATTRACT.....</b>                          | <b>46.47</b> | <b>51</b> |
| 2.1 External Openness.....                     | 40.39        | 61        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 52.42        | 74        |
| 2.1.2 Prevalence of foreign ownership.....     | 70.43        | 39        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 27.11        | 28        |
| 2.1.4 International students.....              | 30.75        | 31        |
| 2.1.5 Brain gain.....                          | 21.24        | 112       |
| 2.2 Internal Openness.....                     | 52.54        | 51        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 24.71        | 93        |
| 2.2.2 Tolerance of immigrants.....             | 6.76         | 120       |
| 2.2.3 Social mobility.....                     | 53.37        | 53        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 94.74        | 5         |
| 2.2.5 Gender earnings gap.....                 | 64.16        | 28        |
| 2.2.6 Leadership opportunities for women.....  | 71.54        | 18        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>27,598.33</b> |
| GDP (US\$ billions).....               | <b>30.26</b>     |
| GTCI score.....                        | <b>49.39</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>41.68</b> | <b>46</b> |
| 3.1 Formal Education.....                       | 41.81        | 37        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 44.67        | 32        |
| 3.1.2 Tertiary enrolment.....                   | 55.67        | 24        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 26.03        | 46        |
| 3.1.4 Reading, maths, and science.....          | 69.49        | 29        |
| 3.1.5 University ranking.....                   | 13.19        | 69        |
| 3.2 Lifelong Learning.....                      | 39.71        | 68        |
| 3.2.1 Quality of management schools.....        | 46.76        | 48        |
| 3.2.2 Prevalence of training in firms.....      | 28.76        | 62        |
| 3.2.3 Employee development.....                 | 43.62        | 55        |
| 3.3 Access to Growth Opportunities.....         | 43.51        | 52        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 47.57        | 60        |
| 3.3.2 Personal rights.....                      | 76.52        | 35        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 72.08        | 60        |
| 3.3.4 Use of virtual professional networks..... | 26.18        | 38        |
| 3.3.5 Collaboration within organisations.....   | 21.10        | 101       |
| 3.3.6 Collaboration across organisations.....   | 17.61        | 98        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>61.90</b> | <b>37</b> |
| 4.1 Sustainability.....              | 50.79        | 43        |
| 4.1.1 Pension system.....            | 92.86        | 8         |
| 4.1.2 Social protection.....         | 38.59        | 65        |
| 4.1.3 Brain retention.....           | 20.91        | 108       |
| 4.2 Lifestyle.....                   | 73.02        | 34        |
| 4.2.1 Environmental performance..... | 64.49        | 35        |
| 4.2.2 Personal safety.....           | 83.94        | 27        |
| 4.2.3 Physician density.....         | 51.16        | 30        |
| 4.2.4 Sanitation.....                | 92.47        | 62        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>48.63</b> | <b>42</b> |
| 5.1 Mid-Level Skills.....                               | 60.69        | 19        |
| 5.1.1 Workforce with secondary education.....           | 75.24        | 18        |
| 5.1.2 Population with secondary education.....          | 72.61        | 10        |
| 5.1.3 Technicians and associate professionals.....      | 62.50        | 23        |
| 5.1.4 Labour productivity per employee.....             | 32.42        | 47        |
| 5.2 Employability.....                                  | 36.57        | 78        |
| 5.2.1 Ease of finding skilled employees.....            | 34.03        | 94        |
| 5.2.2 Relevance of education system to the economy..... | 36.11        | 63        |
| 5.2.3 Skills matching with secondary education.....     | 36.83        | 76        |
| 5.2.4 Skills matching with tertiary education.....      | 39.32        | 80        |

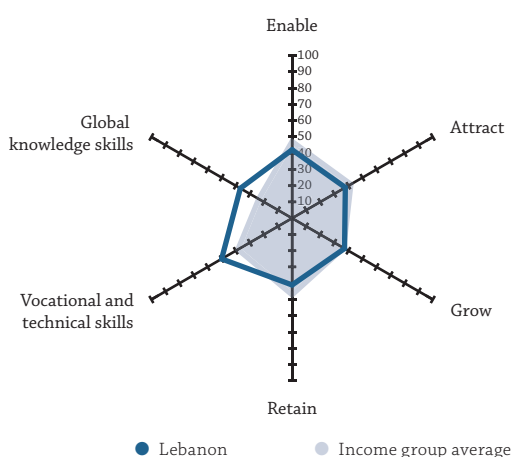
|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>38.83</b> | <b>31</b> |
| 6.1 High-Level Skills.....                          | 42.07        | 35        |
| 6.1.1 Workforce with tertiary education.....        | 53.37        | 26        |
| 6.1.2 Population with tertiary education.....       | 48.73        | 27        |
| 6.1.3 Professionals.....                            | 48.31        | 30        |
| 6.1.4 Researchers.....                              | 19.32        | 42        |
| 6.1.5 Senior officials and managers.....            | 59.52        | 12        |
| 6.1.6 Availability of scientists and engineers..... | 23.16        | 105       |
| 6.2 Talent Impact.....                              | 35.60        | 31        |
| 6.2.1 Innovation output.....                        | 46.21        | 37        |
| 6.2.2 High-value exports.....                       | 22.70        | 37        |
| 6.2.3 New product entrepreneurial activity.....     | 44.48        | 31        |
| 6.2.4 New business density.....                     | 38.70        | 19        |
| 6.2.5 Scientific journal articles.....              | 25.92        | 37        |

# LEBANON

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>59</b>                               |
| Income group.....          | <b>Upper-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>6.08</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....42.11</b>                      | <b>87</b> |      |
| 1.1 Regulatory Landscape.....                  | 29.64     | 117  |
| 1.1.1 Government effectiveness.....            | 32.01     | 93   |
| 1.1.2 Business-government relations.....       | 31.57     | 117  |
| 1.1.3 Political stability.....                 | 28.47     | 117  |
| 1.1.4 Regulatory quality.....                  | 39.71     | 89   |
| 1.1.5 Corruption.....                          | 16.44     | 109  |
| 1.2 Market Landscape.....                      | 55.40     | 42   |
| 1.2.1 Competition intensity.....               | 83.95     | 15   |
| 1.2.2 Ease of doing business.....              | 42.74     | 105  |
| 1.2.3 Cluster development.....                 | 39.68     | 58   |
| 1.2.4 R&D expenditure.....                     | n/a       | n/a  |
| 1.2.5 ICT infrastructure.....                  | 66.67     | 55   |
| 1.2.6 Technology utilisation.....              | 43.94     | 80   |
| 1.3 Business and Labour Landscape.....         | 41.30     | 94   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 55.67     | 76   |
| 1.3.2 Ease of redundancy.....                  | 50.00     | 85   |
| 1.3.3 Active labour market policies.....       | 17.01     | 113  |
| 1.3.4 Labour-employer cooperation.....         | 36.65     | 77   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 34.41     | 92   |
| 1.3.6 Relationship of pay to productivity..... | 54.08     | 55   |
| <b>2 ATTRACT.....37.82</b>                     | <b>93</b> |      |
| 2.1 External Openness.....                     | 42.26     | 48   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 32.44     | 115  |
| 2.1.2 Prevalence of foreign ownership.....     | 40.31     | 106  |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 65.80     | 10   |
| 2.1.4 International students.....              | 44.64     | 21   |
| 2.1.5 Brain gain.....                          | 28.10     | 96   |
| 2.2 Internal Openness.....                     | 33.39     | 119  |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 12.94     | 109  |
| 2.2.2 Tolerance of immigrants.....             | 41.89     | 87   |
| 2.2.3 Social mobility.....                     | 34.75     | 107  |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 70.77     | 62   |
| 2.2.5 Gender earnings gap.....                 | 10.51     | 115  |
| 2.2.6 Leadership opportunities for women.....  | 29.45     | 88   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>14,675.64</b> |
| GDP (US\$ billions).....               | <b>51.84</b>     |
| GTCI score.....                        | <b>40.85</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....37.27</b>                         | <b>61</b> |      |
| 3.1 Formal Education.....                       | 24.36     | 71   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 29.42     | 53   |
| 3.1.2 Tertiary enrolment.....                   | 30.91     | 67   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 15.99     | 78   |
| 3.1.4 Reading, maths, and science.....          | 17.59     | 64   |
| 3.1.5 University ranking.....                   | 27.87     | 41   |
| 3.2 Lifelong Learning.....                      | 48.63     | 44   |
| 3.2.1 Quality of management schools.....        | 80.44     | 9    |
| 3.2.2 Prevalence of training in firms.....      | 30.61     | 55   |
| 3.2.3 Employee development.....                 | 34.86     | 67   |
| 3.3 Access to Growth Opportunities.....         | 38.83     | 69   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 34.28     | 92   |
| 3.3.2 Personal rights.....                      | 42.34     | 84   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 69.26     | 72   |
| 3.3.4 Use of virtual professional networks..... | 26.39     | 37   |
| 3.3.5 Collaboration within organisations.....   | 35.58     | 64   |
| 3.3.6 Collaboration across organisations.....   | 25.14     | 82   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....41.05</b>            | <b>84</b> |     |
| 4.1 Sustainability.....              | 25.71     | 104 |
| 4.1.1 Pension system.....            | 33.67     | 59  |
| 4.1.2 Social protection.....         | 14.46     | 114 |
| 4.1.3 Brain retention.....           | 28.99     | 98  |
| 4.2 Lifestyle.....                   | 56.38     | 67  |
| 4.2.1 Environmental performance..... | 56.09     | 60  |
| 4.2.2 Personal safety.....           | 36.94     | 106 |
| 4.2.3 Physician density.....         | 37.87     | 50  |
| 4.2.4 Sanitation.....                | 94.62     | 53  |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....50.06</b>      | <b>40</b> |     |
| 5.1 Mid-Level Skills.....                               | 29.88     | 78  |
| 5.1.1 Workforce with secondary education.....           | 22.42     | 92  |
| 5.1.2 Population with secondary education.....          | 24.82     | 73  |
| 5.1.3 Technicians and associate professionals.....      | 42.41     | 50  |
| 5.1.4 Labour productivity per employee.....             | n/a       | n/a |
| 5.2 Employability.....                                  | 70.24     | 21  |
| 5.2.1 Ease of finding skilled employees.....            | 74.53     | 23  |
| 5.2.2 Relevance of education system to the economy..... | 69.53     | 18  |
| 5.2.3 Skills matching with secondary education.....     | 60.42     | 28  |
| 5.2.4 Skills matching with tertiary education.....      | 76.48     | 21  |

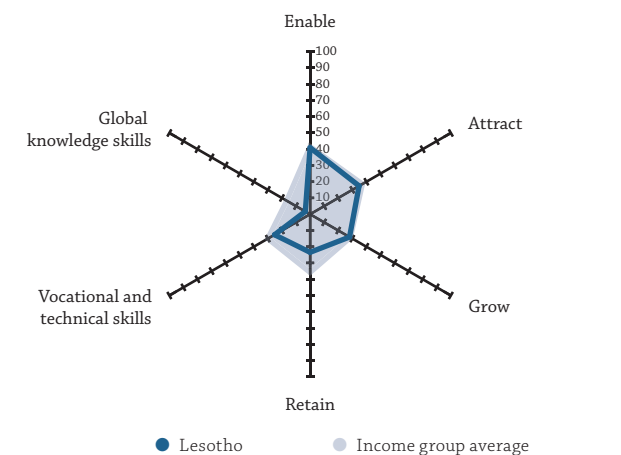
|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....36.78</b>          | <b>35</b> |     |
| 6.1 High-Level Skills.....                          | 45.57     | 29  |
| 6.1.1 Workforce with tertiary education.....        | 36.55     | 53  |
| 6.1.2 Population with tertiary education.....       | 24.11     | 64  |
| 6.1.3 Professionals.....                            | 27.25     | 62  |
| 6.1.4 Researchers.....                              | n/a       | n/a |
| 6.1.5 Senior officials and managers.....            | 69.64     | 7   |
| 6.1.6 Availability of scientists and engineers..... | 70.30     | 15  |
| 6.2 Talent Impact.....                              | 27.99     | 44  |
| 6.2.1 Innovation output.....                        | 18.23     | 91  |
| 6.2.2 High-value exports.....                       | 4.30      | 90  |
| 6.2.3 New product entrepreneurial activity.....     | 80.24     | 4   |
| 6.2.4 New business density.....                     | n/a       | n/a |
| 6.2.5 Scientific journal articles.....              | 9.17      | 55  |

# LESOTHO

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>110</b>                 |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>2.23</b>                |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 40.93 91</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 42.86  | 84   |
| 1.1.1 Government effectiveness.....            | 25.31  | 111  |
| 1.1.2 Business-government relations.....       | 56.07  | 67   |
| 1.1.3 Political stability.....                 | 58.80  | 75   |
| 1.1.4 Regulatory quality.....                  | 38.52  | 91   |
| 1.1.5 Corruption.....                          | 35.62  | 59   |
| 1.2 Market Landscape.....                      | 33.16  | 106  |
| 1.2.1 Competition intensity.....               | 78.40  | 28   |
| 1.2.2 Ease of doing business.....              | 53.07  | 88   |
| 1.2.3 Cluster development.....                 | 31.46  | 81   |
| 1.2.4 R&D expenditure.....                     | 0.78   | 107  |
| 1.2.5 ICT infrastructure.....                  | 25.95  | 101  |
| 1.2.6 Technology utilisation.....              | 9.31   | 123  |
| 1.3 Business and Labour Landscape.....         | 46.77  | 85   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 66.67  | 58   |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 47.01  | 54   |
| 1.3.4 Labour-employer cooperation.....         | 14.40  | 119  |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 23.67  | 119  |
| 1.3.6 Relationship of pay to productivity..... | 28.85  | 109  |
| <b>2 ATTRACT..... 34.82 102</b>                |        |      |
| 2.1 External Openness.....                     | 19.07  | 120  |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 19.93  | 122  |
| 2.1.2 Prevalence of foreign ownership.....     | 35.77  | 109  |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 0.48   | 116  |
| 2.1.4 International students.....              | 1.49   | 92   |
| 2.1.5 Brain gain.....                          | 37.68  | 79   |
| 2.2 Internal Openness.....                     | 50.58  | 58   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 67.06  | 23   |
| 2.2.2 Tolerance of immigrants.....             | 66.22  | 44   |
| 2.2.3 Social mobility.....                     | 32.92  | 112  |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 82.52  | 29   |
| 2.2.5 Gender earnings gap.....                 | 50.66  | 73   |
| 2.2.6 Leadership opportunities for women.....  | 4.09   | 123  |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>3,130.15</b> |
| GDP (US\$ billions).....               | <b>2.64</b>     |
| GTCI score.....                        | <b>25.98</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score  | Rank |
|-------------------------------------------------|--------|------|
| <b>3 GROW..... 28.02 93</b>                     |        |      |
| 3.1 Formal Education.....                       | 28.55  | 63   |
| Enrolment                                       |        |      |
| 3.1.1 Vocational enrolment.....                 | 7.33   | 95   |
| 3.1.2 Tertiary enrolment.....                   | 6.88   | 104  |
| Quality                                         |        |      |
| 3.1.3 Tertiary education expenditure.....       | 100.00 | 1    |
| 3.1.4 Reading, maths, and science.....          | n/a    | n/a  |
| 3.1.5 University ranking.....                   | 0.00   | 78   |
| 3.2 Lifelong Learning.....                      | 38.89  | 70   |
| 3.2.1 Quality of management schools.....        | 62.13  | 28   |
| 3.2.2 Prevalence of training in firms.....      | 36.68  | 47   |
| 3.2.3 Employee development.....                 | 17.86  | 114  |
| 3.3 Access to Growth Opportunities.....         | 16.61  | 123  |
| Empowerment                                     |        |      |
| 3.3.1 Delegation of authority.....              | 15.32  | 122  |
| 3.3.2 Personal rights.....                      | 54.39  | 72   |
| Collaboration                                   |        |      |
| 3.3.3 Use of virtual social networks.....       | 0.00   | 125  |
| 3.3.4 Use of virtual professional networks..... | 3.51   | 98   |
| 3.3.5 Collaboration within organisations.....   | 2.72   | 124  |
| 3.3.6 Collaboration across organisations.....   | 23.73  | 87   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 23.43 114</b>       |       |     |
| 4.1 Sustainability.....              | 23.29 | 110 |
| 4.1.1 Pension system.....            | 2.04  | 103 |
| 4.1.2 Social protection.....         | 29.98 | 84  |
| 4.1.3 Brain retention.....           | 37.84 | 73  |
| 4.2 Lifestyle.....                   | 23.57 | 116 |
| 4.2.1 Environmental performance..... | 10.59 | 118 |
| 4.2.2 Personal safety.....           | 43.44 | 99  |
| 4.2.3 Physician density.....         | 0.46  | 120 |
| 4.2.4 Sanitation.....                | 39.78 | 107 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 25.24 105</b> |       |     |
| 5.1 Mid-Level Skills.....                               | 21.37 | 94  |
| 5.1.1 Workforce with secondary education.....           | 34.26 | 75  |
| 5.1.2 Population with secondary education.....          | 11.98 | 93  |
| 5.1.3 Technicians and associate professionals.....      | 17.86 | 88  |
| 5.1.4 Labour productivity per employee.....             | n/a   | n/a |
| 5.2 Employability.....                                  | 29.11 | 98  |
| 5.2.1 Ease of finding skilled employees.....            | 17.86 | 121 |
| 5.2.2 Relevance of education system to the economy..... | 35.50 | 65  |
| 5.2.3 Skills matching with secondary education.....     | 2.32  | 124 |
| 5.2.4 Skills matching with tertiary education.....      | 60.78 | 35  |

|                                                     |      |     |
|-----------------------------------------------------|------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 3.41 124</b>      |      |     |
| 6.1 High-Level Skills.....                          | 4.23 | 123 |
| 6.1.1 Workforce with tertiary education.....        | 5.99 | 107 |
| 6.1.2 Population with tertiary education.....       | 1.36 | 100 |
| 6.1.3 Professionals.....                            | 1.69 | 119 |
| 6.1.4 Researchers.....                              | 0.19 | 98  |
| 6.1.5 Senior officials and managers.....            | 7.14 | 96  |
| 6.1.6 Availability of scientists and engineers..... | 9.02 | 121 |
| 6.2 Talent Impact.....                              | 2.60 | 120 |
| 6.2.1 Innovation output.....                        | n/a  | n/a |
| 6.2.2 High-value exports.....                       | 0.00 | 121 |
| 6.2.3 New product entrepreneurial activity.....     | n/a  | n/a |
| 6.2.4 New business density.....                     | 7.42 | 58  |
| 6.2.5 Scientific journal articles.....              | 0.37 | 109 |

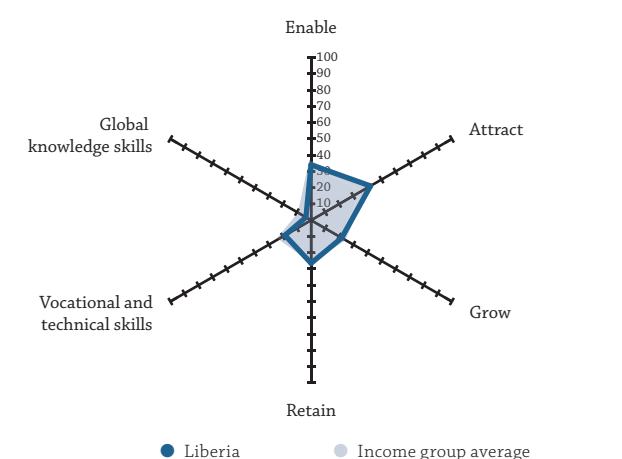
# LIBERIA

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>114</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>4.73</b>               |

|                                         |               |
|-----------------------------------------|---------------|
| GDP per capita (PPP US\$) .....         | <b>826.45</b> |
| GDP (US\$ billions) .....               | <b>2.16</b>   |
| GTCI score.....                         | <b>24.45</b>  |
| GTCI score (income group average) ..... | <b>24.81</b>  |

GTCI 2019 Country Profile by Pillar



|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>1 ENABLE.....34.10 112</b>                   |       |      |
| 1.1 Regulatory Landscape.....                   | 33.95 | 105  |
| 1.1.1 Government effectiveness .....            | 12.41 | 122  |
| 1.1.2 Business-government relations .....       | 59.82 | 60   |
| 1.1.3 Political stability .....                 | 51.85 | 91   |
| 1.1.4 Regulatory quality .....                  | 25.12 | 116  |
| 1.1.5 Corruption .....                          | 20.55 | 92   |
| 1.2 Market Landscape.....                       | 27.36 | 117  |
| 1.2.1 Competition intensity .....               | 41.66 | 119  |
| 1.2.2 Ease of doing business .....              | 22.77 | 121  |
| 1.2.3 Cluster development .....                 | 32.25 | 79   |
| 1.2.4 R&D expenditure .....                     | n/a   | n/a  |
| 1.2.5 ICT infrastructure .....                  | n/a   | n/a  |
| 1.2.6 Technology utilisation .....              | 12.74 | 121  |
| 1.3 Business and Labour Landscape.....          | 40.99 | 96   |
| Labour Market                                   |       |      |
| 1.3.1 Ease of hiring .....                      | 66.67 | 58   |
| 1.3.2 Ease of redundancy .....                  | 50.00 | 85   |
| 1.3.3 Active labour market policies .....       | 27.85 | 91   |
| 1.3.4 Labour-employer cooperation .....         | 21.31 | 111  |
| Management Practice                             |       |      |
| 1.3.5 Professional management .....             | 40.05 | 79   |
| 1.3.6 Relationship of pay to productivity ..... | 40.07 | 82   |
| <b>2 ATTRACT.....42.19 69</b>                   |       |      |
| 2.1 External Openness .....                     | 37.58 | 69   |
| Attract Business                                |       |      |
| 2.1.1 FDI and technology transfer .....         | 31.07 | 116  |
| 2.1.2 Prevalence of foreign ownership .....     | 66.10 | 47   |
| Attract People                                  |       |      |
| 2.1.3 Migrant stock .....                       | 4.16  | 82   |
| 2.1.4 International students .....              | n/a   | n/a  |
| 2.1.5 Brain gain .....                          | 49.00 | 45   |
| 2.2 Internal Openness.....                      | 46.81 | 73   |
| Social Inclusion                                |       |      |
| 2.2.1 Tolerance of minorities .....             | 44.71 | 57   |
| 2.2.2 Tolerance of immigrants .....             | 52.70 | 67   |
| 2.2.3 Social mobility .....                     | 35.92 | 102  |
| Gender Equality                                 |       |      |
| 2.2.4 Female graduates .....                    | 24.98 | 98   |
| 2.2.5 Gender earnings gap .....                 | 97.85 | 2    |
| 2.2.6 Leadership opportunities for women .....  | 24.68 | 98   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....21.74 114</b>                     |       |      |
| 3.1 Formal Education.....                       | 11.05 | 105  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 15.36 | 78   |
| 3.1.2 Tertiary enrolment.....                   | 9.00  | 97   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 19.85 | 65   |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 22.17 | 119  |
| 3.2.1 Quality of management schools.....        | 10.56 | 121  |
| 3.2.2 Prevalence of training in firms .....     | 25.59 | 66   |
| 3.2.3 Employee development.....                 | 30.36 | 81   |
| 3.3 Access to Growth Opportunities .....        | 32.01 | 101  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 40.65 | 77   |
| 3.3.2 Personal rights.....                      | 56.43 | 68   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 37.25 | 117  |
| 3.3.4 Use of virtual professional networks..... | 2.91  | 101  |
| 3.3.5 Collaboration within organisations .....  | 32.16 | 71   |
| 3.3.6 Collaboration across organisations .....  | 22.64 | 88   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....26.45 112</b>        |       |     |
| 4.1 Sustainability .....             | 32.31 | 81  |
| 4.1.1 Pension system.....            | n/a   | n/a |
| 4.1.2 Social protection .....        | 23.38 | 100 |
| 4.1.3 Brain retention .....          | 41.23 | 66  |
| 4.2 Lifestyle .....                  | 20.58 | 123 |
| 4.2.1 Environmental performance..... | 23.65 | 115 |
| 4.2.2 Personal safety .....          | 47.85 | 93  |
| 4.2.3 Physician density .....        | 0.08  | 123 |
| 4.2.4 Sanitation .....               | 10.75 | 122 |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....18.55 118</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 14.06 | 105 |
| 5.1.1 Workforce with secondary education .....           | 20.97 | 94  |
| 5.1.2 Population with secondary education .....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals .....      | 7.14  | 109 |
| 5.1.4 Labour productivity per employee .....             | n/a   | n/a |
| 5.2 Employability.....                                   | 23.05 | 112 |
| 5.2.1 Ease of finding skilled employees .....            | 28.05 | 107 |
| 5.2.2 Relevance of education system to the economy ..... | 18.83 | 102 |
| 5.2.3 Skills matching with secondary education.....      | 17.50 | 116 |
| 5.2.4 Skills matching with tertiary education .....      | 27.53 | 107 |

|                                                      |       |     |
|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....3.67 123</b>       |       |     |
| 6.1 High-Level Skills .....                          | 7.28  | 118 |
| 6.1.1 Workforce with tertiary education .....        | 3.17  | 112 |
| 6.1.2 Population with tertiary education .....       | n/a   | n/a |
| 6.1.3 Professionals .....                            | 16.29 | 86  |
| 6.1.4 Researchers .....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers .....            | 6.55  | 99  |
| 6.1.6 Availability of scientists and engineers ..... | 3.13  | 124 |
| 6.2 Talent Impact.....                               | 0.05  | 125 |
| 6.2.1 Innovation output .....                        | n/a   | n/a |
| 6.2.2 High-value exports .....                       | n/a   | n/a |
| 6.2.3 New product entrepreneurial activity .....     | n/a   | n/a |
| 6.2.4 New business density .....                     | 0.00  | 103 |
| 6.2.5 Scientific journal articles.....               | 0.10  | 121 |

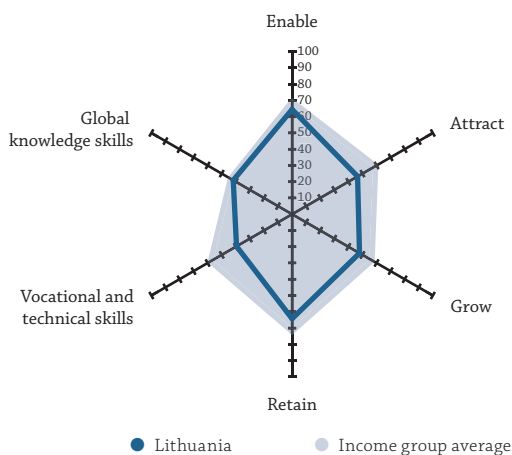


# LITHUANIA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>35</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>2.83</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 64.48 29</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 68.07  | 28   |
| 1.1.1 Government effectiveness.....            | 72.21  | 27   |
| 1.1.2 Business-government relations.....       | 50.99  | 77   |
| 1.1.3 Political stability.....                 | 83.10  | 27   |
| 1.1.4 Regulatory quality.....                  | 75.12  | 24   |
| 1.1.5 Corruption.....                          | 58.90  | 33   |
| 1.2 Market Landscape.....                      | 60.19  | 33   |
| 1.2.1 Competition intensity.....               | 79.11  | 24   |
| 1.2.2 Ease of doing business.....              | 88.00  | 13   |
| 1.2.3 Cluster development.....                 | 28.22  | 88   |
| 1.2.4 R&D expenditure.....                     | 19.66  | 40   |
| 1.2.5 ICT infrastructure.....                  | 69.08  | 50   |
| 1.2.6 Technology utilisation.....              | 77.09  | 22   |
| 1.3 Business and Labour Landscape.....         | 65.18  | 34   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 75.00  | 45   |
| 1.3.3 Active labour market policies.....       | 54.44  | 43   |
| 1.3.4 Labour-employer cooperation.....         | 43.56  | 54   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 56.45  | 37   |
| 1.3.6 Relationship of pay to productivity..... | 61.61  | 43   |
| <b>2 ATTRACT..... 46.53 50</b>                 |        |      |
| 2.1 External Openness.....                     | 35.79  | 77   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 70.39  | 31   |
| 2.1.2 Prevalence of foreign ownership.....     | 55.92  | 71   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 8.78   | 58   |
| 2.1.4 International students.....              | 20.61  | 47   |
| 2.1.5 Brain gain.....                          | 23.27  | 107  |
| 2.2 Internal Openness.....                     | 57.26  | 39   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 61.18  | 31   |
| 2.2.2 Tolerance of immigrants.....             | 16.22  | 112  |
| 2.2.3 Social mobility.....                     | 56.37  | 43   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 86.60  | 18   |
| 2.2.5 Gender earnings gap.....                 | 66.55  | 23   |
| 2.2.6 Leadership opportunities for women.....  | 56.65  | 36   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>32,092.50</b> |
| GDP (US\$ billions).....               | <b>47.17</b>     |
| GTCI score.....                        | <b>50.75</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 47.90 36</b>                     |       |      |
| 3.1 Formal Education.....                       | 37.87 | 43   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 20.28 | 66   |
| 3.1.2 Tertiary enrolment.....                   | 53.86 | 29   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 31.06 | 28   |
| 3.1.4 Reading, maths, and science.....          | 64.15 | 34   |
| 3.1.5 University ranking.....                   | 19.99 | 55   |
| 3.2 Lifelong Learning.....                      | 49.20 | 41   |
| 3.2.1 Quality of management schools.....        | 36.68 | 75   |
| 3.2.2 Prevalence of training in firms.....      | 50.92 | 28   |
| 3.2.3 Employee development.....                 | 60.01 | 29   |
| 3.3 Access to Growth Opportunities.....         | 56.64 | 30   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 57.27 | 34   |
| 3.3.2 Personal rights.....                      | 85.66 | 24   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 86.49 | 18   |
| 3.3.4 Use of virtual professional networks..... | 19.61 | 50   |
| 3.3.5 Collaboration within organisations.....   | 51.49 | 34   |
| 3.3.6 Collaboration across organisations.....   | 39.33 | 44   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 64.28 32</b>        |       |     |
| 4.1 Sustainability.....              | 51.05 | 42  |
| 4.1.1 Pension system.....            | 98.98 | 2   |
| 4.1.2 Social protection.....         | 28.87 | 88  |
| 4.1.3 Brain retention.....           | 25.29 | 102 |
| 4.2 Lifestyle.....                   | 77.52 | 26  |
| 4.2.1 Environmental performance..... | 69.84 | 28  |
| 4.2.2 Personal safety.....           | 76.76 | 40  |
| 4.2.3 Physician density.....         | 69.92 | 6   |
| 4.2.4 Sanitation.....                | 93.55 | 60  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 39.48 58</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 48.74 | 43  |
| 5.1.1 Workforce with secondary education.....           | 71.24 | 20  |
| 5.1.2 Population with secondary education.....          | 45.79 | 40  |
| 5.1.3 Technicians and associate professionals.....      | 41.52 | 54  |
| 5.1.4 Labour productivity per employee.....             | 36.40 | 41  |
| 5.2 Employability.....                                  | 30.23 | 95  |
| 5.2.1 Ease of finding skilled employees.....            | 24.59 | 111 |
| 5.2.2 Relevance of education system to the economy..... | 34.26 | 68  |
| 5.2.3 Skills matching with secondary education.....     | 27.14 | 105 |
| 5.2.4 Skills matching with tertiary education.....      | 34.93 | 86  |

|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 41.81 27</b>      |       |    |
| 6.1 High-Level Skills.....                          | 52.59 | 22 |
| 6.1.1 Workforce with tertiary education.....        | 65.03 | 12 |
| 6.1.2 Population with tertiary education.....       | 54.33 | 15 |
| 6.1.3 Professionals.....                            | 63.76 | 13 |
| 6.1.4 Researchers.....                              | 35.48 | 28 |
| 6.1.5 Senior officials and managers.....            | 52.98 | 14 |
| 6.1.6 Availability of scientists and engineers..... | 43.95 | 55 |
| 6.2 Talent Impact.....                              | 31.04 | 38 |
| 6.2.1 Innovation output.....                        | 40.30 | 43 |
| 6.2.2 High-value exports.....                       | 21.32 | 39 |
| 6.2.3 New product entrepreneurial activity.....     | 46.68 | 22 |
| 6.2.4 New business density.....                     | 16.00 | 36 |
| 6.2.5 Scientific journal articles.....              | 30.88 | 33 |

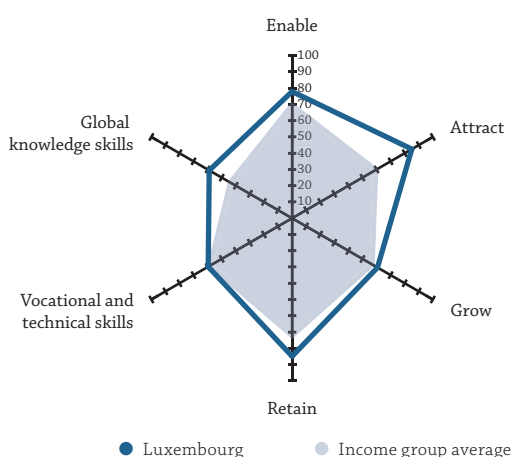
# LUXEMBOURG

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>10</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>0.60</b>        |

|                                         |                   |
|-----------------------------------------|-------------------|
| GDP per capita (PPP US\$) .....         | <b>103,661.76</b> |
| GDP (US\$ billions) .....               | <b>62.40</b>      |
| GTCI score.....                         | <b>71.18</b>      |
| GTCI score (income group average) ..... | <b>59.93</b>      |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....77.96</b>                      | <b>17</b> |      |
| 1.1 Regulatory Landscape.....                  | 91.55     | 4    |
| 1.1.1 Government effectiveness .....           | 87.10     | 12   |
| 1.1.2 Business-government relations .....      | 94.04     | 4    |
| 1.1.3 Political stability .....                | 97.22     | 3    |
| 1.1.4 Regulatory quality.....                  | 89.00     | 12   |
| 1.1.5 Corruption .....                         | 90.41     | 8    |
| 1.2 Market Landscape.....                      | 73.36     | 19   |
| 1.2.1 Competition intensity .....              | 73.77     | 47   |
| 1.2.2 Ease of doing business .....             | 68.50     | 58   |
| 1.2.3 Cluster development .....                | 79.21     | 12   |
| 1.2.4 R&D expenditure .....                    | 29.00     | 29   |
| 1.2.5 ICT infrastructure.....                  | 100.00    | 1    |
| 1.2.6 Technology utilisation.....              | 89.70     | 11   |
| 1.3 Business and Labour Landscape.....         | 68.96     | 30   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring .....                     | 22.33     | 112  |
| 1.3.2 Ease of redundancy .....                 | 62.50     | 64   |
| 1.3.3 Active labour market policies.....       | 91.81     | 4    |
| 1.3.4 Labour-employer cooperation .....        | 80.82     | 10   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 84.37     | 15   |
| 1.3.6 Relationship of pay to productivity..... | 71.94     | 23   |
| <b>2 ATTRACT.....85.05</b>                     | <b>2</b>  |      |
| 2.1 External Openness .....                    | 94.02     | 3    |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 92.25     | 3    |
| 2.1.2 Prevalence of foreign ownership .....    | 98.00     | 3    |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 93.47     | 6    |
| 2.1.4 International students.....              | 100.00    | 1    |
| 2.1.5 Brain gain.....                          | 86.40     | 6    |
| 2.2 Internal Openness.....                     | 76.08     | 8    |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities .....            | 78.82     | 8    |
| 2.2.2 Tolerance of immigrants.....             | 89.19     | 9    |
| 2.2.3 Social mobility.....                     | 89.21     | 12   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates .....                   | 71.60     | 58   |
| 2.2.5 Gender earnings gap.....                 | 55.44     | 52   |
| 2.2.6 Leadership opportunities for women.....  | 72.22     | 17   |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....60.66</b>                         | <b>19</b> |      |
| 3.1 Formal Education.....                       | 32.71     | 55   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment .....                | 69.10     | 14   |
| 3.1.2 Tertiary enrolment.....                   | 15.64     | 88   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 10.91     | 91   |
| 3.1.4 Reading, maths, and science .....         | 67.88     | 31   |
| 3.1.5 University ranking .....                  | 0.00      | 78   |
| 3.2 Lifelong Learning.....                      | 69.05     | 21   |
| 3.2.1 Quality of management schools.....        | 49.42     | 44   |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 88.68     | 4    |
| 3.3 Access to Growth Opportunities .....        | 80.21     | 11   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 79.33     | 16   |
| 3.3.2 Personal rights.....                      | 93.37     | 12   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 86.95     | 17   |
| 3.3.4 Use of virtual professional networks..... | 76.61     | 8    |
| 3.3.5 Collaboration within organisations .....  | 76.33     | 17   |
| 3.3.6 Collaboration across organisations .....  | 68.70     | 16   |

|                                      |          |     |
|--------------------------------------|----------|-----|
| <b>4 RETAIN.....84.94</b>            | <b>8</b> |     |
| 4.1 Sustainability .....             | 93.03    | 3   |
| 4.1.1 Pension system.....            | 100.00   | 1   |
| 4.1.2 Social protection .....        | 97.05    | 4   |
| 4.1.3 Brain retention .....          | 82.05    | 8   |
| 4.2 Lifestyle .....                  | 76.85    | 28  |
| 4.2.1 Environmental performance..... | 86.16    | 7   |
| 4.2.2 Personal safety .....          | n/a      | n/a |
| 4.2.3 Physician density .....        | 46.54    | 39  |
| 4.2.4 Sanitation .....               | 97.85    | 37  |

|                                                          |           |    |
|----------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....59.61</b>       | <b>26</b> |    |
| 5.1 Mid-Level Skills .....                               | 60.22     | 20 |
| 5.1.1 Workforce with secondary education .....           | 41.21     | 66 |
| 5.1.2 Population with secondary education .....          | 43.94     | 43 |
| 5.1.3 Technicians and associate professionals .....      | 75.89     | 12 |
| 5.1.4 Labour productivity per employee.....              | 79.83     | 5  |
| 5.2 Employability.....                                   | 59.00     | 32 |
| 5.2.1 Ease of finding skilled employees .....            | 52.23     | 58 |
| 5.2.2 Relevance of education system to the economy ..... | 53.47     | 37 |
| 5.2.3 Skills matching with secondary education.....      | 63.06     | 25 |
| 5.2.4 Skills matching with tertiary education .....      | 67.23     | 27 |

|                                                      |              |          |
|------------------------------------------------------|--------------|----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>58.88</b> | <b>9</b> |
| 6.1 High-Level Skills .....                          | 54.11        | 21       |
| 6.1.1 Workforce with tertiary education .....        | 62.19        | 15       |
| 6.1.2 Population with tertiary education .....       | 56.37        | 13       |
| 6.1.3 Professionals.....                             | 100.00       | 1        |
| 6.1.4 Researchers.....                               | 52.69        | 19       |
| 6.1.5 Senior officials and managers .....            | 12.50        | 79       |
| 6.1.6 Availability of scientists and engineers ..... | 40.92        | 59       |
| 6.2 Talent Impact.....                               | 63.66        | 2        |
| 6.2.1 Innovation output.....                         | 75.92        | 4        |
| 6.2.2 High-value exports .....                       | 13.79        | 55       |
| 6.2.3 New product entrepreneurial activity .....     | 100.00       | 1        |
| 6.2.4 New business density .....                     | 73.93        | 7        |
| 6.2.5 Scientific journal articles.....               | 54.66        | 19       |

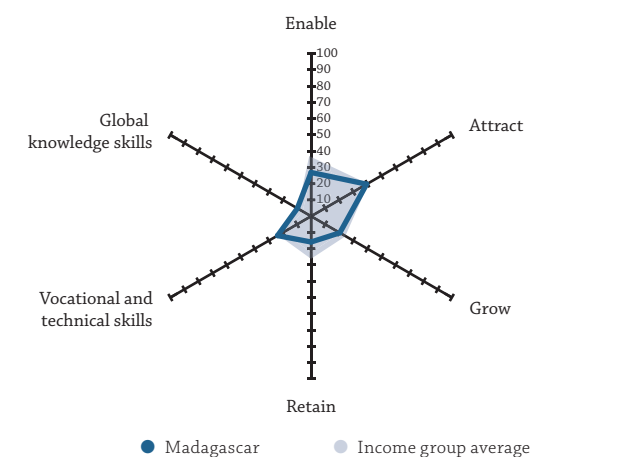


# MADAGASCAR

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>119</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>25.57</b>              |

GTCI 2019 Country Profile by Pillar



|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>1 ENABLE.....26.91 121</b>                           |       |      |
| 1.1 Regulatory Landscape.....29.68 115                  |       |      |
| 1.1.1 Government effectiveness.....16.13 120            |       |      |
| 1.1.2 Business-government relations.....34.66 111       |       |      |
| 1.1.3 Political stability.....55.32 83                  |       |      |
| 1.1.4 Regulatory quality.....31.34 106                  |       |      |
| 1.1.5 Corruption.....10.96 118                          |       |      |
| 1.2 Market Landscape.....25.94 119                      |       |      |
| 1.2.1 Competition intensity.....59.13 84                |       |      |
| 1.2.2 Ease of doing business.....30.17 117              |       |      |
| 1.2.3 Cluster development.....15.30 109                 |       |      |
| 1.2.4 R&D expenditure.....0.00 111                      |       |      |
| 1.2.5 ICT infrastructure.....7.76 119                   |       |      |
| 1.2.6 Technology utilisation.....43.30 83               |       |      |
| 1.3 Business and Labour Landscape.....25.10 121         |       |      |
| Labour Market                                           |       |      |
| 1.3.1 Ease of hiring.....0.00 121                       |       |      |
| 1.3.2 Ease of redundancy.....50.00 85                   |       |      |
| 1.3.3 Active labour market policies.....9.65 121        |       |      |
| 1.3.4 Labour-employer cooperation.....33.16 85          |       |      |
| Management Practice                                     |       |      |
| 1.3.5 Professional management.....29.82 104             |       |      |
| 1.3.6 Relationship of pay to productivity.....27.96 111 |       |      |
| <b>2 ATTRACT.....39.45 88</b>                           |       |      |
| 2.1 External Openness.....29.73 93                      |       |      |
| Attract Business                                        |       |      |
| 2.1.1 FDI and technology transfer.....45.51 94          |       |      |
| 2.1.2 Prevalence of foreign ownership.....55.49 72      |       |      |
| Attract People                                          |       |      |
| 2.1.3 Migrant stock.....0.13 122                        |       |      |
| 2.1.4 International students.....9.17 67                |       |      |
| 2.1.5 Brain gain.....38.34 76                           |       |      |
| 2.2 Internal Openness.....49.17 64                      |       |      |
| Social Inclusion                                        |       |      |
| 2.2.1 Tolerance of minorities.....64.71 26              |       |      |
| 2.2.2 Tolerance of immigrants.....52.70 67              |       |      |
| 2.2.3 Social mobility.....36.63 100                     |       |      |
| Gender Equality                                         |       |      |
| 2.2.4 Female graduates.....50.34 87                     |       |      |
| 2.2.5 Gender earnings gap.....59.74 40                  |       |      |
| 2.2.6 Leadership opportunities for women.....30.91 84   |       |      |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>1,555.04</b> |
| GDP (US\$ billions).....               | <b>11.50</b>    |
| GTCI score.....                        | <b>22.70</b>    |
| GTCI score (income group average)..... | <b>24.81</b>    |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW.....20.41 118</b>                             |       |      |
| 3.1 Formal Education.....4.05 121                       |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment.....4.18 100                 |       |      |
| 3.1.2 Tertiary enrolment.....3.33 112                   |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure.....8.71 95        |       |      |
| 3.1.4 Reading, maths, and science.....n/a n/a           |       |      |
| 3.1.5 University ranking.....0.00 78                    |       |      |
| 3.2 Lifelong Learning.....25.27 113                     |       |      |
| 3.2.1 Quality of management schools.....38.73 70        |       |      |
| 3.2.2 Prevalence of training in firms.....12.27 84      |       |      |
| 3.2.3 Employee development.....24.82 98                 |       |      |
| 3.3 Access to Growth Opportunities.....31.90 102        |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority.....31.38 100             |       |      |
| 3.3.2 Personal rights.....51.32 74                      |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks.....54.74 101      |       |      |
| 3.3.4 Use of virtual professional networks.....0.33 116 |       |      |
| 3.3.5 Collaboration within organisations.....31.64 72   |       |      |
| 3.3.6 Collaboration across organisations.....21.97 90   |       |      |

|                                               |  |  |
|-----------------------------------------------|--|--|
| <b>4 RETAIN.....15.85 124</b>                 |  |  |
| 4.1 Sustainability.....14.35 120              |  |  |
| 4.1.1 Pension system.....3.37 99              |  |  |
| 4.1.2 Social protection.....12.01 118         |  |  |
| 4.1.3 Brain retention.....27.67 100           |  |  |
| 4.2 Lifestyle.....17.35 124                   |  |  |
| 4.2.1 Environmental performance.....10.50 119 |  |  |
| 4.2.2 Personal safety.....53.68 80            |  |  |
| 4.2.3 Physician density.....2.00 107          |  |  |
| 4.2.4 Sanitation.....3.23 124                 |  |  |

|                                                                  |  |  |
|------------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....23.82 110</b>           |  |  |
| 5.1 Mid-Level Skills.....15.86 101                               |  |  |
| 5.1.1 Workforce with secondary education.....43.98 62            |  |  |
| 5.1.2 Population with secondary education.....n/a n/a            |  |  |
| 5.1.3 Technicians and associate professionals.....3.13 117       |  |  |
| 5.1.4 Labour productivity per employee.....0.48 103              |  |  |
| 5.2 Employability.....31.78 89                                   |  |  |
| 5.2.1 Ease of finding skilled employees.....44.35 67             |  |  |
| 5.2.2 Relevance of education system to the economy.....18.29 103 |  |  |
| 5.2.3 Skills matching with secondary education.....28.81 100     |  |  |
| 5.2.4 Skills matching with tertiary education.....35.66 83       |  |  |

|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....9.74 106</b>               |  |  |
| 6.1 High-Level Skills.....9.01 115                          |  |  |
| 6.1.1 Workforce with tertiary education.....6.42 106        |  |  |
| 6.1.2 Population with tertiary education.....n/a n/a        |  |  |
| 6.1.3 Professionals.....4.21 113                            |  |  |
| 6.1.4 Researchers.....0.21 97                               |  |  |
| 6.1.5 Senior officials and managers.....3.57 110            |  |  |
| 6.1.6 Availability of scientists and engineers.....30.64 85 |  |  |
| 6.2 Talent Impact.....10.46 90                              |  |  |
| 6.2.1 Innovation output.....20.78 83                        |  |  |
| 6.2.2 High-value exports.....1.17 109                       |  |  |
| 6.2.3 New product entrepreneurial activity.....29.94 53     |  |  |
| 6.2.4 New business density.....0.29 98                      |  |  |
| 6.2.5 Scientific journal articles.....0.12 118              |  |  |

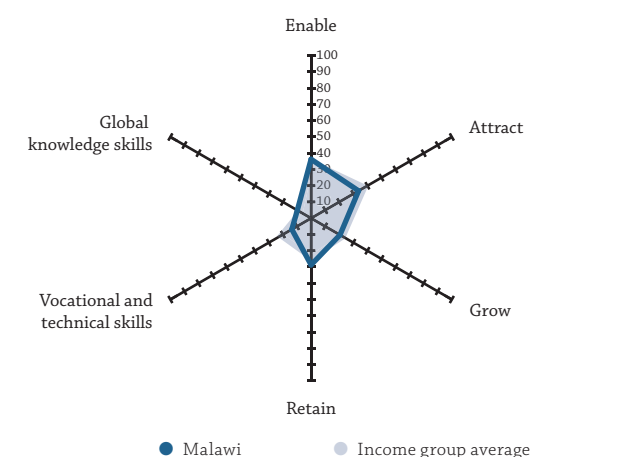
# MALAWI

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>115</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>18.62</b>              |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>1,202.20</b> |
| GDP (US\$ billions) .....               | <b>6.30</b>     |
| GTCI score.....                         | <b>23.79</b>    |
| GTCI score (income group average) ..... | <b>24.81</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank       |
|------------------------------------------------|--------------|------------|
| <b>1 ENABLE.....</b>                           | <b>36.29</b> | <b>106</b> |
| 1.1 Regulatory Landscape.....                  | 38.57        | 98         |
| 1.1.1 Government effectiveness .....           | 27.05        | 107        |
| 1.1.2 Business-government relations .....      | 54.30        | 73         |
| 1.1.3 Political stability .....                | 63.19        | 65         |
| 1.1.4 Regulatory quality .....                 | 27.75        | 113        |
| 1.1.5 Corruption .....                         | 20.55        | 92         |
| 1.2 Market Landscape.....                      | 26.28        | 118        |
| 1.2.1 Competition intensity .....              | 47.51        | 113        |
| 1.2.2 Ease of doing business .....             | 50.41        | 92         |
| 1.2.3 Cluster development .....                | 12.35        | 118        |
| 1.2.4 R&D expenditure .....                    | n/a          | n/a        |
| 1.2.5 ICT infrastructure .....                 | 6.36         | 120        |
| 1.2.6 Technology utilisation .....             | 14.78        | 120        |
| 1.3 Business and Labour Landscape.....         | 44.03        | 90         |
| Labour Market                                  |              |            |
| 1.3.1 Ease of hiring .....                     | 44.33        | 99         |
| 1.3.2 Ease of redundancy .....                 | 100.00       | 1          |
| 1.3.3 Active labour market policies.....       | 14.68        | 117        |
| 1.3.4 Labour-employer cooperation .....        | 29.32        | 93         |
| Management Practice                            |              |            |
| 1.3.5 Professional management.....             | 44.14        | 69         |
| 1.3.6 Relationship of pay to productivity..... | 31.68        | 103        |
| <b>2 ATTRACT.....</b>                          | <b>33.74</b> | <b>108</b> |
| 2.1 External Openness .....                    | 26.83        | 102        |
| Attract Business                               |              |            |
| 2.1.1 FDI and technology transfer.....         | 25.25        | 120        |
| 2.1.2 Prevalence of foreign ownership .....    | 62.91        | 54         |
| Attract People                                 |              |            |
| 2.1.3 Migrant stock.....                       | 2.49         | 94         |
| 2.1.4 International students.....              | 5.60         | 74         |
| 2.1.5 Brain gain.....                          | 37.92        | 78         |
| 2.2 Internal Openness.....                     | 40.65        | 104        |
| Social Inclusion                               |              |            |
| 2.2.1 Tolerance of minorities .....            | 55.29        | 42         |
| 2.2.2 Tolerance of immigrants.....             | 40.54        | 89         |
| 2.2.3 Social mobility.....                     | 37.04        | 99         |
| Gender Equality                                |              |            |
| 2.2.4 Female graduates .....                   | 15.67        | 99         |
| 2.2.5 Gender earnings gap .....                | 70.37        | 14         |
| 2.2.6 Leadership opportunities for women.....  | 24.98        | 96         |

|                                                 | Score        | Rank       |
|-------------------------------------------------|--------------|------------|
| <b>3 GROW.....</b>                              | <b>20.54</b> | <b>116</b> |
| 3.1 Formal Education.....                       | 8.47         | 114        |
| Enrolment                                       |              |            |
| 3.1.1 Vocational enrolment .....                | n/a          | n/a        |
| 3.1.2 Tertiary enrolment.....                   | 0.00         | 118        |
| Quality                                         |              |            |
| 3.1.3 Tertiary education expenditure.....       | 25.40        | 48         |
| 3.1.4 Reading, maths, and science .....         | n/a          | n/a        |
| 3.1.5 University ranking .....                  | 0.00         | 78         |
| 3.2 Lifelong Learning.....                      | 28.26        | 103        |
| 3.2.1 Quality of management schools.....        | 11.93        | 120        |
| 3.2.2 Prevalence of training in firms .....     | 38.92        | 42         |
| 3.2.3 Employee development.....                 | 33.92        | 71         |
| 3.3 Access to Growth Opportunities .....        | 24.91        | 113        |
| Empowerment                                     |              |            |
| 3.3.1 Delegation of authority.....              | 37.84        | 80         |
| 3.3.2 Personal rights.....                      | 63.84        | 54         |
| Collaboration                                   |              |            |
| 3.3.3 Use of virtual social networks.....       | 29.18        | 122        |
| 3.3.4 Use of virtual professional networks..... | 0.94         | 113        |
| 3.3.5 Collaboration within organisations .....  | 9.26         | 122        |
| 3.3.6 Collaboration across organisations .....  | 8.38         | 117        |

|                                      |              |            |
|--------------------------------------|--------------|------------|
| <b>4 RETAIN.....</b>                 | <b>28.70</b> | <b>106</b> |
| 4.1 Sustainability .....             | 25.27        | 106        |
| 4.1.1 Pension system.....            | n/a          | n/a        |
| 4.1.2 Social protection .....        | 13.64        | 115        |
| 4.1.3 Brain retention .....          | 36.91        | 78         |
| 4.2 Lifestyle .....                  | 32.12        | 101        |
| 4.2.1 Environmental performance..... | 36.31        | 98         |
| 4.2.2 Personal safety .....          | 52.41        | 85         |
| 4.2.3 Physician density .....        | 0.00         | 125        |
| 4.2.4 Sanitation .....               | 39.78        | 107        |

|                                                          |              |            |
|----------------------------------------------------------|--------------|------------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>            | <b>13.68</b> | <b>123</b> |
| 5.1 Mid-Level Skills .....                               | 3.33         | 123        |
| 5.1.1 Workforce with secondary education .....           | 9.61         | 105        |
| 5.1.2 Population with secondary education .....          | n/a          | n/a        |
| 5.1.3 Technicians and associate professionals .....      | 0.00         | 119        |
| 5.1.4 Labour productivity per employee .....             | 0.38         | 104        |
| 5.2 Employability.....                                   | 24.02        | 111        |
| 5.2.1 Ease of finding skilled employees .....            | 30.35        | 102        |
| 5.2.2 Relevance of education system to the economy ..... | 23.84        | 93         |
| 5.2.3 Skills matching with secondary education.....      | 14.05        | 121        |
| 5.2.4 Skills matching with tertiary education .....      | 27.84        | 105        |

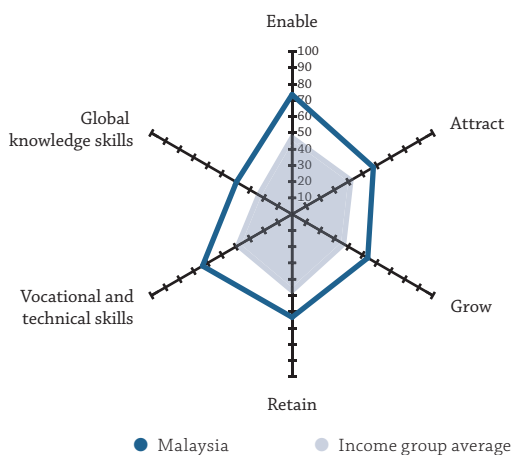
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|------------------------------------------------------|-------------|------------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>9.78</b> | <b>105</b> |
| 6.1 High-Level Skills .....                          | 7.17        | 119        |
| 6.1.1 Workforce with tertiary education .....        | 3.38        | 110        |
| 6.1.2 Population with tertiary education .....       | n/a         | n/a        |
| 6.1.3 Professionals.....                             | 6.74        | 108        |
| 6.1.4 Researchers.....                               | 0.50        | 87         |
| 6.1.5 Senior officials and managers .....            | 2.38        | 115        |
| 6.1.6 Availability of scientists and engineers ..... | 22.84       | 106        |
| 6.2 Talent Impact.....                               | 12.39       | 84         |
| 6.2.1 Innovation output.....                         | 13.20       | 105        |
| 6.2.2 High-value exports .....                       | 3.91        | 94         |
| 6.2.3 New product entrepreneurial activity .....     | 44.09       | 33         |
| 6.2.4 New business density .....                     | 0.34        | 97         |
| 6.2.5 Scientific journal articles.....               | 0.40        | 106        |

# MALAYSIA

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>27</b>                                     |
| Income group.....          | <b>Upper-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>31.62</b>                                  |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....73.61</b>                      | <b>23</b> |      |
| 1.1 Regulatory Landscape.....                  | 65.41     | 35   |
| 1.1.1 Government effectiveness.....            | 67.00     | 37   |
| 1.1.2 Business-government relations.....       | 85.87     | 12   |
| 1.1.3 Political stability.....                 | 66.90     | 59   |
| 1.1.4 Regulatory quality.....                  | 64.83     | 37   |
| 1.1.5 Corruption.....                          | 42.47     | 52   |
| 1.2 Market Landscape.....                      | 70.28     | 22   |
| 1.2.1 Competition intensity.....               | 77.34     | 32   |
| 1.2.2 Ease of doing business.....              | 85.42     | 21   |
| 1.2.3 Cluster development.....                 | 80.44     | 11   |
| 1.2.4 R&D expenditure.....                     | 30.35     | 23   |
| 1.2.5 ICT infrastructure.....                  | 66.79     | 54   |
| 1.2.6 Technology utilisation.....              | 81.34     | 17   |
| 1.3 Business and Labour Landscape.....         | 85.13     | 9    |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 87.50     | 34   |
| 1.3.3 Active labour market policies.....       | 83.17     | 11   |
| 1.3.4 Labour-employer cooperation.....         | 70.71     | 18   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 78.29     | 21   |
| 1.3.6 Relationship of pay to productivity..... | 91.13     | 5    |
| <b>2 ATTRACT.....57.75</b>                     | <b>26</b> |      |
| 2.1 External Openness.....                     | 58.48     | 19   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 81.60     | 12   |
| 2.1.2 Prevalence of foreign ownership.....     | 73.09     | 34   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 17.54     | 43   |
| 2.1.4 International students.....              | 46.74     | 20   |
| 2.1.5 Brain gain.....                          | 73.41     | 14   |
| 2.2 Internal Openness.....                     | 57.03     | 40   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 36.47     | 70   |
| 2.2.2 Tolerance of immigrants.....             | 32.43     | 98   |
| 2.2.3 Social mobility.....                     | 71.25     | 27   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 64.16     | 75   |
| 2.2.5 Gender earnings gap.....                 | 60.10     | 37   |
| 2.2.6 Leadership opportunities for women.....  | 77.78     | 12   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>29,431.47</b> |
| GDP (US\$ billions).....               | <b>314.50</b>    |
| GTCI score.....                        | <b>58.62</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....53.77</b>                         | <b>29</b> |      |
| 3.1 Formal Education.....                       | 36.66     | 47   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 22.73     | 62   |
| 3.1.2 Tertiary enrolment.....                   | 35.79     | 63   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 26.19     | 44   |
| 3.1.4 Reading, maths, and science.....          | 47.44     | 42   |
| 3.1.5 University ranking.....                   | 51.13     | 16   |
| 3.2 Lifelong Learning.....                      | 58.69     | 29   |
| 3.2.1 Quality of management schools.....        | 70.55     | 24   |
| 3.2.2 Prevalence of training in firms.....      | 19.92     | 75   |
| 3.2.3 Employee development.....                 | 85.59     | 9    |
| 3.3 Access to Growth Opportunities.....         | 65.96     | 21   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 76.64     | 18   |
| 3.3.2 Personal rights.....                      | 34.30     | 93   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 85.34     | 23   |
| 3.3.4 Use of virtual professional networks..... | 21.03     | 47   |
| 3.3.5 Collaboration within organisations.....   | 84.49     | 10   |
| 3.3.6 Collaboration across organisations.....   | 93.94     | 3    |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....63.38</b>            | <b>34</b> |    |
| 4.1 Sustainability.....              | 66.61     | 25 |
| 4.1.1 Pension system.....            | 47.96     | 50 |
| 4.1.2 Social protection.....         | 72.00     | 22 |
| 4.1.3 Brain retention.....           | 79.88     | 11 |
| 4.2 Lifestyle.....                   | 60.14     | 60 |
| 4.2.1 Environmental performance..... | 52.99     | 65 |
| 4.2.2 Personal safety.....           | 63.28     | 64 |
| 4.2.3 Physician density.....         | 24.29     | 74 |
| 4.2.4 Sanitation.....                | 100.00    | 1  |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....63.63</b>      | <b>16</b> |    |
| 5.1 Mid-Level Skills.....                               | 46.75     | 49 |
| 5.1.1 Workforce with secondary education.....           | 58.04     | 37 |
| 5.1.2 Population with secondary education.....          | 49.07     | 35 |
| 5.1.3 Technicians and associate professionals.....      | 45.09     | 48 |
| 5.1.4 Labour productivity per employee.....             | 34.82     | 44 |
| 5.2 Employability.....                                  | 80.51     | 11 |
| 5.2.1 Ease of finding skilled employees.....            | 89.38     | 7  |
| 5.2.2 Relevance of education system to the economy..... | 74.52     | 14 |
| 5.2.3 Skills matching with secondary education.....     | 75.31     | 9  |
| 5.2.4 Skills matching with tertiary education.....      | 82.84     | 10 |

|                                                     |           |    |
|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....39.57</b>          | <b>29</b> |    |
| 6.1 High-Level Skills.....                          | 38.08     | 39 |
| 6.1.1 Workforce with tertiary education.....        | 35.51     | 55 |
| 6.1.2 Population with tertiary education.....       | 25.98     | 60 |
| 6.1.3 Professionals.....                            | 33.15     | 51 |
| 6.1.4 Researchers.....                              | 27.50     | 34 |
| 6.1.5 Senior officials and managers.....            | 26.79     | 49 |
| 6.1.6 Availability of scientists and engineers..... | 79.56     | 7  |
| 6.2 Talent Impact.....                              | 41.07     | 25 |
| 6.2.1 Innovation output.....                        | 44.50     | 38 |
| 6.2.2 High-value exports.....                       | 77.99     | 3  |
| 6.2.3 New product entrepreneurial activity.....     | 46.26     | 25 |
| 6.2.4 New business density.....                     | 10.84     | 44 |
| 6.2.5 Scientific journal articles.....              | 25.73     | 38 |

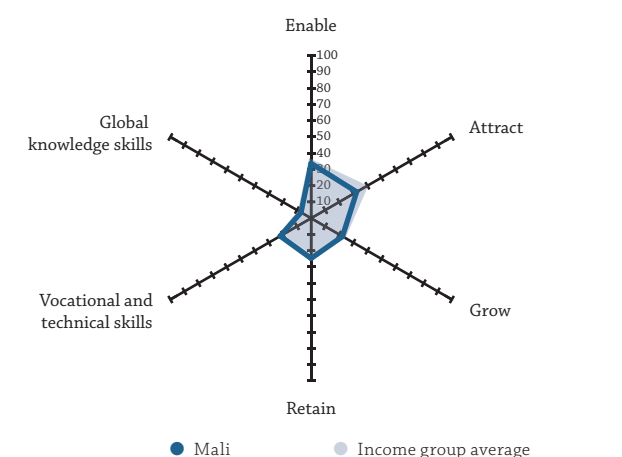
# MALI

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>116</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>18.54</b>              |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>2,211.42</b> |
| GDP (US\$ billions) .....               | <b>15.29</b>    |
| GTCI score.....                         | <b>23.70</b>    |
| GTCI score (income group average) ..... | <b>24.81</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....33.73 113</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 30.96 | 114  |
| 1.1.1 Government effectiveness .....           | 20.60 | 116  |
| 1.1.2 Business-government relations .....      | 51.21 | 75   |
| 1.1.3 Political stability .....                | 28.70 | 116  |
| 1.1.4 Regulatory quality .....                 | 33.73 | 103  |
| 1.1.5 Corruption .....                         | 20.55 | 92   |
| 1.2 Market Landscape.....                      | 30.97 | 113  |
| 1.2.1 Competition intensity .....              | 53.38 | 102  |
| 1.2.2 Ease of doing business .....             | 39.60 | 111  |
| 1.2.3 Cluster development .....                | 34.13 | 75   |
| 1.2.4 R&D expenditure .....                    | 7.07  | 75   |
| 1.2.5 ICT infrastructure .....                 | 18.83 | 109  |
| 1.2.6 Technology utilisation .....             | 32.83 | 108  |
| 1.3 Business and Labour Landscape.....         | 39.25 | 100  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 44.33 | 99   |
| 1.3.2 Ease of redundancy .....                 | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 46.98 | 55   |
| 1.3.4 Labour-employer cooperation .....        | 31.09 | 88   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 25.29 | 113  |
| 1.3.6 Relationship of pay to productivity..... | 37.78 | 88   |
| <b>2 ATTRACT.....32.37 110</b>                 |       |      |
| 2.1 External Openness .....                    | 23.87 | 111  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 40.27 | 101  |
| 2.1.2 Prevalence of foreign ownership .....    | 33.27 | 113  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 4.13  | 83   |
| 2.1.4 International students.....              | 4.18  | 77   |
| 2.1.5 Brain gain.....                          | 37.52 | 80   |
| 2.2 Internal Openness.....                     | 40.86 | 103  |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 22.35 | 96   |
| 2.2.2 Tolerance of immigrants.....             | 93.24 | 5    |
| 2.2.3 Social mobility.....                     | 43.92 | 80   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | n/a   | n/a  |
| 2.2.5 Gender earnings gap .....                | 25.45 | 108  |
| 2.2.6 Leadership opportunities for women.....  | 19.33 | 106  |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....22.31 111</b>                     |       |      |
| 3.1 Formal Education.....                       | 12.19 | 101  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 26.99 | 55   |
| 3.1.2 Tertiary enrolment.....                   | 3.89  | 110  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 17.88 | 71   |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 27.69 | 107  |
| 3.2.1 Quality of management schools.....        | 30.91 | 91   |
| 3.2.2 Prevalence of training in firms .....     | 18.87 | 78   |
| 3.2.3 Employee development.....                 | 33.31 | 73   |
| 3.3 Access to Growth Opportunities .....        | 27.05 | 111  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 22.73 | 118  |
| 3.3.2 Personal rights.....                      | 44.59 | 82   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 32.35 | 119  |
| 3.3.4 Use of virtual professional networks..... | 1.27  | 110  |
| 3.3.5 Collaboration within organisations .....  | 30.58 | 78   |
| 3.3.6 Collaboration across organisations .....  | 30.77 | 70   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....24.73 113</b>        |       |     |
| 4.1 Sustainability .....             | 23.93 | 108 |
| 4.1.1 Pension system.....            | 5.10  | 96  |
| 4.1.2 Social protection .....        | 32.65 | 79  |
| 4.1.3 Brain retention .....          | 34.05 | 88  |
| 4.2 Lifestyle.....                   | 25.52 | 113 |
| 4.2.1 Environmental performance..... | 27.14 | 108 |
| 4.2.2 Personal safety .....          | 48.08 | 91  |
| 4.2.3 Physician density .....        | 1.07  | 114 |
| 4.2.4 Sanitation .....               | 25.81 | 115 |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....21.94 113</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 3.38  | 120 |
| 5.1.1 Workforce with secondary education .....           | 2.04  | 114 |
| 5.1.2 Population with secondary education .....          | 5.56  | 97  |
| 5.1.3 Technicians and associate professionals .....      | 3.57  | 116 |
| 5.1.4 Labour productivity per employee.....              | 2.33  | 98  |
| 5.2 Employability.....                                   | 40.50 | 70  |
| 5.2.1 Ease of finding skilled employees .....            | 53.32 | 56  |
| 5.2.2 Relevance of education system to the economy ..... | 26.42 | 85  |
| 5.2.3 Skills matching with secondary education.....      | 47.77 | 49  |
| 5.2.4 Skills matching with tertiary education .....      | 34.49 | 87  |

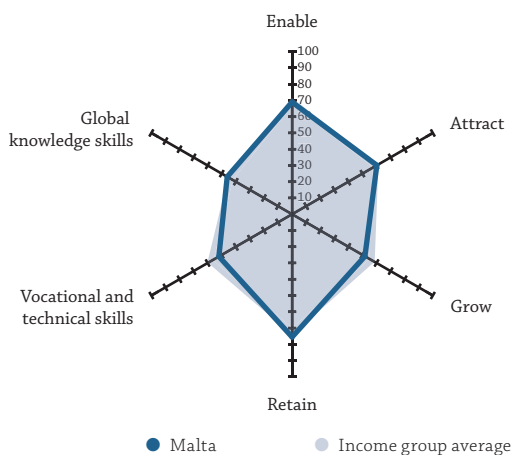
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|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....7.14 118</b>       |       |     |
| 6.1 High-Level Skills .....                          | 6.13  | 121 |
| 6.1.1 Workforce with tertiary education .....        | 1.54  | 114 |
| 6.1.2 Population with tertiary education .....       | 1.70  | 99  |
| 6.1.3 Professionals.....                             | 4.78  | 111 |
| 6.1.4 Researchers.....                               | 0.29  | 94  |
| 6.1.5 Senior officials and managers .....            | 3.57  | 110 |
| 6.1.6 Availability of scientists and engineers ..... | 24.88 | 102 |
| 6.2 Talent Impact.....                               | 8.15  | 104 |
| 6.2.1 Innovation output.....                         | 15.75 | 97  |
| 6.2.2 High-value exports .....                       | 8.54  | 73  |
| 6.2.3 New product entrepreneurial activity .....     | n/a   | n/a |
| 6.2.4 New business density .....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....               | 0.15  | 116 |

# MALTA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>26</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>0.47</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>68.96</b> | <b>26</b> |
| 1.1 Regulatory Landscape.....                  | 71.65        | 26        |
| 1.1.1 Government effectiveness.....            | 68.73        | 35        |
| 1.1.2 Business-government relations.....       | 69.54        | 31        |
| 1.1.3 Political stability.....                 | 89.58        | 11        |
| 1.1.4 Regulatory quality.....                  | 75.60        | 23        |
| 1.1.5 Corruption.....                          | 54.79        | 39        |
| 1.2 Market Landscape.....                      | 65.98        | 26        |
| 1.2.1 Competition intensity.....               | 99.09        | 2         |
| 1.2.2 Ease of doing business.....              | 60.79        | 76        |
| 1.2.3 Cluster development.....                 | 56.89        | 32        |
| 1.2.4 R&D expenditure.....                     | 14.10        | 52        |
| 1.2.5 ICT infrastructure.....                  | 93.38        | 4         |
| 1.2.6 Technology utilisation.....              | 71.62        | 29        |
| 1.3 Business and Labour Landscape.....         | 69.27        | 28        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 72.33        | 50        |
| 1.3.2 Ease of redundancy.....                  | 75.00        | 45        |
| 1.3.3 Active labour market policies.....       | 76.14        | 18        |
| 1.3.4 Labour-employer cooperation.....         | 67.94        | 22        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 61.14        | 31        |
| 1.3.6 Relationship of pay to productivity..... | 63.04        | 39        |
| <b>2 ATTRACT.....</b>                          | <b>60.21</b> | <b>24</b> |
| 2.1 External Openness.....                     | 56.58        | 22        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 78.57        | 16        |
| 2.1.2 Prevalence of foreign ownership.....     | 73.25        | 33        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 21.72        | 39        |
| 2.1.4 International students.....              | 42.42        | 23        |
| 2.1.5 Brain gain.....                          | 66.95        | 20        |
| 2.2 Internal Openness.....                     | 63.84        | 25        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 69.41        | 19        |
| 2.2.2 Tolerance of immigrants.....             | 67.57        | 41        |
| 2.2.3 Social mobility.....                     | 78.67        | 20        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 78.40        | 40        |
| 2.2.5 Gender earnings gap.....                 | 39.55        | 95        |
| 2.2.6 Leadership opportunities for women.....  | 49.45        | 49        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>39,534.92</b> |
| GDP (US\$ billions).....               | <b>12.54</b>     |
| GTCI score.....                        | <b>59.10</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>51.74</b> | <b>33</b> |
| 3.1 Formal Education.....                       | 29.92        | 60        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 18.68        | 72        |
| 3.1.2 Tertiary enrolment.....                   | 39.69        | 53        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 32.74        | 23        |
| 3.1.4 Reading, maths, and science.....          | 58.48        | 37        |
| 3.1.5 University ranking.....                   | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 58.98        | 28        |
| 3.2.1 Quality of management schools.....        | 59.74        | 31        |
| 3.2.2 Prevalence of training in firms.....      | n/a          | n/a       |
| 3.2.3 Employee development.....                 | 58.23        | 32        |
| 3.3 Access to Growth Opportunities.....         | 66.32        | 20        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 61.06        | 29        |
| 3.3.2 Personal rights.....                      | 88.03        | 22        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 88.13        | 14        |
| 3.3.4 Use of virtual professional networks..... | 81.93        | 5         |
| 3.3.5 Collaboration within organisations.....   | 45.42        | 39        |
| 3.3.6 Collaboration across organisations.....   | 33.38        | 60        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>75.55</b> | <b>21</b> |
| 4.1 Sustainability.....              | 67.26        | 24        |
| 4.1.1 Pension system.....            | n/a          | n/a       |
| 4.1.2 Social protection.....         | 69.33        | 24        |
| 4.1.3 Brain retention.....           | 65.19        | 29        |
| 4.2 Lifestyle.....                   | 83.83        | 10        |
| 4.2.1 Environmental performance..... | 89.13        | 4         |
| 4.2.2 Personal safety.....           | n/a          | n/a       |
| 4.2.3 Physician density.....         | 62.37        | 14        |
| 4.2.4 Sanitation.....                | 100.00       | 1         |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>52.01</b> | <b>34</b> |
| 5.1 Mid-Level Skills.....                               | 43.46        | 56        |
| 5.1.1 Workforce with secondary education.....           | 41.47        | 65        |
| 5.1.2 Population with secondary education.....          | 18.12        | 90        |
| 5.1.3 Technicians and associate professionals.....      | 66.07        | 19        |
| 5.1.4 Labour productivity per employee.....             | 48.17        | 25        |
| 5.2 Employability.....                                  | 60.56        | 29        |
| 5.2.1 Ease of finding skilled employees.....            | 40.66        | 75        |
| 5.2.2 Relevance of education system to the economy..... | 68.80        | 19        |
| 5.2.3 Skills matching with secondary education.....     | 64.49        | 22        |
| 5.2.4 Skills matching with tertiary education.....      | 68.28        | 26        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>46.10</b> | <b>22</b> |
| 6.1 High-Level Skills.....                          | 38.01        | 40        |
| 6.1.1 Workforce with tertiary education.....        | 37.66        | 50        |
| 6.1.2 Population with tertiary education.....       | 26.15        | 59        |
| 6.1.3 Professionals.....                            | 46.35        | 33        |
| 6.1.4 Researchers.....                              | 23.33        | 40        |
| 6.1.5 Senior officials and managers.....            | 54.76        | 13        |
| 6.1.6 Availability of scientists and engineers..... | 39.81        | 63        |
| 6.2 Talent Impact.....                              | 54.19        | 12        |
| 6.2.1 Innovation output.....                        | 64.06        | 14        |
| 6.2.2 High-value exports.....                       | 38.97        | 15        |
| 6.2.3 New product entrepreneurial activity.....     | n/a          | n/a       |
| 6.2.4 New business density.....                     | 86.17        | 3         |
| 6.2.5 Scientific journal articles.....              | 27.56        | 36        |

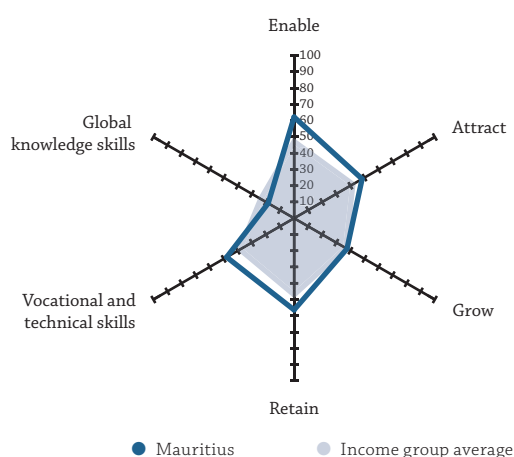
# MAURITIUS

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>47</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>1.26</b>                |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>22,278.49</b> |
| GDP (US\$ billions).....               | <b>13.34</b>     |
| GTCI score.....                        | <b>45.14</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 62.26 32</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 70.71 | 27   |
| 1.1.1 Government effectiveness.....            | 68.98 | 34   |
| 1.1.2 Business-government relations.....       | 76.60 | 20   |
| 1.1.3 Political stability.....                 | 88.89 | 12   |
| 1.1.4 Regulatory quality.....                  | 72.49 | 29   |
| 1.1.5 Corruption.....                          | 46.58 | 44   |
| 1.2 Market Landscape.....                      | 57.79 | 39   |
| 1.2.1 Competition intensity.....               | 74.54 | 43   |
| 1.2.2 Ease of doing business.....              | 83.82 | 22   |
| 1.2.3 Cluster development.....                 | 57.14 | 31   |
| 1.2.4 R&D expenditure.....                     | 3.84  | 88   |
| 1.2.5 ICT infrastructure.....                  | 68.19 | 51   |
| 1.2.6 Technology utilisation.....              | 59.23 | 48   |
| 1.3 Business and Labour Landscape.....         | 58.28 | 39   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 66.67 | 58   |
| 1.3.2 Ease of redundancy.....                  | 62.50 | 64   |
| 1.3.3 Active labour market policies.....       | 55.57 | 38   |
| 1.3.4 Labour-employer cooperation.....         | 55.28 | 35   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 54.39 | 47   |
| 1.3.6 Relationship of pay to productivity..... | 55.26 | 52   |
| <b>2 ATTRACT..... 48.32 42</b>                 |       |      |
| 2.1 External Openness.....                     | 41.19 | 53   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 57.85 | 62   |
| 2.1.2 Prevalence of foreign ownership.....     | 64.88 | 51   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 4.55  | 77   |
| 2.1.4 International students.....              | 22.81 | 42   |
| 2.1.5 Brain gain.....                          | 55.88 | 32   |
| 2.2 Internal Openness.....                     | 55.45 | 43   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 70.59 | 14   |
| 2.2.2 Tolerance of immigrants.....             | 75.68 | 26   |
| 2.2.3 Social mobility.....                     | 57.08 | 40   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap.....                 | 36.80 | 102  |
| 2.2.6 Leadership opportunities for women.....  | 37.12 | 73   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 37.57 59</b>                     |       |      |
| 3.1 Formal Education.....                       | 14.25 | 97   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 19.25 | 70   |
| 3.1.2 Tertiary enrolment.....                   | 31.44 | 66   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 6.31  | 103  |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 46.59 | 50   |
| 3.2.1 Quality of management schools.....        | 51.12 | 40   |
| 3.2.2 Prevalence of training in firms.....      | 29.29 | 59   |
| 3.2.3 Employee development.....                 | 59.37 | 30   |
| 3.3 Access to Growth Opportunities.....         | 51.85 | 35   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 53.62 | 39   |
| 3.3.2 Personal rights.....                      | 80.44 | 30   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 75.02 | 53   |
| 3.3.4 Use of virtual professional networks..... | 29.61 | 32   |
| 3.3.5 Collaboration within organisations.....   | 42.78 | 43   |
| 3.3.6 Collaboration across organisations.....   | 29.65 | 72   |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 56.40 50</b>        |       |    |
| 4.1 Sustainability.....              | 49.11 | 46 |
| 4.1.1 Pension system.....            | 52.04 | 49 |
| 4.1.2 Social protection.....         | 47.04 | 49 |
| 4.1.3 Brain retention.....           | 48.26 | 47 |
| 4.2 Lifestyle.....                   | 63.68 | 52 |
| 4.2.1 Environmental performance..... | 48.67 | 76 |
| 4.2.2 Personal safety.....           | 81.76 | 34 |
| 4.2.3 Physician density.....         | 31.83 | 57 |
| 4.2.4 Sanitation.....                | 92.47 | 62 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 47.90 43</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 48.23 | 45  |
| 5.1.1 Workforce with secondary education.....           | 52.67 | 46  |
| 5.1.2 Population with secondary education.....          | 43.37 | 44  |
| 5.1.3 Technicians and associate professionals.....      | 48.66 | 45  |
| 5.1.4 Labour productivity per employee.....             | n/a   | n/a |
| 5.2 Employability.....                                  | 47.57 | 52  |
| 5.2.1 Ease of finding skilled employees.....            | 45.53 | 65  |
| 5.2.2 Relevance of education system to the economy..... | 46.61 | 46  |
| 5.2.3 Skills matching with secondary education.....     | 51.29 | 40  |
| 5.2.4 Skills matching with tertiary education.....      | 46.85 | 66  |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 18.40 81</b>      |       |     |
| 6.1 High-Level Skills.....                          | 18.70 | 89  |
| 6.1.1 Workforce with tertiary education.....        | 16.49 | 90  |
| 6.1.2 Population with tertiary education.....       | 6.96  | 93  |
| 6.1.3 Professionals.....                            | 24.16 | 68  |
| 6.1.4 Researchers.....                              | 2.12  | 78  |
| 6.1.5 Senior officials and managers.....            | 25.00 | 54  |
| 6.1.6 Availability of scientists and engineers..... | 37.50 | 69  |
| 6.2 Talent Impact.....                              | 18.09 | 66  |
| 6.2.1 Innovation output.....                        | 20.26 | 87  |
| 6.2.2 High-value exports.....                       | 0.12  | 119 |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 47.08 | 13  |
| 6.2.5 Scientific journal articles.....              | 4.91  | 69  |

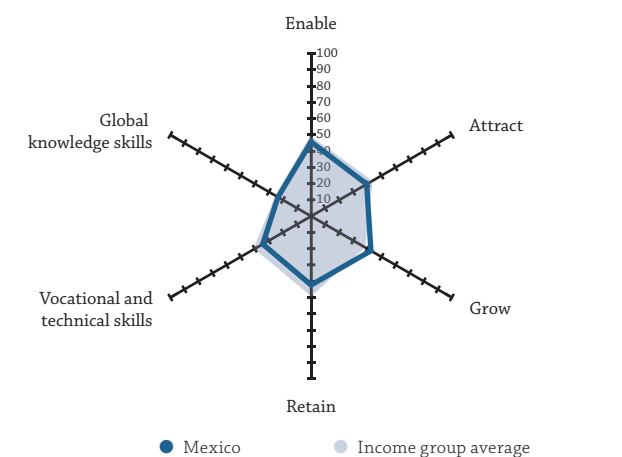


# MEXICO

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>70</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>129.16</b>                          |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....45.75</b>                      | <b>82</b> |      |
| 1.1 Regulatory Landscape.....                  | 46.84     | 75   |
| 1.1.1 Government effectiveness.....            | 48.64     | 60   |
| 1.1.2 Business-government relations.....       | 66.23     | 38   |
| 1.1.3 Political stability.....                 | 46.76     | 97   |
| 1.1.4 Regulatory quality.....                  | 54.78     | 54   |
| 1.1.5 Corruption.....                          | 17.81     | 102  |
| 1.2 Market Landscape.....                      | 51.52     | 55   |
| 1.2.1 Competition intensity.....               | 70.55     | 59   |
| 1.2.2 Ease of doing business.....              | 74.35     | 44   |
| 1.2.3 Cluster development.....                 | 52.51     | 36   |
| 1.2.4 R&D expenditure.....                     | 11.46     | 60   |
| 1.2.5 ICT infrastructure.....                  | 45.80     | 76   |
| 1.2.6 Technology utilisation.....              | 54.43     | 53   |
| 1.3 Business and Labour Landscape.....         | 38.90     | 102  |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 66.67     | 58   |
| 1.3.2 Ease of redundancy.....                  | 12.50     | 117  |
| 1.3.3 Active labour market policies.....       | 27.14     | 92   |
| 1.3.4 Labour-employer cooperation.....         | 42.01     | 61   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 43.63     | 71   |
| 1.3.6 Relationship of pay to productivity..... | 41.44     | 79   |
| <b>2 ATTRACT.....39.49</b>                     | <b>87</b> |      |
| 2.1 External Openness.....                     | 40.40     | 60   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 73.42     | 25   |
| 2.1.2 Prevalence of foreign ownership.....     | 79.40     | 24   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 1.81      | 98   |
| 2.1.4 International students.....              | 1.36      | 94   |
| 2.1.5 Brain gain.....                          | 45.99     | 52   |
| 2.2 Internal Openness.....                     | 38.59     | 107  |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 36.47     | 70   |
| 2.2.2 Tolerance of immigrants.....             | 45.95     | 80   |
| 2.2.3 Social mobility.....                     | 40.34     | 88   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 62.14     | 76   |
| 2.2.5 Gender earnings gap.....                 | 39.78     | 93   |
| 2.2.6 Leadership opportunities for women.....  | 6.85      | 121  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>18,149.10</b> |
| GDP (US\$ billions).....               | <b>1,149.92</b>  |
| GTCI score.....                        | <b>38.00</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....42.51</b>                         | <b>42</b> |      |
| 3.1 Formal Education.....                       | 38.27     | 42   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 57.54     | 21   |
| 3.1.2 Tertiary enrolment.....                   | 29.79     | 68   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 26.35     | 43   |
| 3.1.4 Reading, maths, and science.....          | 36.05     | 54   |
| 3.1.5 University ranking.....                   | 41.60     | 29   |
| 3.2 Lifelong Learning.....                      | 45.77     | 53   |
| 3.2.1 Quality of management schools.....        | 41.60     | 63   |
| 3.2.2 Prevalence of training in firms.....      | 62.53     | 20   |
| 3.2.3 Employee development.....                 | 33.18     | 74   |
| 3.3 Access to Growth Opportunities.....         | 43.50     | 53   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 46.27     | 63   |
| 3.3.2 Personal rights.....                      | 61.27     | 57   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 67.82     | 74   |
| 3.3.4 Use of virtual professional networks..... | 18.05     | 55   |
| 3.3.5 Collaboration within organisations.....   | 28.63     | 83   |
| 3.3.6 Collaboration across organisations.....   | 38.98     | 45   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....42.33</b>            | <b>79</b> |     |
| 4.1 Sustainability.....              | 32.72     | 79  |
| 4.1.1 Pension system.....            | 25.51     | 67  |
| 4.1.2 Social protection.....         | 29.58     | 87  |
| 4.1.3 Brain retention.....           | 43.08     | 59  |
| 4.2 Lifestyle.....                   | 51.94     | 81  |
| 4.2.1 Environmental performance..... | 53.78     | 63  |
| 4.2.2 Personal safety.....           | 30.32     | 113 |
| 4.2.3 Physician density.....         | 35.48     | 56  |
| 4.2.4 Sanitation.....                | 88.17     | 71  |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....34.34</b>      | <b>74</b> |     |
| 5.1 Mid-Level Skills.....                               | 27.06     | 85  |
| 5.1.1 Workforce with secondary education.....           | 28.86     | 81  |
| 5.1.2 Population with secondary education.....          | 24.11     | 75  |
| 5.1.3 Technicians and associate professionals.....      | 30.80     | 70  |
| 5.1.4 Labour productivity per employee.....             | 24.45     | 56  |
| 5.2 Employability.....                                  | 41.62     | 67  |
| 5.2.1 Ease of finding skilled employees.....            | 54.67     | 54  |
| 5.2.2 Relevance of education system to the economy..... | 19.33     | 101 |
| 5.2.3 Skills matching with secondary education.....     | 40.71     | 65  |
| 5.2.4 Skills matching with tertiary education.....      | 51.78     | 50  |

|                                                     |           |    |
|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....23.54</b>          | <b>66</b> |    |
| 6.1 High-Level Skills.....                          | 23.73     | 76 |
| 6.1.1 Workforce with tertiary education.....        | 25.68     | 73 |
| 6.1.2 Population with tertiary education.....       | 25.64     | 61 |
| 6.1.3 Professionals.....                            | 24.44     | 67 |
| 6.1.4 Researchers.....                              | 2.87      | 71 |
| 6.1.5 Senior officials and managers.....            | 17.86     | 67 |
| 6.1.6 Availability of scientists and engineers..... | 45.91     | 51 |
| 6.2 Talent Impact.....                              | 23.36     | 53 |
| 6.2.1 Innovation output.....                        | 31.15     | 60 |
| 6.2.2 High-value exports.....                       | 27.74     | 29 |
| 6.2.3 New product entrepreneurial activity.....     | 50.86     | 17 |
| 6.2.4 New business density.....                     | 2.55      | 80 |
| 6.2.5 Scientific journal articles.....              | 4.47      | 71 |

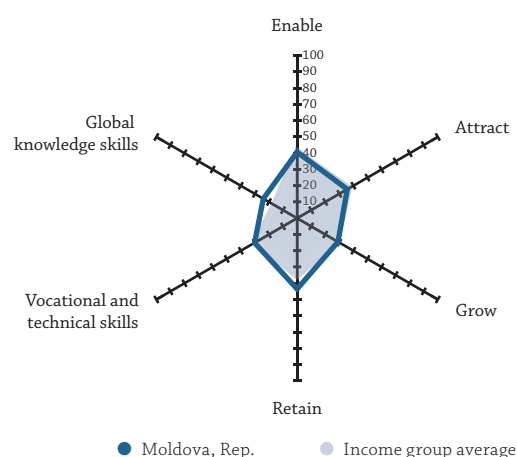
# MOLDOVA, REP.

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>89</b>                  |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>3.55</b>                |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>5,697.83</b> |
| GDP (US\$ billions).....               | <b>8.13</b>     |
| GTCI score.....                        | <b>33.86</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....40.72 92</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 38.67 | 97   |
| 1.1.1 Government effectiveness.....            | 29.78 | 99   |
| 1.1.2 Business-government relations.....       | 39.96 | 102  |
| 1.1.3 Political stability.....                 | 58.10 | 77   |
| 1.1.4 Regulatory quality.....                  | 44.98 | 74   |
| 1.1.5 Corruption.....                          | 20.55 | 92   |
| 1.2 Market Landscape.....                      | 42.45 | 80   |
| 1.2.1 Competition intensity.....               | 57.51 | 89   |
| 1.2.2 Ease of doing business.....              | 75.66 | 39   |
| 1.2.3 Cluster development.....                 | 2.73  | 123  |
| 1.2.4 R&D expenditure.....                     | 7.46  | 74   |
| 1.2.5 ICT infrastructure.....                  | 74.81 | 35   |
| 1.2.6 Technology utilisation.....              | 36.51 | 100  |
| 1.3 Business and Labour Landscape.....         | 41.05 | 95   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 55.67 | 76   |
| 1.3.2 Ease of redundancy.....                  | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 28.20 | 89   |
| 1.3.4 Labour-employer cooperation.....         | 37.29 | 75   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 29.51 | 105  |
| 1.3.6 Relationship of pay to productivity..... | 45.60 | 65   |
| <b>2 ATTRACT.....35.66 100</b>                 |       |      |
| 2.1 External Openness.....                     | 23.66 | 112  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 45.92 | 92   |
| 2.1.2 Prevalence of foreign ownership.....     | 34.71 | 111  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 7.00  | 65   |
| 2.1.4 International students.....              | 18.18 | 52   |
| 2.1.5 Brain gain.....                          | 12.49 | 122  |
| 2.2 Internal Openness.....                     | 47.66 | 70   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 32.94 | 76   |
| 2.2.2 Tolerance of immigrants.....             | 31.08 | 100  |
| 2.2.3 Social mobility.....                     | 29.89 | 114  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 79.95 | 34   |
| 2.2.5 Gender earnings gap.....                 | 70.37 | 14   |
| 2.2.6 Leadership opportunities for women.....  | 41.72 | 61   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....29.05 87</b>                      |       |      |
| 3.1 Formal Education.....                       | 25.02 | 68   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 27.82 | 54   |
| 3.1.2 Tertiary enrolment.....                   | 33.40 | 65   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 25.18 | 50   |
| 3.1.4 Reading, maths, and science.....          | 38.70 | 51   |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 24.16 | 116  |
| 3.2.1 Quality of management schools.....        | 18.27 | 112  |
| 3.2.2 Prevalence of training in firms.....      | 38.26 | 43   |
| 3.2.3 Employee development.....                 | 15.95 | 118  |
| 3.3 Access to Growth Opportunities.....         | 37.97 | 74   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 32.46 | 98   |
| 3.3.2 Personal rights.....                      | 59.94 | 60   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 66.55 | 78   |
| 3.3.4 Use of virtual professional networks..... | n/a   | n/a  |
| 3.3.5 Collaboration within organisations.....   | 24.99 | 96   |
| 3.3.6 Collaboration across organisations.....   | 5.92  | 118  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....43.52 74</b>         |       |     |
| 4.1 Sustainability.....              | 27.30 | 98  |
| 4.1.1 Pension system.....            | 58.16 | 44  |
| 4.1.2 Social protection.....         | 17.34 | 111 |
| 4.1.3 Brain retention.....           | 6.40  | 122 |
| 4.2 Lifestyle.....                   | 59.73 | 62  |
| 4.2.1 Environmental performance..... | 40.91 | 88  |
| 4.2.2 Personal safety.....           | 70.70 | 47  |
| 4.2.3 Physician density.....         | 50.99 | 31  |
| 4.2.4 Sanitation.....                | 76.34 | 85  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....30.21 91</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 35.22 | 70  |
| 5.1.1 Workforce with secondary education.....           | 46.36 | 60  |
| 5.1.2 Population with secondary education.....          | 59.34 | 24  |
| 5.1.3 Technicians and associate professionals.....      | 27.23 | 75  |
| 5.1.4 Labour productivity per employee.....             | 7.94  | 85  |
| 5.2 Employability.....                                  | 25.21 | 107 |
| 5.2.1 Ease of finding skilled employees.....            | 19.59 | 119 |
| 5.2.2 Relevance of education system to the economy..... | 25.30 | 89  |
| 5.2.3 Skills matching with secondary education.....     | 34.38 | 84  |
| 5.2.4 Skills matching with tertiary education.....      | 21.55 | 113 |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....24.00 65</b>       |       |     |
| 6.1 High-Level Skills.....                          | 32.07 | 52  |
| 6.1.1 Workforce with tertiary education.....        | 36.96 | 51  |
| 6.1.2 Population with tertiary education.....       | 54.33 | 15  |
| 6.1.3 Professionals.....                            | 37.08 | 47  |
| 6.1.4 Researchers.....                              | 8.72  | 54  |
| 6.1.5 Senior officials and managers.....            | 40.48 | 29  |
| 6.1.6 Availability of scientists and engineers..... | 14.84 | 115 |
| 6.2 Talent Impact.....                              | 15.94 | 71  |
| 6.2.1 Innovation output.....                        | 46.45 | 36  |
| 6.2.2 High-value exports.....                       | 5.63  | 85  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 8.39  | 52  |
| 6.2.5 Scientific journal articles.....              | 3.30  | 76  |

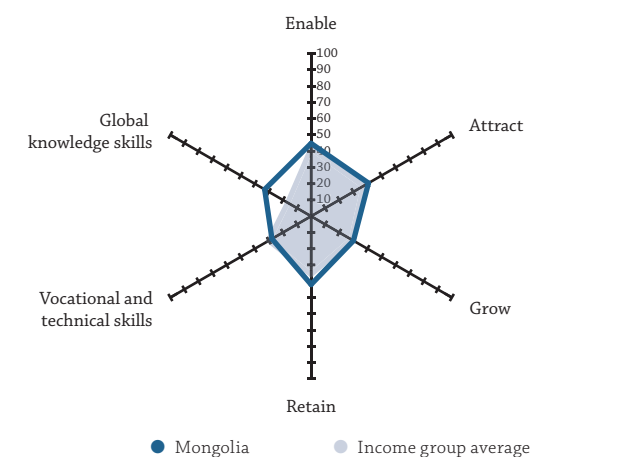


# MONGOLIA

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>77</b>                                     |
| Income group.....          | <b>Lower-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>3.08</b>                                   |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 44.81 84</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 45.30  | 77   |
| 1.1.1 Government effectiveness.....            | 42.43  | 74   |
| 1.1.2 Business-government relations.....       | 27.15  | 120  |
| 1.1.3 Political stability.....                 | 83.56  | 25   |
| 1.1.4 Regulatory quality.....                  | 45.93  | 71   |
| 1.1.5 Corruption.....                          | 27.40  | 80   |
| 1.2 Market Landscape.....                      | 35.34  | 102  |
| 1.2.1 Competition intensity.....               | 49.48  | 109  |
| 1.2.2 Ease of doing business.....              | 68.53  | 57   |
| 1.2.3 Cluster development.....                 | 7.14   | 122  |
| 1.2.4 R&D expenditure.....                     | 3.98   | 87   |
| 1.2.5 ICT infrastructure.....                  | 38.93  | 88   |
| 1.2.6 Technology utilisation.....              | 44.00  | 79   |
| 1.3 Business and Labour Landscape.....         | 53.78  | 59   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 89.00  | 27   |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 28.46  | 88   |
| 1.3.4 Labour-employer cooperation.....         | 37.29  | 75   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 33.30  | 96   |
| 1.3.6 Relationship of pay to productivity..... | 34.60  | 97   |
| <b>2 ATTRACT..... 40.77 79</b>                 |        |      |
| 2.1 External Openness.....                     | 23.28  | 114  |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 43.78  | 98   |
| 2.1.2 Prevalence of foreign ownership.....     | 40.44  | 105  |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 1.08   | 108  |
| 2.1.4 International students.....              | 4.36   | 76   |
| 2.1.5 Brain gain.....                          | 26.72  | 100  |
| 2.2 Internal Openness.....                     | 58.26  | 36   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 68.24  | 21   |
| 2.2.2 Tolerance of immigrants.....             | 17.57  | 111  |
| 2.2.3 Social mobility.....                     | 57.98  | 38   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 82.73  | 28   |
| 2.2.5 Gender earnings gap.....                 | 69.18  | 16   |
| 2.2.6 Leadership opportunities for women.....  | 53.85  | 43   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>12,999.53</b> |
| GDP (US\$ billions).....               | <b>11.49</b>     |
| GTCI score.....                        | <b>36.41</b>     |
| GTCI score (income group average)..... | <b>31.64</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 30.10 85</b>                     |       |      |
| 3.1 Formal Education.....                       | 22.30 | 75   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 24.06 | 59   |
| 3.1.2 Tertiary enrolment.....                   | 52.68 | 31   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 12.45 | 87   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 35.46 | 75   |
| 3.2.1 Quality of management schools.....        | 6.99  | 122  |
| 3.2.2 Prevalence of training in firms.....      | 75.86 | 7    |
| 3.2.3 Employee development.....                 | 23.54 | 101  |
| 3.3 Access to Growth Opportunities.....         | 32.54 | 98   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 9.84  | 124  |
| 3.3.2 Personal rights.....                      | 66.49 | 50   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 70.70 | 64   |
| 3.3.4 Use of virtual professional networks..... | 6.90  | 86   |
| 3.3.5 Collaboration within organisations.....   | 39.80 | 52   |
| 3.3.6 Collaboration across organisations.....   | 1.48  | 121  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 42.00 81</b>        |       |     |
| 4.1 Sustainability.....              | 28.09 | 94  |
| 4.1.1 Pension system.....            | 31.63 | 63  |
| 4.1.2 Social protection.....         | 34.47 | 75  |
| 4.1.3 Brain retention.....           | 18.18 | 117 |
| 4.2 Lifestyle.....                   | 55.90 | 70  |
| 4.2.1 Environmental performance..... | 50.14 | 70  |
| 4.2.2 Personal safety.....           | 65.55 | 58  |
| 4.2.3 Physician density.....         | 52.01 | 28  |
| 4.2.4 Sanitation.....                | 55.91 | 100 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 27.81 100</b> |       |     |
| 5.1 Mid-Level Skills.....                               | 40.14 | 61  |
| 5.1.1 Workforce with secondary education.....           | 64.65 | 28  |
| 5.1.2 Population with secondary education.....          | 45.51 | 42  |
| 5.1.3 Technicians and associate professionals.....      | 10.27 | 101 |
| 5.1.4 Labour productivity per employee.....             | n/a   | n/a |
| 5.2 Employability.....                                  | 15.48 | 122 |
| 5.2.1 Ease of finding skilled employees.....            | 0.00  | 125 |
| 5.2.2 Relevance of education system to the economy..... | 14.20 | 108 |
| 5.2.3 Skills matching with secondary education.....     | 47.74 | 50  |
| 5.2.4 Skills matching with tertiary education.....      | 0.00  | 125 |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 32.97 40</b>      |       |     |
| 6.1 High-Level Skills.....                          | 41.23 | 37  |
| 6.1.1 Workforce with tertiary education.....        | 46.99 | 34  |
| 6.1.2 Population with tertiary education.....       | 38.37 | 38  |
| 6.1.3 Professionals.....                            | 42.98 | 39  |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 36.90 | 33  |
| 6.1.6 Availability of scientists and engineers..... | 40.92 | 59  |
| 6.2 Talent Impact.....                              | 24.70 | 51  |
| 6.2.1 Innovation output.....                        | 37.41 | 46  |
| 6.2.2 High-value exports.....                       | 29.61 | 25  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 30.36 | 22  |
| 6.2.5 Scientific journal articles.....              | 1.42  | 87  |

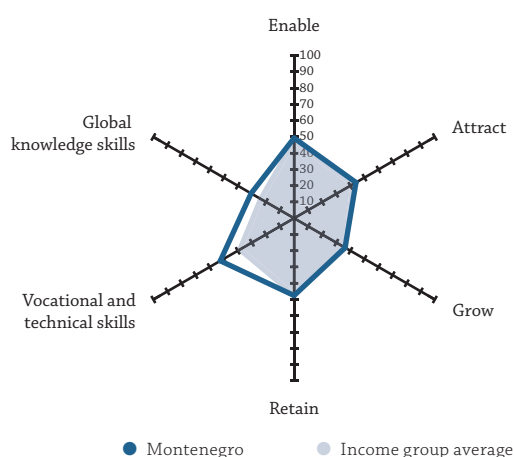
# MONTENEGRO

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>51</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>0.62</b>                |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>18,765.11</b> |
| GDP (US\$ billions) .....               | <b>4.77</b>      |
| GTCI score.....                         | <b>43.34</b>     |
| GTCI score (income group average) ..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>1 ENABLE.....49.35</b>                       | <b>61</b> |      |
| 1.1 Regulatory Landscape.....                   | 54.35     | 51   |
| 1.1.1 Government effectiveness .....            | 47.64     | 63   |
| 1.1.2 Business-government relations .....       | 61.59     | 52   |
| 1.1.3 Political stability .....                 | 68.29     | 58   |
| 1.1.4 Regulatory quality .....                  | 53.11     | 56   |
| 1.1.5 Corruption .....                          | 41.10     | 53   |
| 1.2 Market Landscape.....                       | 43.68     | 77   |
| 1.2.1 Competition intensity .....               | 47.45     | 114  |
| 1.2.2 Ease of doing business .....              | 75.99     | 37   |
| 1.2.3 Cluster development .....                 | 18.22     | 102  |
| 1.2.4 R&D expenditure .....                     | 8.47      | 68   |
| 1.2.5 ICT infrastructure .....                  | 68.07     | 52   |
| 1.2.6 Technology utilisation .....              | 43.90     | 81   |
| 1.3 Business and Labour Landscape.....          | 50.02     | 70   |
| Labour Market                                   |           |      |
| 1.3.1 Ease of hiring .....                      | 55.67     | 76   |
| 1.3.2 Ease of redundancy .....                  | 87.50     | 34   |
| 1.3.3 Active labour market policies .....       | 50.59     | 50   |
| 1.3.4 Labour-employer cooperation .....         | 29.64     | 92   |
| Management Practice                             |           |      |
| 1.3.5 Professional management .....             | 33.35     | 95   |
| 1.3.6 Relationship of pay to productivity ..... | 43.34     | 72   |
| <b>2 ATTRACT.....43.98</b>                      | <b>58</b> |      |
| 2.1 External Openness .....                     | 40.04     | 62   |
| Attract Business                                |           |      |
| 2.1.1 FDI and technology transfer .....         | 55.84     | 66   |
| 2.1.2 Prevalence of foreign ownership .....     | 53.61     | 81   |
| Attract People                                  |           |      |
| 2.1.3 Migrant stock .....                       | 23.20     | 35   |
| 2.1.4 International students .....              | n/a       | n/a  |
| 2.1.5 Brain gain .....                          | 27.52     | 98   |
| 2.2 Internal Openness.....                      | 47.92     | 69   |
| Social Inclusion                                |           |      |
| 2.2.1 Tolerance of minorities .....             | 25.88     | 89   |
| 2.2.2 Tolerance of immigrants .....             | 52.70     | 67   |
| 2.2.3 Social mobility.....                      | 42.92     | 82   |
| Gender Equality                                 |           |      |
| 2.2.4 Female graduates .....                    | 79.87     | 35   |
| 2.2.5 Gender earnings gap .....                 | 48.75     | 78   |
| 2.2.6 Leadership opportunities for women .....  | 37.39     | 71   |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....36.18</b>                         | <b>67</b> |      |
| 3.1 Formal Education.....                       | 37.80     | 44   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment .....                | 67.39     | 15   |
| 3.1.2 Tertiary enrolment.....                   | 46.33     | 44   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | n/a       | n/a  |
| 3.1.4 Reading, maths, and science .....         | 37.48     | 52   |
| 3.1.5 University ranking .....                  | 0.00      | 78   |
| 3.2 Lifelong Learning.....                      | 29.52     | 100  |
| 3.2.1 Quality of management schools.....        | 39.05     | 69   |
| 3.2.2 Prevalence of training in firms .....     | 26.78     | 64   |
| 3.2.3 Employee development.....                 | 22.73     | 103  |
| 3.3 Access to Growth Opportunities .....        | 41.23     | 60   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 30.80     | 102  |
| 3.3.2 Personal rights.....                      | 56.65     | 67   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 78.57     | 43   |
| 3.3.4 Use of virtual professional networks..... | 18.97     | 52   |
| 3.3.5 Collaboration within organisations .....  | 35.06     | 67   |
| 3.3.6 Collaboration across organisations .....  | 27.32     | 75   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....47.57</b>            | <b>64</b> |     |
| 4.1 Sustainability .....             | 30.80     | 89  |
| 4.1.1 Pension system.....            | n/a       | n/a |
| 4.1.2 Social protection .....        | 30.34     | 83  |
| 4.1.3 Brain retention .....          | 31.25     | 94  |
| 4.2 Lifestyle.....                   | 64.35     | 49  |
| 4.2.1 Environmental performance..... | 56.51     | 58  |
| 4.2.2 Personal safety .....          | 67.92     | 55  |
| 4.2.3 Physician density .....        | 37.28     | 52  |
| 4.2.4 Sanitation .....               | 95.70     | 48  |

|                                                          |           |     |
|----------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....52.41</b>       | <b>33</b> |     |
| 5.1 Mid-Level Skills .....                               | 70.80     | 5   |
| 5.1.1 Workforce with secondary education .....           | 88.43     | 7   |
| 5.1.2 Population with secondary education .....          | 75.32     | 7   |
| 5.1.3 Technicians and associate professionals .....      | 48.66     | 45  |
| 5.1.4 Labour productivity per employee .....             | n/a       | n/a |
| 5.2 Employability.....                                   | 34.02     | 84  |
| 5.2.1 Ease of finding skilled employees .....            | 32.27     | 98  |
| 5.2.2 Relevance of education system to the economy ..... | 39.60     | 54  |
| 5.2.3 Skills matching with secondary education.....      | 36.27     | 78  |
| 5.2.4 Skills matching with tertiary education .....      | 27.94     | 104 |

|                                                      |              |           |
|------------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>30.55</b> | <b>48</b> |
| 6.1 High-Level Skills .....                          | 33.39        | 49        |
| 6.1.1 Workforce with tertiary education .....        | 36.91        | 52        |
| 6.1.2 Population with tertiary education .....       | 31.24        | 49        |
| 6.1.3 Professionals .....                            | 54.49        | 20        |
| 6.1.4 Researchers.....                               | 10.02        | 53        |
| 6.1.5 Senior officials and managers .....            | 35.71        | 35        |
| 6.1.6 Availability of scientists and engineers ..... | 31.95        | 83        |
| 6.2 Talent Impact.....                               | 27.71        | 45        |
| 6.2.1 Innovation output.....                         | 34.32        | 54        |
| 6.2.2 High-value exports .....                       | n/a          | n/a       |
| 6.2.3 New product entrepreneurial activity .....     | n/a          | n/a       |
| 6.2.4 New business density .....                     | 32.24        | 21        |
| 6.2.5 Scientific journal articles.....               | 16.56        | 46        |

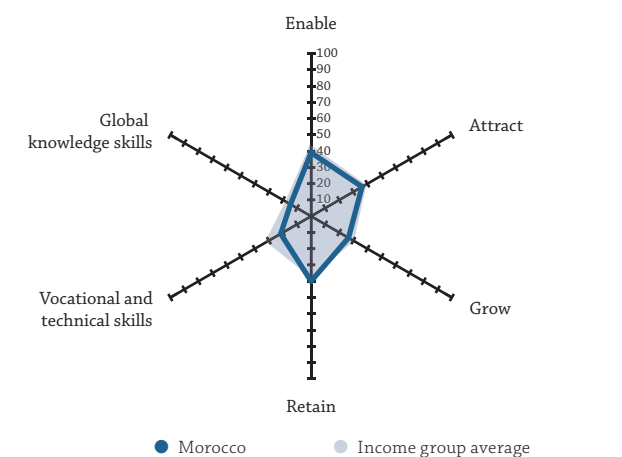
# MOROCCO

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>100</b>                              |
| Income group.....          | <b>Lower-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>35.74</b>                            |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>8,217.46</b> |
| GDP (US\$ billions) .....               | <b>109.14</b>   |
| GTCI score.....                         | <b>29.68</b>    |
| GTCI score (income group average) ..... | <b>31.64</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....39.13 100</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 47.52 | 70   |
| 1.1.1 Government effectiveness .....           | 42.68 | 73   |
| 1.1.2 Business-government relations .....      | 61.81 | 50   |
| 1.1.3 Political stability .....                | 57.87 | 78   |
| 1.1.4 Regulatory quality .....                 | 42.34 | 82   |
| 1.1.5 Corruption .....                         | 32.88 | 64   |
| 1.2 Market Landscape.....                      | 50.20 | 59   |
| 1.2.1 Competition intensity .....              | 70.46 | 60   |
| 1.2.2 Ease of doing business .....             | 66.52 | 63   |
| 1.2.3 Cluster development .....                | 40.10 | 57   |
| 1.2.4 R&D expenditure .....                    | 16.51 | 47   |
| 1.2.5 ICT infrastructure .....                 | 55.73 | 67   |
| 1.2.6 Technology utilisation .....             | 51.90 | 58   |
| 1.3 Business and Labour Landscape.....         | 19.67 | 123  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 0.00  | 121  |
| 1.3.2 Ease of redundancy .....                 | 0.00  | 122  |
| 1.3.3 Active labour market policies.....       | 18.88 | 108  |
| 1.3.4 Labour-employer cooperation .....        | 22.67 | 106  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 40.77 | 75   |
| 1.3.6 Relationship of pay to productivity..... | 35.72 | 91   |
| <b>2 ATTRACT.....36.19 97</b>                  |       |      |
| 2.1 External Openness .....                    | 36.54 | 72   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 62.51 | 49   |
| 2.1.2 Prevalence of foreign ownership .....    | 69.57 | 41   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 0.41  | 119  |
| 2.1.4 International students.....              | 8.68  | 70   |
| 2.1.5 Brain gain.....                          | 41.54 | 65   |
| 2.2 Internal Openness.....                     | 35.85 | 115  |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 28.24 | 84   |
| 2.2.2 Tolerance of immigrants.....             | 54.05 | 64   |
| 2.2.3 Social mobility.....                     | 48.95 | 65   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | 48.97 | 88   |
| 2.2.5 Gender earnings gap .....                | 12.07 | 114  |
| 2.2.6 Leadership opportunities for women.....  | 22.80 | 100  |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....26.57 96</b>                      |       |      |
| 3.1 Formal Education.....                       | 18.41 | 84   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 12.63 | 83   |
| 3.1.2 Tertiary enrolment.....                   | 25.75 | 76   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 24.54 | 52   |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 10.70 | 73   |
| 3.2 Lifelong Learning.....                      | 28.65 | 101  |
| 3.2.1 Quality of management schools.....        | 36.07 | 80   |
| 3.2.2 Prevalence of training in firms .....     | 30.21 | 57   |
| 3.2.3 Employee development.....                 | 19.68 | 110  |
| 3.3 Access to Growth Opportunities .....        | 32.66 | 95   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 35.03 | 91   |
| 3.3.2 Personal rights.....                      | 36.47 | 90   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 67.62 | 76   |
| 3.3.4 Use of virtual professional networks..... | 10.05 | 71   |
| 3.3.5 Collaboration within organisations .....  | 32.49 | 69   |
| 3.3.6 Collaboration across organisations .....  | 14.33 | 108  |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN.....39.96 88</b>         |       |    |
| 4.1 Sustainability .....             | 27.60 | 96 |
| 4.1.1 Pension system.....            | 22.45 | 72 |
| 4.1.2 Social protection .....        | 25.19 | 93 |
| 4.1.3 Brain retention .....          | 35.16 | 85 |
| 4.2 Lifestyle.....                   | 52.31 | 78 |
| 4.2.1 Environmental performance..... | 60.08 | 49 |
| 4.2.2 Personal safety .....          | 57.82 | 74 |
| 4.2.3 Physician density .....        | 9.62  | 94 |
| 4.2.4 Sanitation .....               | 81.72 | 81 |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....21.59 115</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 18.86 | 96  |
| 5.1.1 Workforce with secondary education .....           | 26.05 | 85  |
| 5.1.2 Population with secondary education .....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals .....      | 18.75 | 87  |
| 5.1.4 Labour productivity per employee.....              | 11.78 | 77  |
| 5.2 Employability.....                                   | 24.31 | 108 |
| 5.2.1 Ease of finding skilled employees .....            | 34.40 | 90  |
| 5.2.2 Relevance of education system to the economy ..... | 12.07 | 113 |
| 5.2.3 Skills matching with secondary education.....      | 26.12 | 108 |
| 5.2.4 Skills matching with tertiary education .....      | 24.67 | 110 |

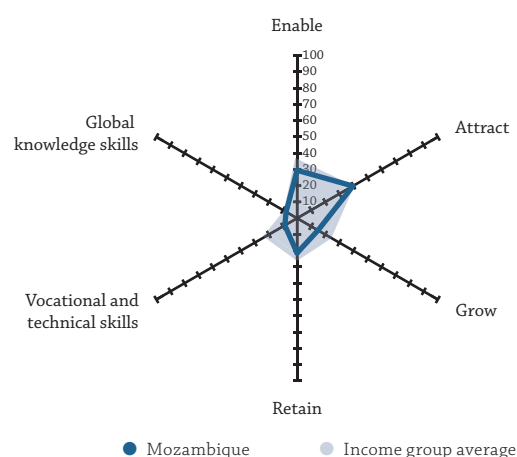
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|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....14.64 93</b>       |       |     |
| 6.1 High-Level Skills .....                          | 15.06 | 98  |
| 6.1.1 Workforce with tertiary education .....        | 12.97 | 93  |
| 6.1.2 Population with tertiary education .....       | n/a   | n/a |
| 6.1.3 Professionals.....                             | 3.37  | 116 |
| 6.1.4 Researchers.....                               | 12.88 | 47  |
| 6.1.5 Senior officials and managers .....            | 2.98  | 112 |
| 6.1.6 Availability of scientists and engineers ..... | 43.11 | 58  |
| 6.2 Talent Impact.....                               | 14.22 | 79  |
| 6.2.1 Innovation output.....                         | 26.34 | 68  |
| 6.2.2 High-value exports .....                       | 6.66  | 82  |
| 6.2.3 New product entrepreneurial activity .....     | 25.67 | 59  |
| 6.2.4 New business density .....                     | 7.90  | 57  |
| 6.2.5 Scientific journal articles.....               | 4.52  | 70  |

# MOZAMBIQUE

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>122</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>29.67</b>              |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....29.49 120</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 33.56 | 106  |
| 1.1.1 Government effectiveness.....            | 24.07 | 114  |
| 1.1.2 Business-government relations.....       | 60.04 | 58   |
| 1.1.3 Political stability.....                 | 40.28 | 110  |
| 1.1.4 Regulatory quality.....                  | 31.10 | 107  |
| 1.1.5 Corruption.....                          | 12.33 | 116  |
| 1.2 Market Landscape.....                      | 25.76 | 120  |
| 1.2.1 Competition intensity.....               | 48.75 | 111  |
| 1.2.2 Ease of doing business.....              | 41.54 | 108  |
| 1.2.3 Cluster development.....                 | 16.67 | 107  |
| 1.2.4 R&D expenditure.....                     | 7.61  | 72   |
| 1.2.5 ICT infrastructure.....                  | 10.81 | 115  |
| 1.2.6 Technology utilisation.....              | 29.18 | 113  |
| 1.3 Business and Labour Landscape.....         | 29.13 | 118  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 33.33 | 107  |
| 1.3.2 Ease of redundancy.....                  | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 13.52 | 119  |
| 1.3.4 Labour-employer cooperation.....         | 19.47 | 113  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 21.71 | 120  |
| 1.3.6 Relationship of pay to productivity..... | 11.76 | 123  |
| <b>2 ATTRACT.....39.65 85</b>                  |       |      |
| 2.1 External Openness.....                     | 29.00 | 100  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 42.18 | 99   |
| 2.1.2 Prevalence of foreign ownership.....     | 57.33 | 66   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 1.58  | 102  |
| 2.1.4 International students.....              | 1.78  | 89   |
| 2.1.5 Brain gain.....                          | 42.16 | 64   |
| 2.2 Internal Openness.....                     | 50.31 | 59   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 49.41 | 51   |
| 2.2.2 Tolerance of immigrants.....             | 67.57 | 41   |
| 2.2.3 Social mobility.....                     | 29.70 | 115  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 45.77 | 91   |
| 2.2.5 Gender earnings gap.....                 | 82.32 | 6    |
| 2.2.6 Leadership opportunities for women.....  | 27.06 | 92   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>1,247.28</b> |
| GDP (US\$ billions).....               | <b>12.33</b>    |
| GTGI score.....                        | <b>20.32</b>    |
| GTGI score (income group average)..... | <b>24.81</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....14.86 124</b>                     |       |      |
| 3.1 Formal Education.....                       | 8.89  | 113  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 10.12 | 86   |
| 3.1.2 Tertiary enrolment.....                   | 5.18  | 108  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 20.26 | 62   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 11.87 | 124  |
| 3.2.1 Quality of management schools.....        | 3.12  | 124  |
| 3.2.2 Prevalence of training in firms.....      | 24.67 | 70   |
| 3.2.3 Employee development.....                 | 7.82  | 124  |
| 3.3 Access to Growth Opportunities.....         | 23.83 | 114  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 22.81 | 117  |
| 3.3.2 Personal rights.....                      | 45.77 | 79   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 43.39 | 113  |
| 3.3.4 Use of virtual professional networks..... | 1.11  | 111  |
| 3.3.5 Collaboration within organisations.....   | 13.82 | 116  |
| 3.3.6 Collaboration across organisations.....   | 16.09 | 104  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....21.39 117</b>        |       |     |
| 4.1 Sustainability.....              | 19.45 | 114 |
| 4.1.1 Pension system.....            | 0.00  | 110 |
| 4.1.2 Social protection.....         | 23.73 | 98  |
| 4.1.3 Brain retention.....           | 34.60 | 86  |
| 4.2 Lifestyle.....                   | 23.33 | 118 |
| 4.2.1 Environmental performance..... | 31.57 | 104 |
| 4.2.2 Personal safety.....           | 42.87 | 101 |
| 4.2.3 Physician density.....         | 0.59  | 119 |
| 4.2.4 Sanitation.....                | 18.28 | 118 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....8.71 125</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 3.33  | 121 |
| 5.1.1 Workforce with secondary education.....           | n/a   | n/a |
| 5.1.2 Population with secondary education.....          | 3.28  | 100 |
| 5.1.3 Technicians and associate professionals.....      | 5.80  | 111 |
| 5.1.4 Labour productivity per employee.....             | 0.91  | 101 |
| 5.2 Employability.....                                  | 14.08 | 124 |
| 5.2.1 Ease of finding skilled employees.....            | 21.04 | 118 |
| 5.2.2 Relevance of education system to the economy..... | 12.30 | 112 |
| 5.2.3 Skills matching with secondary education.....     | 12.76 | 123 |
| 5.2.4 Skills matching with tertiary education.....      | 10.24 | 121 |

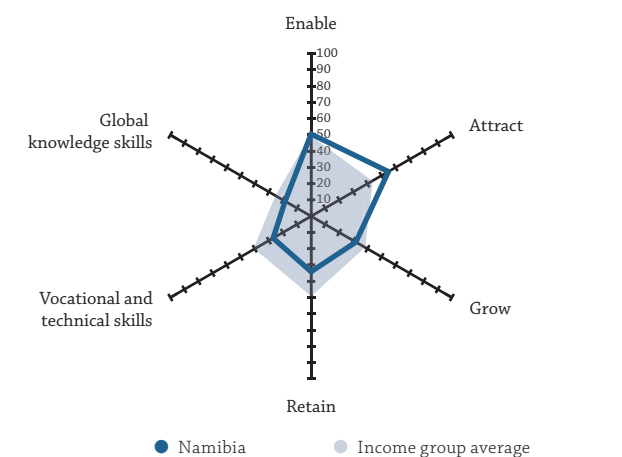
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|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....7.80 116</b>       |       |     |
| 6.1 High-Level Skills.....                          | 4.14  | 124 |
| 6.1.1 Workforce with tertiary education.....        | n/a   | n/a |
| 6.1.2 Population with tertiary education.....       | 1.02  | 102 |
| 6.1.3 Professionals.....                            | 3.93  | 114 |
| 6.1.4 Researchers.....                              | 0.42  | 89  |
| 6.1.5 Senior officials and managers.....            | 0.60  | 121 |
| 6.1.6 Availability of scientists and engineers..... | 14.75 | 117 |
| 6.2 Talent Impact.....                              | 11.45 | 87  |
| 6.2.1 Innovation output.....                        | 13.19 | 106 |
| 6.2.2 High-value exports.....                       | 21.07 | 41  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....              | 0.10  | 122 |

# NAMIBIA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>78</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>2.53</b>                |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>50.56</b> | <b>58</b> |
| 1.1 Regulatory Landscape.....                  | 57.20        | 47        |
| 1.1.1 Government effectiveness.....            | 49.38        | 59        |
| 1.1.2 Business-government relations.....       | 62.47        | 45        |
| 1.1.3 Political stability.....                 | 81.71        | 31        |
| 1.1.4 Regulatory quality.....                  | 44.50        | 76        |
| 1.1.5 Corruption.....                          | 47.95        | 43        |
| 1.2 Market Landscape.....                      | 37.93        | 95        |
| 1.2.1 Competition intensity.....               | 56.09        | 94        |
| 1.2.2 Ease of doing business.....              | 52.21        | 90        |
| 1.2.3 Cluster development.....                 | 28.95        | 85        |
| 1.2.4 R&D expenditure.....                     | 7.67         | 71        |
| 1.2.5 ICT infrastructure.....                  | 34.48        | 93        |
| 1.2.6 Technology utilisation.....              | 48.19        | 64        |
| 1.3 Business and Labour Landscape.....         | 56.55        | 48        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 100.00       | 1         |
| 1.3.2 Ease of redundancy.....                  | 75.00        | 45        |
| 1.3.3 Active labour market policies.....       | 25.65        | 99        |
| 1.3.4 Labour-employer cooperation.....         | 43.01        | 57        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 53.36        | 51        |
| 1.3.6 Relationship of pay to productivity..... | 42.26        | 76        |
| <b>2 ATTRACT.....</b>                          | <b>54.92</b> | <b>31</b> |
| 2.1 External Openness.....                     | 46.86        | 35        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 53.82        | 70        |
| 2.1.2 Prevalence of foreign ownership.....     | 72.64        | 36        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 7.61         | 62        |
| 2.1.4 International students.....              | 51.19        | 18        |
| 2.1.5 Brain gain.....                          | 49.02        | 44        |
| 2.2 Internal Openness.....                     | 62.98        | 27        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 44.71        | 57        |
| 2.2.2 Tolerance of immigrants.....             | 56.76        | 61        |
| 2.2.3 Social mobility.....                     | 53.88        | 51        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 94.62        | 6         |
| 2.2.5 Gender earnings gap.....                 | 85.42        | 3         |
| 2.2.6 Leadership opportunities for women.....  | 42.47        | 59        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>10,475.52</b> |
| GDP (US\$ billions).....               | <b>13.24</b>     |
| GTCI score.....                        | <b>36.14</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>31.82</b> | <b>80</b> |
| 3.1 Formal Education.....                       | 17.60        | 90        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | n/a          | n/a       |
| 3.1.2 Tertiary enrolment.....                   | 7.06         | 103       |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 45.73        | 9         |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 0.00         | 78        |
| 3.2 Lifelong Learning.....                      | 33.87        | 83        |
| 3.2.1 Quality of management schools.....        | 23.17        | 109       |
| 3.2.2 Prevalence of training in firms.....      | 29.02        | 61        |
| 3.2.3 Employee development.....                 | 49.43        | 41        |
| 3.3 Access to Growth Opportunities.....         | 43.98        | 50        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 55.82        | 36        |
| 3.3.2 Personal rights.....                      | 62.55        | 56        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 70.93        | 62        |
| 3.3.4 Use of virtual professional networks..... | 16.39        | 61        |
| 3.3.5 Collaboration within organisations.....   | 31.20        | 75        |
| 3.3.6 Collaboration across organisations.....   | 27.01        | 77        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>34.11</b> | <b>97</b> |
| 4.1 Sustainability.....              | 32.83        | 78        |
| 4.1.1 Pension system.....            | 8.16         | 88        |
| 4.1.2 Social protection.....         | 43.17        | 53        |
| 4.1.3 Brain retention.....           | 47.17        | 51        |
| 4.2 Lifestyle.....                   | 35.39        | 97        |
| 4.2.1 Environmental performance..... | 51.73        | 67        |
| 4.2.2 Personal safety.....           | 55.11        | 77        |
| 4.2.3 Physician density.....         | 5.68         | 103       |
| 4.2.4 Sanitation.....                | 29.03        | 113       |

|                                                         |              |            |
|---------------------------------------------------------|--------------|------------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>26.97</b> | <b>101</b> |
| 5.1 Mid-Level Skills.....                               | 24.25        | 89         |
| 5.1.1 Workforce with secondary education.....           | 23.95        | 91         |
| 5.1.2 Population with secondary education.....          | n/a          | n/a        |
| 5.1.3 Technicians and associate professionals.....      | 24.55        | 82         |
| 5.1.4 Labour productivity per employee.....             | n/a          | n/a        |
| 5.2 Employability.....                                  | 27.69        | 96         |
| 5.2.1 Ease of finding skilled employees.....            | 29.81        | 109        |
| 5.2.2 Relevance of education system to the economy..... | 26.32        | 86         |
| 5.2.3 Skills matching with secondary education.....     | 34.49        | 83         |
| 5.2.4 Skills matching with tertiary education.....      | 30.13        | 96         |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>18.46</b> | <b>79</b> |
| 6.1 High-Level Skills.....                          | 18.46        | 90        |
| 6.1.1 Workforce with tertiary education.....        | 17.89        | 86        |
| 6.1.2 Population with tertiary education.....       | n/a          | n/a       |
| 6.1.3 Professionals.....                            | 22.75        | 72        |
| 6.1.4 Researchers.....                              | 1.65         | 81        |
| 6.1.5 Senior officials and managers.....            | 25.00        | 54        |
| 6.1.6 Availability of scientists and engineers..... | 25.03        | 100       |
| 6.2 Talent Impact.....                              | 18.46        | 64        |
| 6.2.1 Innovation output.....                        | 14.42        | 100       |
| 6.2.2 High-value exports.....                       | 3.98         | 93        |
| 6.2.3 New product entrepreneurial activity.....     | 67.04        | 9         |
| 6.2.4 New business density.....                     | 5.20         | 67        |
| 6.2.5 Scientific journal articles.....              | 1.66         | 85        |

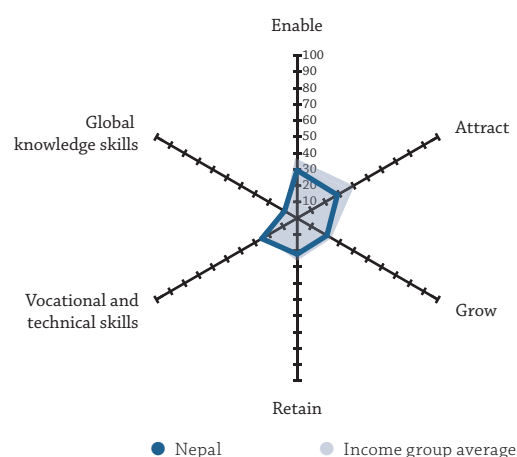
# NEPAL

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>120</b>                       |
| Income group.....          | <b>Low income</b>                |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>29.30</b>                     |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>2,681.84</b> |
| GDP (US\$ billions) .....               | <b>24.47</b>    |
| GTCI score.....                         | <b>22.57</b>    |
| GTCI score (income group average) ..... | <b>24.81</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....29.51 119</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 33.23 | 107  |
| 1.1.1 Government effectiveness .....           | 25.06 | 112  |
| 1.1.2 Business-government relations .....      | 44.59 | 96   |
| 1.1.3 Political stability .....                | 46.30 | 98   |
| 1.1.4 Regulatory quality .....                 | 29.67 | 109  |
| 1.1.5 Corruption .....                         | 20.55 | 92   |
| 1.2 Market Landscape.....                      | 32.05 | 109  |
| 1.2.1 Competition intensity .....              | 58.48 | 86   |
| 1.2.2 Ease of doing business .....             | 52.23 | 89   |
| 1.2.3 Cluster development .....                | 25.94 | 94   |
| 1.2.4 R&D expenditure .....                    | 6.78  | 76   |
| 1.2.5 ICT infrastructure .....                 | 24.68 | 103  |
| 1.2.6 Technology utilisation .....             | 24.19 | 117  |
| 1.3 Business and Labour Landscape.....         | 23.26 | 122  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 33.33 | 107  |
| 1.3.2 Ease of redundancy .....                 | 12.50 | 117  |
| 1.3.3 Active labour market policies.....       | 26.16 | 97   |
| 1.3.4 Labour-employer cooperation .....        | 12.50 | 122  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 24.39 | 115  |
| 1.3.6 Relationship of pay to productivity..... | 30.66 | 105  |
| <b>2 ATTRACT.....28.60 120</b>                 |       |      |
| 2.1 External Openness .....                    | 14.70 | 123  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 28.16 | 119  |
| 2.1.2 Prevalence of foreign ownership .....    | 17.38 | 123  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 3.40  | 89   |
| 2.1.4 International students.....              | 0.00  | 103  |
| 2.1.5 Brain gain.....                          | 24.58 | 105  |
| 2.2 Internal Openness.....                     | 42.49 | 94   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 3.53  | 120  |
| 2.2.2 Tolerance of immigrants.....             | 85.14 | 12   |
| 2.2.3 Social mobility.....                     | 37.95 | 98   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | 50.74 | 86   |
| 2.2.5 Gender earnings gap .....                | 58.66 | 42   |
| 2.2.6 Leadership opportunities for women.....  | 18.92 | 108  |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....21.20 115</b>                     |       |      |
| 3.1 Formal Education.....                       | 4.68  | 119  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 1.28  | 109  |
| 3.1.2 Tertiary enrolment.....                   | 9.11  | 96   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 8.33  | 98   |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 30.81 | 91   |
| 3.2.1 Quality of management schools.....        | 36.36 | 76   |
| 3.2.2 Prevalence of training in firms .....     | 37.60 | 46   |
| 3.2.3 Employee development.....                 | 18.47 | 113  |
| 3.3 Access to Growth Opportunities .....        | 28.12 | 110  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 30.66 | 103  |
| 3.3.2 Personal rights.....                      | 49.04 | 75   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 49.50 | 108  |
| 3.3.4 Use of virtual professional networks..... | 1.91  | 105  |
| 3.3.5 Collaboration within organisations .....  | 19.07 | 106  |
| 3.3.6 Collaboration across organisations .....  | 18.52 | 97   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....22.12 115</b>        |       |     |
| 4.1 Sustainability .....             | 12.30 | 122 |
| 4.1.1 Pension system.....            | 1.02  | 107 |
| 4.1.2 Social protection .....        | 11.84 | 119 |
| 4.1.3 Brain retention .....          | 24.05 | 104 |
| 4.2 Lifestyle .....                  | 31.94 | 102 |
| 4.2.1 Environmental performance..... | 6.68  | 120 |
| 4.2.2 Personal safety .....          | 69.83 | 51  |
| 4.2.3 Physician density .....        | 9.30  | 95  |
| 4.2.4 Sanitation .....               | 41.94 | 106 |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....25.07 107</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 14.62 | 104 |
| 5.1.1 Workforce with secondary education .....           | 14.74 | 100 |
| 5.1.2 Population with secondary education .....          | 21.54 | 82  |
| 5.1.3 Technicians and associate professionals .....      | 7.59  | 106 |
| 5.1.4 Labour productivity per employee.....              | n/a   | n/a |
| 5.2 Employability.....                                   | 35.53 | 80  |
| 5.2.1 Ease of finding skilled employees .....            | 36.33 | 88  |
| 5.2.2 Relevance of education system to the economy ..... | 35.88 | 64  |
| 5.2.3 Skills matching with secondary education.....      | 34.92 | 81  |
| 5.2.4 Skills matching with tertiary education .....      | 34.97 | 84  |

|                                                      |       |     |
|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....8.92 110</b>       |       |     |
| 6.1 High-Level Skills .....                          | 13.21 | 101 |
| 6.1.1 Workforce with tertiary education .....        | 17.75 | 87  |
| 6.1.2 Population with tertiary education .....       | 14.43 | 82  |
| 6.1.3 Professionals.....                             | 3.09  | 117 |
| 6.1.4 Researchers.....                               | n/a   | n/a |
| 6.1.5 Senior officials and managers .....            | 2.38  | 115 |
| 6.1.6 Availability of scientists and engineers ..... | 28.39 | 91  |
| 6.2 Talent Impact.....                               | 4.64  | 116 |
| 6.2.1 Innovation output.....                         | 12.04 | 110 |
| 6.2.2 High-value exports .....                       | 1.12  | 111 |
| 6.2.3 New product entrepreneurial activity .....     | n/a   | n/a |
| 6.2.4 New business density .....                     | 4.67  | 70  |
| 6.2.5 Scientific journal articles.....               | 0.71  | 98  |

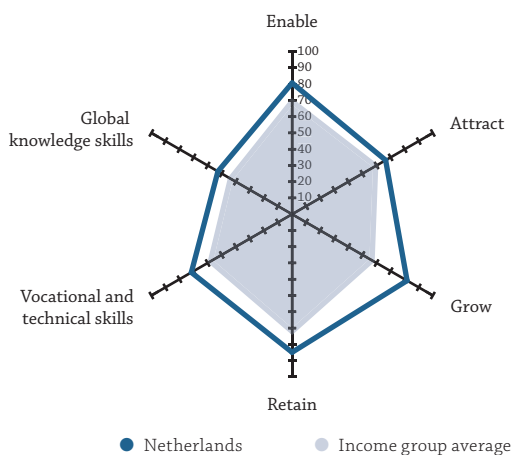


# NETHERLANDS

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>8</b>           |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>17.13</b>       |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....80.74 13</b>                   |        |      |
| 1.1 Regulatory Landscape.....                  | 88.13  | 8    |
| 1.1.1 Government effectiveness.....            | 90.82  | 7    |
| 1.1.2 Business-government relations.....       | 79.03  | 18   |
| 1.1.3 Political stability.....                 | 85.19  | 21   |
| 1.1.4 Regulatory quality.....                  | 95.22  | 3    |
| 1.1.5 Corruption.....                          | 90.41  | 8    |
| 1.2 Market Landscape.....                      | 82.69  | 7    |
| 1.2.1 Competition intensity.....               | 92.18  | 5    |
| 1.2.2 Ease of doing business.....              | 81.11  | 29   |
| 1.2.3 Cluster development.....                 | 90.54  | 4    |
| 1.2.4 R&D expenditure.....                     | 47.62  | 16   |
| 1.2.5 ICT infrastructure.....                  | 88.68  | 9    |
| 1.2.6 Technology utilisation.....              | 96.00  | 3    |
| 1.3 Business and Labour Landscape.....         | 71.39  | 24   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 66.67  | 58   |
| 1.3.2 Ease of redundancy.....                  | 12.50  | 117  |
| 1.3.3 Active labour market policies.....       | 83.32  | 10   |
| 1.3.4 Labour-employer cooperation.....         | 91.83  | 5    |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 100.00 | 1    |
| 1.3.6 Relationship of pay to productivity..... | 74.01  | 18   |
| <b>2 ATTRACT.....66.47 16</b>                  |        |      |
| 2.1 External Openness.....                     | 63.74  | 12   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 84.00  | 9    |
| 2.1.2 Prevalence of foreign ownership.....     | 78.49  | 25   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 24.82  | 32   |
| 2.1.4 International students.....              | 54.09  | 15   |
| 2.1.5 Brain gain.....                          | 77.29  | 10   |
| 2.2 Internal Openness.....                     | 69.21  | 17   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 63.53  | 27   |
| 2.2.2 Tolerance of immigrants.....             | 83.78  | 18   |
| 2.2.3 Social mobility.....                     | 90.53  | 10   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 71.81  | 56   |
| 2.2.5 Gender earnings gap.....                 | 37.87  | 100  |
| 2.2.6 Leadership opportunities for women.....  | 67.72  | 23   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>52,941.12</b> |
| GDP (US\$ billions).....               | <b>826.20</b>    |
| GTCI score.....                        | <b>73.02</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....81.69 3</b>                       |       |      |
| 3.1 Formal Education.....                       | 65.92 | 4    |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 75.74 | 10   |
| 3.1.2 Tertiary enrolment.....                   | 65.73 | 16   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 39.93 | 13   |
| 3.1.4 Reading, maths, and science.....          | 79.45 | 11   |
| 3.1.5 University ranking.....                   | 68.73 | 12   |
| 3.2 Lifelong Learning.....                      | 88.38 | 3    |
| 3.2.1 Quality of management schools.....        | 89.76 | 3    |
| 3.2.2 Prevalence of training in firms.....      | n/a   | n/a  |
| 3.2.3 Employee development.....                 | 87.00 | 7    |
| 3.3 Access to Growth Opportunities.....         | 90.77 | 2    |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 88.48 | 6    |
| 3.3.2 Personal rights.....                      | 94.81 | 7    |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 98.27 | 2    |
| 3.3.4 Use of virtual professional networks..... | 87.99 | 3    |
| 3.3.5 Collaboration within organisations.....   | 89.75 | 6    |
| 3.3.6 Collaboration across organisations.....   | 85.35 | 5    |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN.....84.95 7</b>          |       |    |
| 4.1 Sustainability.....              | 88.15 | 5  |
| 4.1.1 Pension system.....            | 90.82 | 15 |
| 4.1.2 Social protection.....         | 90.04 | 9  |
| 4.1.3 Brain retention.....           | 83.58 | 7  |
| 4.2 Lifestyle.....                   | 81.76 | 14 |
| 4.2.1 Environmental performance..... | 80.06 | 18 |
| 4.2.2 Personal safety.....           | 93.63 | 16 |
| 4.2.3 Physician density.....         | 55.48 | 22 |
| 4.2.4 Sanitation.....                | 97.85 | 37 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....71.57 6</b>    |       |    |
| 5.1 Mid-Level Skills.....                               | 58.37 | 25 |
| 5.1.1 Workforce with secondary education.....           | 55.22 | 41 |
| 5.1.2 Population with secondary education.....          | 53.92 | 30 |
| 5.1.3 Technicians and associate professionals.....      | 69.20 | 17 |
| 5.1.4 Labour productivity per employee.....             | 55.13 | 15 |
| 5.2 Employability.....                                  | 84.77 | 5  |
| 5.2.1 Ease of finding skilled employees.....            | 86.27 | 11 |
| 5.2.2 Relevance of education system to the economy..... | 81.25 | 6  |
| 5.2.3 Skills matching with secondary education.....     | 84.49 | 4  |
| 5.2.4 Skills matching with tertiary education.....      | 87.06 | 5  |

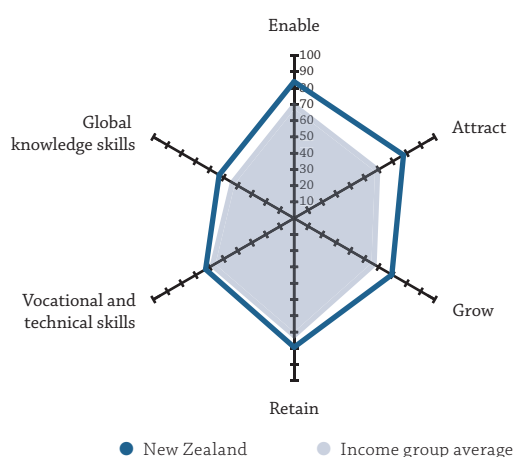
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|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....52.70 17</b>       |       |    |
| 6.1 High-Level Skills.....                          | 54.83 | 20 |
| 6.1.1 Workforce with tertiary education.....        | 53.07 | 27 |
| 6.1.2 Population with tertiary education.....       | 50.08 | 22 |
| 6.1.3 Professionals.....                            | 70.51 | 5  |
| 6.1.4 Researchers.....                              | 58.66 | 14 |
| 6.1.5 Senior officials and managers.....            | 30.95 | 41 |
| 6.1.6 Availability of scientists and engineers..... | 65.68 | 19 |
| 6.2 Talent Impact.....                              | 50.58 | 14 |
| 6.2.1 Innovation output.....                        | 88.28 | 2  |
| 6.2.2 High-value exports.....                       | 32.26 | 22 |
| 6.2.3 New product entrepreneurial activity.....     | 33.09 | 51 |
| 6.2.4 New business density.....                     | 29.20 | 23 |
| 6.2.5 Scientific journal articles.....              | 70.03 | 9  |

# NEW ZEALAND

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>11</b>                                     |
| Income group.....          | <b>High income</b>                            |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>4.79</b>                                   |

GTCI 2019 Country Profile by Pillar



|                                                | Score    | Rank |
|------------------------------------------------|----------|------|
| <b>1 ENABLE..... 84.03</b>                     | <b>5</b> |      |
| 1.1 Regulatory Landscape.....                  | 95.02    | 2    |
| 1.1.1 Government effectiveness.....            | 91.32    | 5    |
| 1.1.2 Business-government relations.....       | 88.08    | 9    |
| 1.1.3 Political stability.....                 | 99.07    | 2    |
| 1.1.4 Regulatory quality.....                  | 96.65    | 2    |
| 1.1.5 Corruption.....                          | 100.00   | 1    |
| 1.2 Market Landscape.....                      | 70.07    | 23   |
| 1.2.1 Competition intensity.....               | 75.10    | 42   |
| 1.2.2 Ease of doing business.....              | 100.00   | 1    |
| 1.2.3 Cluster development.....                 | 48.67    | 42   |
| 1.2.4 R&D expenditure.....                     | 29.80    | 26   |
| 1.2.5 ICT infrastructure.....                  | 84.73    | 15   |
| 1.2.6 Technology utilisation.....              | 82.14    | 16   |
| 1.3 Business and Labour Landscape.....         | 86.99    | 6    |
| Labour Market                                  |          |      |
| 1.3.1 Ease of hiring.....                      | 89.00    | 27   |
| 1.3.2 Ease of redundancy.....                  | 87.50    | 34   |
| 1.3.3 Active labour market policies.....       | 76.70    | 16   |
| 1.3.4 Labour-employer cooperation.....         | 88.57    | 6    |
| Management Practice                            |          |      |
| 1.3.5 Professional management.....             | 97.40    | 2    |
| 1.3.6 Relationship of pay to productivity..... | 82.75    | 9    |
| <b>2 ATTRACT..... 77.74</b>                    | <b>4</b> |      |
| 2.1 External Openness.....                     | 77.05    | 7    |
| Attract Business                               |          |      |
| 2.1.1 FDI and technology transfer.....         | 76.17    | 21   |
| 2.1.2 Prevalence of foreign ownership.....     | 81.99    | 20   |
| Attract People                                 |          |      |
| 2.1.3 Migrant stock.....                       | 46.77    | 15   |
| 2.1.4 International students.....              | 100.00   | 1    |
| 2.1.5 Brain gain.....                          | 80.31    | 8    |
| 2.2 Internal Openness.....                     | 78.44    | 7    |
| Social Inclusion                               |          |      |
| 2.2.1 Tolerance of minorities.....             | 70.59    | 14   |
| 2.2.2 Tolerance of immigrants.....             | 97.30    | 2    |
| 2.2.3 Social mobility.....                     | 98.51    | 3    |
| Gender Equality                                |          |      |
| 2.2.4 Female graduates.....                    | 70.35    | 63   |
| 2.2.5 Gender earnings gap.....                 | 54.72    | 56   |
| 2.2.6 Leadership opportunities for women.....  | 79.18    | 11   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>40,916.94</b> |
| GDP (US\$ billions).....               | <b>205.85</b>    |
| GTCI score.....                        | <b>71.12</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW..... 69.47</b>                        | <b>14</b> |      |
| 3.1 Formal Education.....                       | 53.17     | 18   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 31.64     | 50   |
| 3.1.2 Tertiary enrolment.....                   | 66.88     | 13   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 38.25     | 15   |
| 3.1.4 Reading, maths, and science.....          | 78.51     | 13   |
| 3.1.5 University ranking.....                   | 50.56     | 17   |
| 3.2 Lifelong Learning.....                      | 72.84     | 19   |
| 3.2.1 Quality of management schools.....        | 71.00     | 23   |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 74.68     | 18   |
| 3.3 Access to Growth Opportunities.....         | 82.39     | 7    |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 89.32     | 5    |
| 3.3.2 Personal rights.....                      | 95.39     | 5    |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 82.60     | 30   |
| 3.3.4 Use of virtual professional networks..... | 75.03     | 11   |
| 3.3.5 Collaboration within organisations.....   | 81.88     | 12   |
| 3.3.6 Collaboration across organisations.....   | 70.11     | 14   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN..... 79.35</b>           | <b>15</b> |     |
| 4.1 Sustainability.....              | 77.50     | 17  |
| 4.1.1 Pension system.....            | n/a       | n/a |
| 4.1.2 Social protection.....         | 85.85     | 10  |
| 4.1.3 Brain retention.....           | 69.16     | 21  |
| 4.2 Lifestyle.....                   | 81.20     | 16  |
| 4.2.1 Environmental performance..... | 80.90     | 17  |
| 4.2.2 Personal safety.....           | 95.12     | 14  |
| 4.2.3 Physician density.....         | 48.79     | 35  |
| 4.2.4 Sanitation.....                | 100.00    | 1   |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 62.87</b>     | <b>20</b> |    |
| 5.1 Mid-Level Skills.....                               | 49.57     | 41 |
| 5.1.1 Workforce with secondary education.....           | 68.12     | 25 |
| 5.1.2 Population with secondary education.....          | 35.66     | 57 |
| 5.1.3 Technicians and associate professionals.....      | 54.46     | 34 |
| 5.1.4 Labour productivity per employee.....             | 40.03     | 34 |
| 5.2 Employability.....                                  | 76.16     | 14 |
| 5.2.1 Ease of finding skilled employees.....            | 71.48     | 26 |
| 5.2.2 Relevance of education system to the economy..... | 78.87     | 10 |
| 5.2.3 Skills matching with secondary education.....     | 71.84     | 14 |
| 5.2.4 Skills matching with tertiary education.....      | 82.45     | 11 |

|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 53.24</b>         | <b>16</b> |     |
| 6.1 High-Level Skills.....                          | 55.63     | 17  |
| 6.1.1 Workforce with tertiary education.....        | 48.41     | 33  |
| 6.1.2 Population with tertiary education.....       | 49.24     | 25  |
| 6.1.3 Professionals.....                            | 45.51     | 35  |
| 6.1.4 Researchers.....                              | 49.07     | 22  |
| 6.1.5 Senior officials and managers.....            | 80.36     | 4   |
| 6.1.6 Availability of scientists and engineers..... | 61.21     | 25  |
| 6.2 Talent Impact.....                              | 50.85     | 13  |
| 6.2.1 Innovation output.....                        | 52.79     | 29  |
| 6.2.2 High-value exports.....                       | 18.40     | 45  |
| 6.2.3 New product entrepreneurial activity.....     | n/a       | n/a |
| 6.2.4 New business density.....                     | 69.83     | 8   |
| 6.2.5 Scientific journal articles.....              | 62.38     | 12  |

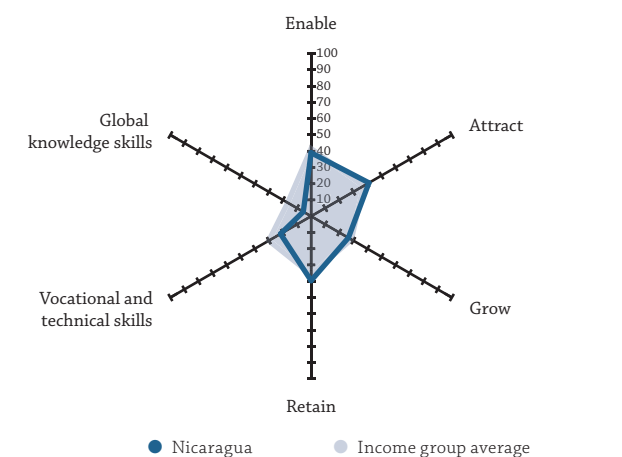


# NICARAGUA

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>103</b>                             |
| Income group.....          | <b>Lower-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>6.22</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....39.05 101</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 39.87  | 94   |
| 1.1.1 Government effectiveness.....            | 27.79  | 106  |
| 1.1.2 Business-government relations.....       | 61.59  | 52   |
| 1.1.3 Political stability.....                 | 60.65  | 74   |
| 1.1.4 Regulatory quality.....                  | 35.65  | 100  |
| 1.1.5 Corruption.....                          | 13.70  | 114  |
| 1.2 Market Landscape.....                      | 29.34  | 114  |
| 1.2.1 Competition intensity.....               | 52.64  | 105  |
| 1.2.2 Ease of doing business.....              | 44.04  | 104  |
| 1.2.3 Cluster development.....                 | 12.86  | 114  |
| 1.2.4 R&D expenditure.....                     | 2.18   | 100  |
| 1.2.5 ICT infrastructure.....                  | 31.93  | 96   |
| 1.2.6 Technology utilisation.....              | 32.38  | 110  |
| 1.3 Business and Labour Landscape.....         | 47.93  | 78   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 66.67  | 58   |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 0.00   | 125  |
| 1.3.4 Labour-employer cooperation.....         | 56.60  | 33   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 30.23  | 102  |
| 1.3.6 Relationship of pay to productivity..... | 34.06  | 98   |
| <b>2 ATTRACT.....41.09 77</b>                  |        |      |
| 2.1 External Openness.....                     | 36.46  | 73   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 56.35  | 65   |
| 2.1.2 Prevalence of foreign ownership.....     | 54.90  | 76   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 1.22   | 105  |
| 2.1.4 International students.....              | n/a    | n/a  |
| 2.1.5 Brain gain.....                          | 33.37  | 87   |
| 2.2 Internal Openness.....                     | 45.72  | 79   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 36.47  | 70   |
| 2.2.2 Tolerance of immigrants.....             | 55.41  | 62   |
| 2.2.3 Social mobility.....                     | 33.89  | 108  |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | n/a    | n/a  |
| 2.2.5 Gender earnings gap.....                 | 78.02  | 9    |
| 2.2.6 Leadership opportunities for women.....  | 24.81  | 97   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>5,842.17</b> |
| GDP (US\$ billions).....               | <b>13.81</b>    |
| GTCI score.....                        | <b>28.92</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....26.50 98</b>                      |       |      |
| 3.1 Formal Education.....                       | 10.05 | 110  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 3.01  | 104  |
| 3.1.2 Tertiary enrolment.....                   | n/a   | n/a  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 27.14 | 41   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 45.65 | 54   |
| 3.2.1 Quality of management schools.....        | 43.54 | 58   |
| 3.2.2 Prevalence of training in firms.....      | 71.11 | 10   |
| 3.2.3 Employee development.....                 | 22.30 | 105  |
| 3.3 Access to Growth Opportunities.....         | 23.80 | 115  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 29.73 | 105  |
| 3.3.2 Personal rights.....                      | 30.87 | 96   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 53.10 | 103  |
| 3.3.4 Use of virtual professional networks..... | 9.35  | 73   |
| 3.3.5 Collaboration within organisations.....   | 14.85 | 114  |
| 3.3.6 Collaboration across organisations.....   | 4.89  | 119  |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN.....39.63 89</b>         |       |    |
| 4.1 Sustainability.....              | 30.78 | 90 |
| 4.1.1 Pension system.....            | 20.41 | 76 |
| 4.1.2 Social protection.....         | 39.33 | 62 |
| 4.1.3 Brain retention.....           | 32.62 | 90 |
| 4.2 Lifestyle.....                   | 48.49 | 86 |
| 4.2.1 Environmental performance..... | 46.02 | 79 |
| 4.2.2 Personal safety.....           | 59.36 | 70 |
| 4.2.3 Physician density.....         | 14.37 | 87 |
| 4.2.4 Sanitation.....                | 74.19 | 89 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....21.72 114</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 26.48 | 86  |
| 5.1.1 Workforce with secondary education.....           | 24.39 | 89  |
| 5.1.2 Population with secondary education.....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals.....      | 28.57 | 73  |
| 5.1.4 Labour productivity per employee.....             | n/a   | n/a |
| 5.2 Employability.....                                  | 16.96 | 119 |
| 5.2.1 Ease of finding skilled employees.....            | 23.31 | 116 |
| 5.2.2 Relevance of education system to the economy..... | 0.91  | 124 |
| 5.2.3 Skills matching with secondary education.....     | 25.01 | 111 |
| 5.2.4 Skills matching with tertiary education.....      | 18.60 | 118 |

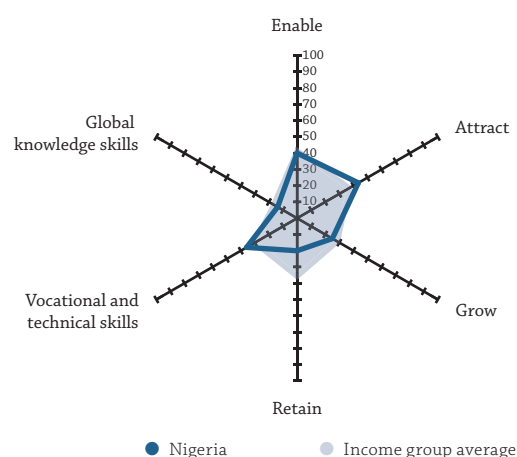
|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....5.53 121</b>       |       |     |
| 6.1 High-Level Skills.....                          | 10.52 | 112 |
| 6.1.1 Workforce with tertiary education.....        | 11.59 | 97  |
| 6.1.2 Population with tertiary education.....       | n/a   | n/a |
| 6.1.3 Professionals.....                            | 12.92 | 94  |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 10.71 | 87  |
| 6.1.6 Availability of scientists and engineers..... | 6.86  | 122 |
| 6.2 Talent Impact.....                              | 0.54  | 123 |
| 6.2.1 Innovation output.....                        | n/a   | n/a |
| 6.2.2 High-value exports.....                       | 0.88  | 112 |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....              | 0.19  | 113 |

# NIGERIA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>99</b>                  |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>190.89</b>              |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 40.06 95</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 27.28  | 119  |
| 1.1.1 Government effectiveness.....            | 18.11  | 118  |
| 1.1.2 Business-government relations.....       | 55.63  | 68   |
| 1.1.3 Political stability.....                 | 21.76  | 119  |
| 1.1.4 Regulatory quality.....                  | 25.84  | 114  |
| 1.1.5 Corruption.....                          | 15.07  | 113  |
| 1.2 Market Landscape.....                      | 39.39  | 91   |
| 1.2.1 Competition intensity.....               | 67.13  | 66   |
| 1.2.2 Ease of doing business.....              | 38.00  | 112  |
| 1.2.3 Cluster development.....                 | 27.37  | 91   |
| 1.2.4 R&D expenditure.....                     | n/a    | n/a  |
| 1.2.5 ICT infrastructure.....                  | 18.83  | 109  |
| 1.2.6 Technology utilisation.....              | 45.63  | 74   |
| 1.3 Business and Labour Landscape.....         | 53.49  | 60   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 75.00  | 45   |
| 1.3.3 Active labour market policies.....       | 14.86  | 116  |
| 1.3.4 Labour-employer cooperation.....         | 32.13  | 86   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 54.80  | 44   |
| 1.3.6 Relationship of pay to productivity..... | 44.17  | 70   |
| <b>2 ATTRACT..... 43.52 61</b>                 |        |      |
| 2.1 External Openness.....                     | 40.85  | 57   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 51.40  | 76   |
| 2.1.2 Prevalence of foreign ownership.....     | 63.87  | 52   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 1.19   | 106  |
| 2.1.4 International students.....              | n/a    | n/a  |
| 2.1.5 Brain gain.....                          | 46.95  | 50   |
| 2.2 Internal Openness.....                     | 46.19  | 78   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 4.71   | 119  |
| 2.2.2 Tolerance of immigrants.....             | 72.97  | 30   |
| 2.2.3 Social mobility.....                     | 54.25  | 49   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | n/a    | n/a  |
| 2.2.5 Gender earnings gap.....                 | 58.30  | 44   |
| 2.2.6 Leadership opportunities for women.....  | 40.73  | 63   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>5,860.85</b> |
| GDP (US\$ billions).....               | <b>375.77</b>   |
| GTGI score.....                        | <b>29.72</b>    |
| GTGI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 25.04 103</b>                    |       |      |
| 3.1 Formal Education.....                       | 3.88  | 122  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | n/a   | n/a  |
| 3.1.2 Tertiary enrolment.....                   | 7.76  | 100  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | n/a   | n/a  |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 33.89 | 82   |
| 3.2.1 Quality of management schools.....        | 31.34 | 88   |
| 3.2.2 Prevalence of training in firms.....      | 36.02 | 48   |
| 3.2.3 Employee development.....                 | 34.32 | 69   |
| 3.3 Access to Growth Opportunities.....         | 37.34 | 77   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 54.46 | 37   |
| 3.3.2 Personal rights.....                      | 45.86 | 78   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 66.52 | 79   |
| 3.3.4 Use of virtual professional networks..... | 3.95  | 95   |
| 3.3.5 Collaboration within organisations.....   | 41.75 | 44   |
| 3.3.6 Collaboration across organisations.....   | 11.48 | 112  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 20.01 120</b>       |       |     |
| 4.1 Sustainability.....              | 15.84 | 118 |
| 4.1.1 Pension system.....            | 6.12  | 93  |
| 4.1.2 Social protection.....         | 0.73  | 124 |
| 4.1.3 Brain retention.....           | 40.68 | 68  |
| 4.2 Lifestyle.....                   | 24.17 | 115 |
| 4.2.1 Environmental performance..... | 45.56 | 81  |
| 4.2.2 Personal safety.....           | 17.44 | 118 |
| 4.2.3 Physician density.....         | 5.74  | 102 |
| 4.2.4 Sanitation.....                | 27.96 | 114 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 35.87 71</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 50.83 | 36  |
| 5.1.1 Workforce with secondary education.....           | n/a   | n/a |
| 5.1.2 Population with secondary education.....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals.....      | 93.30 | 3   |
| 5.1.4 Labour productivity per employee.....             | 8.35  | 84  |
| 5.2 Employability.....                                  | 20.92 | 116 |
| 5.2.1 Ease of finding skilled employees.....            | 44.15 | 69  |
| 5.2.2 Relevance of education system to the economy..... | 13.92 | 110 |
| 5.2.3 Skills matching with secondary education.....     | 13.65 | 122 |
| 5.2.4 Skills matching with tertiary education.....      | 11.95 | 120 |

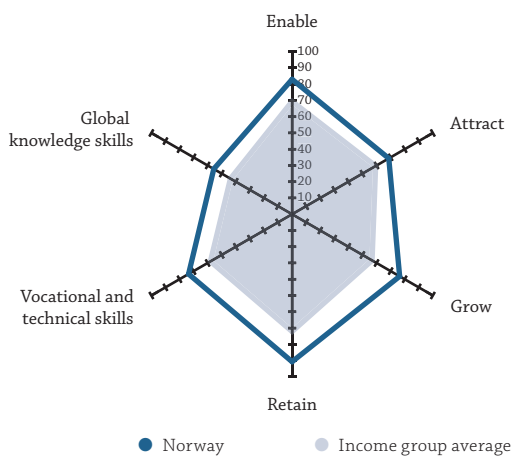
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|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 13.83 97</b>      |       |     |
| 6.1 High-Level Skills.....                          | 18.72 | 88  |
| 6.1.1 Workforce with tertiary education.....        | n/a   | n/a |
| 6.1.2 Population with tertiary education.....       | n/a   | n/a |
| 6.1.3 Professionals.....                            | 15.45 | 88  |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 5.95  | 102 |
| 6.1.6 Availability of scientists and engineers..... | 34.75 | 77  |
| 6.2 Talent Impact.....                              | 8.94  | 99  |
| 6.2.1 Innovation output.....                        | 11.80 | 111 |
| 6.2.2 High-value exports.....                       | 3.57  | 99  |
| 6.2.3 New product entrepreneurial activity.....     | 24.94 | 61  |
| 6.2.4 New business density.....                     | 3.61  | 75  |
| 6.2.5 Scientific journal articles.....              | 0.76  | 96  |

# NORWAY

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>4</b>           |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>5.28</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 82.98 7</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 91.40 | 5    |
| 1.1.1 Government effectiveness.....            | 91.81 | 4    |
| 1.1.2 Business-government relations.....       | 90.51 | 7    |
| 1.1.3 Political stability.....                 | 91.67 | 8    |
| 1.1.4 Regulatory quality.....                  | 88.52 | 13   |
| 1.1.5 Corruption.....                          | 94.52 | 3    |
| 1.2 Market Landscape.....                      | 77.54 | 13   |
| 1.2.1 Competition intensity.....               | 72.53 | 53   |
| 1.2.2 Ease of doing business.....              | 92.12 | 7    |
| 1.2.3 Cluster development.....                 | 79.08 | 13   |
| 1.2.4 R&D expenditure.....                     | 47.62 | 17   |
| 1.2.5 ICT infrastructure.....                  | 80.41 | 23   |
| 1.2.6 Technology utilisation.....              | 93.47 | 7    |
| 1.3 Business and Labour Landscape.....         | 79.99 | 14   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 72.33 | 50   |
| 1.3.2 Ease of redundancy.....                  | 62.50 | 64   |
| 1.3.3 Active labour market policies.....       | 87.57 | 6    |
| 1.3.4 Labour-employer cooperation.....         | 97.19 | 3    |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 92.25 | 8    |
| 1.3.6 Relationship of pay to productivity..... | 68.10 | 26   |
| <b>2 ATTRACT..... 68.70 13</b>                 |       |      |
| 2.1 External Openness.....                     | 52.94 | 31   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 76.04 | 22   |
| 2.1.2 Prevalence of foreign ownership.....     | 69.67 | 40   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 31.00 | 23   |
| 2.1.4 International students.....              | 19.65 | 50   |
| 2.1.5 Brain gain.....                          | 68.32 | 19   |
| 2.2 Internal Openness.....                     | 84.45 | 3    |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 70.59 | 14   |
| 2.2.2 Tolerance of immigrants.....             | 93.24 | 5    |
| 2.2.3 Social mobility.....                     | 95.29 | 4    |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 77.33 | 43   |
| 2.2.5 Gender earnings gap.....                 | 74.79 | 11   |
| 2.2.6 Leadership opportunities for women.....  | 95.47 | 2    |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>60,978.28</b> |
| GDP (US\$ billions).....               | <b>398.83</b>    |
| GTCI score.....                        | <b>74.67</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score  | Rank |
|-------------------------------------------------|--------|------|
| <b>3 GROW..... 76.42 5</b>                      |        |      |
| 3.1 Formal Education.....                       | 59.99  | 10   |
| Enrolment                                       |        |      |
| 3.1.1 Vocational enrolment.....                 | 60.63  | 19   |
| 3.1.2 Tertiary enrolment.....                   | 65.88  | 15   |
| Quality                                         |        |      |
| 3.1.3 Tertiary education expenditure.....       | 52.27  | 5    |
| 3.1.4 Reading, maths, and science.....          | 77.82  | 14   |
| 3.1.5 University ranking.....                   | 43.35  | 25   |
| 3.2 Lifelong Learning.....                      | 81.49  | 9    |
| 3.2.1 Quality of management schools.....        | 73.26  | 18   |
| 3.2.2 Prevalence of training in firms.....      | n/a    | n/a  |
| 3.2.3 Employee development.....                 | 89.72  | 3    |
| 3.3 Access to Growth Opportunities.....         | 87.78  | 4    |
| Empowerment                                     |        |      |
| 3.3.1 Delegation of authority.....              | 96.41  | 3    |
| 3.3.2 Personal rights.....                      | 98.10  | 2    |
| Collaboration                                   |        |      |
| 3.3.3 Use of virtual social networks.....       | 100.00 | 1    |
| 3.3.4 Use of virtual professional networks..... | 66.33  | 13   |
| 3.3.5 Collaboration within organisations.....   | 95.41  | 4    |
| 3.3.6 Collaboration across organisations.....   | 70.42  | 13   |

|                                      |        |    |
|--------------------------------------|--------|----|
| <b>4 RETAIN..... 90.74 2</b>         |        |    |
| 4.1 Sustainability.....              | 93.76  | 2  |
| 4.1.1 Pension system.....            | 92.86  | 8  |
| 4.1.2 Social protection.....         | 100.00 | 1  |
| 4.1.3 Brain retention.....           | 88.43  | 4  |
| 4.2 Lifestyle.....                   | 87.72  | 4  |
| 4.2.1 Environmental performance..... | 83.45  | 14 |
| 4.2.2 Personal safety.....           | 99.56  | 4  |
| 4.2.3 Physician density.....         | 70.02  | 5  |
| 4.2.4 Sanitation.....                | 97.85  | 37 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 73.55 5</b>   |       |    |
| 5.1 Mid-Level Skills.....                               | 63.53 | 13 |
| 5.1.1 Workforce with secondary education.....           | 52.39 | 48 |
| 5.1.2 Population with secondary education.....          | 54.21 | 29 |
| 5.1.3 Technicians and associate professionals.....      | 72.77 | 15 |
| 5.1.4 Labour productivity per employee.....             | 74.77 | 8  |
| 5.2 Employability.....                                  | 83.57 | 7  |
| 5.2.1 Ease of finding skilled employees.....            | 99.46 | 2  |
| 5.2.2 Relevance of education system to the economy..... | 77.91 | 11 |
| 5.2.3 Skills matching with secondary education.....     | 73.83 | 11 |
| 5.2.4 Skills matching with tertiary education.....      | 83.09 | 9  |

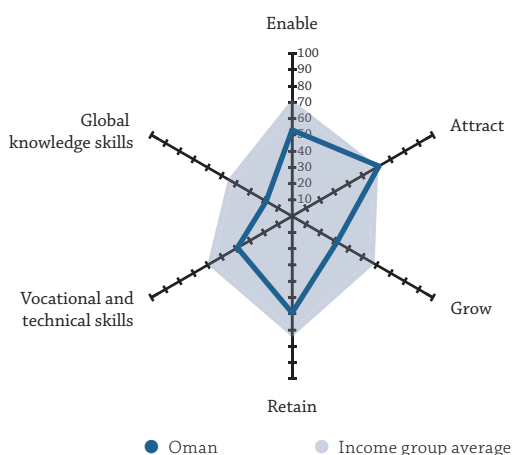
|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 55.65 13</b>      |       |    |
| 6.1 High-Level Skills.....                          | 65.67 | 6  |
| 6.1.1 Workforce with tertiary education.....        | 65.42 | 10 |
| 6.1.2 Population with tertiary education.....       | 57.72 | 11 |
| 6.1.3 Professionals.....                            | 75.28 | 3  |
| 6.1.4 Researchers.....                              | 73.59 | 8  |
| 6.1.5 Senior officials and managers.....            | 50.60 | 16 |
| 6.1.6 Availability of scientists and engineers..... | 71.41 | 14 |
| 6.2 Talent Impact.....                              | 45.63 | 18 |
| 6.2.1 Innovation output.....                        | 56.02 | 23 |
| 6.2.2 High-value exports.....                       | 34.99 | 17 |
| 6.2.3 New product entrepreneurial activity.....     | 16.57 | 71 |
| 6.2.4 New business density.....                     | 39.23 | 17 |
| 6.2.5 Scientific journal articles.....              | 81.36 | 4  |

# OMAN

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>48</b>                               |
| Income group.....          | <b>High income</b>                      |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>4.64</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>53.06</b> | <b>51</b> |
| 1.1 Regulatory Landscape.....                  | 63.18        | 41        |
| 1.1.1 Government effectiveness.....            | 49.88        | 56        |
| 1.1.2 Business-government relations.....       | 82.12        | 13        |
| 1.1.3 Political stability.....                 | 83.10        | 27        |
| 1.1.4 Regulatory quality.....                  | 62.44        | 42        |
| 1.1.5 Corruption.....                          | 38.36        | 56        |
| 1.2 Market Landscape.....                      | 48.25        | 62        |
| 1.2.1 Competition intensity.....               | 52.64        | 105       |
| 1.2.2 Ease of doing business.....              | 65.25        | 64        |
| 1.2.3 Cluster development.....                 | 37.84        | 66        |
| 1.2.4 R&D expenditure.....                     | 5.46         | 81        |
| 1.2.5 ICT infrastructure.....                  | 71.76        | 41        |
| 1.2.6 Technology utilisation.....              | 56.58        | 49        |
| 1.3 Business and Labour Landscape.....         | 47.76        | 80        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 89.00        | 27        |
| 1.3.2 Ease of redundancy.....                  | 0.00         | 122       |
| 1.3.3 Active labour market policies.....       | 54.61        | 42        |
| 1.3.4 Labour-employer cooperation.....         | 46.85        | 49        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 51.84        | 57        |
| 1.3.6 Relationship of pay to productivity..... | 44.23        | 69        |
| <b>2 ATTRACT.....</b>                          | <b>61.61</b> | <b>23</b> |
| 2.1 External Openness.....                     | 53.53        | 30        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 50.25        | 81        |
| 2.1.2 Prevalence of foreign ownership.....     | 49.63        | 91        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 92.35        | 7         |
| 2.1.4 International students.....              | 14.73        | 58        |
| 2.1.5 Brain gain.....                          | 60.67        | 27        |
| 2.2 Internal Openness.....                     | 69.69        | 16        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 78.82        | 8         |
| 2.2.2 Tolerance of immigrants.....             | n/a          | n/a       |
| 2.2.3 Social mobility.....                     | 58.64        | 37        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 79.28        | 36        |
| 2.2.5 Gender earnings gap.....                 | n/a          | n/a       |
| 2.2.6 Leadership opportunities for women.....  | 62.00        | 27        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>41,675.34</b> |
| GDP (US\$ billions).....               | <b>72.64</b>     |
| GTCI score.....                        | <b>43.88</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>31.88</b> | <b>79</b> |
| 3.1 Formal Education.....                       | 22.97        | 74        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 0.00         | 112       |
| 3.1.2 Tertiary enrolment.....                   | 36.19        | 62        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 29.73        | 32        |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 25.95        | 43        |
| 3.2 Lifelong Learning.....                      | 34.81        | 79        |
| 3.2.1 Quality of management schools.....        | 22.33        | 110       |
| 3.2.2 Prevalence of training in firms.....      | n/a          | n/a       |
| 3.2.3 Employee development.....                 | 47.28        | 44        |
| 3.3 Access to Growth Opportunities.....         | 37.88        | 75        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 43.40        | 71        |
| 3.3.2 Personal rights.....                      | 26.50        | 102       |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 66.06        | 80        |
| 3.3.4 Use of virtual professional networks..... | 16.90        | 59        |
| 3.3.5 Collaboration within organisations.....   | 38.81        | 53        |
| 3.3.6 Collaboration across organisations.....   | 35.60        | 52        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>59.46</b> | <b>44</b> |
| 4.1 Sustainability.....              | 57.89        | 34        |
| 4.1.1 Pension system.....            | n/a          | n/a       |
| 4.1.2 Social protection.....         | 57.11        | 36        |
| 4.1.3 Brain retention.....           | 58.67        | 35        |
| 4.2 Lifestyle.....                   | 61.03        | 59        |
| 4.2.1 Environmental performance..... | 39.82        | 91        |
| 4.2.2 Personal safety.....           | 74.97        | 42        |
| 4.2.3 Physician density.....         | 30.42        | 61        |
| 4.2.4 Sanitation.....                | 98.92        | 21        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>38.84</b> | <b>62</b> |
| 5.1 Mid-Level Skills.....                               | 42.50        | 57        |
| 5.1.1 Workforce with secondary education.....           | n/a          | n/a       |
| 5.1.2 Population with secondary education.....          | 41.37        | 49        |
| 5.1.3 Technicians and associate professionals.....      | 45.09        | 48        |
| 5.1.4 Labour productivity per employee.....             | 41.03        | 33        |
| 5.2 Employability.....                                  | 35.18        | 81        |
| 5.2.1 Ease of finding skilled employees.....            | 27.91        | 108       |
| 5.2.2 Relevance of education system to the economy..... | 33.76        | 70        |
| 5.2.3 Skills matching with secondary education.....     | 36.54        | 77        |
| 5.2.4 Skills matching with tertiary education.....      | 42.53        | 73        |

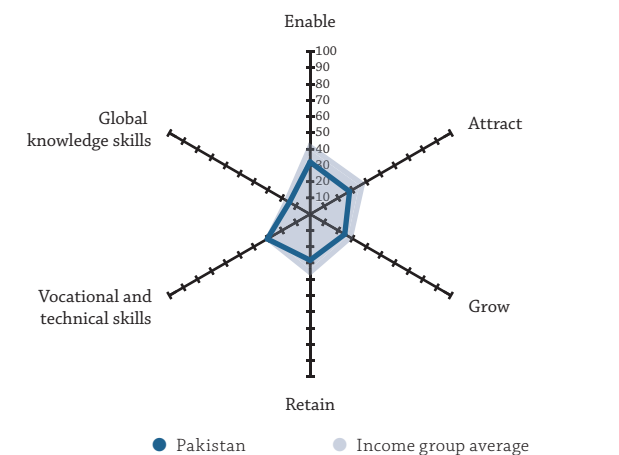
|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>18.43</b> | <b>80</b> |
| 6.1 High-Level Skills.....                          | 25.32        | 70        |
| 6.1.1 Workforce with tertiary education.....        | n/a          | n/a       |
| 6.1.2 Population with tertiary education.....       | 34.13        | 43        |
| 6.1.3 Professionals.....                            | 23.31        | 71        |
| 6.1.4 Researchers.....                              | 2.53         | 75        |
| 6.1.5 Senior officials and managers.....            | 30.95        | 41        |
| 6.1.6 Availability of scientists and engineers..... | 35.66        | 73        |
| 6.2 Talent Impact.....                              | 11.55        | 86        |
| 6.2.1 Innovation output.....                        | 24.11        | 74        |
| 6.2.2 High-value exports.....                       | 5.12         | 87        |
| 6.2.3 New product entrepreneurial activity.....     | n/a          | n/a       |
| 6.2.4 New business density.....                     | 10.12        | 46        |
| 6.2.5 Scientific journal articles.....              | 6.83         | 60        |

# PAKISTAN

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>108</b>                       |
| Income group.....          | <b>Lower-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>197.02</b>                    |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....32.17 115</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 26.13 | 120  |
| 1.1.1 Government effectiveness.....            | 29.28 | 100  |
| 1.1.2 Business-government relations.....       | 39.51 | 104  |
| 1.1.3 Political stability.....                 | 7.41  | 124  |
| 1.1.4 Regulatory quality.....                  | 32.54 | 104  |
| 1.1.5 Corruption.....                          | 21.92 | 89   |
| 1.2 Market Landscape.....                      | 32.95 | 107  |
| 1.2.1 Competition intensity.....               | 48.04 | 112  |
| 1.2.2 Ease of doing business.....              | 37.32 | 114  |
| 1.2.3 Cluster development.....                 | 42.16 | 52   |
| 1.2.4 R&D expenditure.....                     | 5.45  | 82   |
| 1.2.5 ICT infrastructure.....                  | 21.12 | 108  |
| 1.2.6 Technology utilisation.....              | 43.58 | 82   |
| 1.3 Business and Labour Landscape.....         | 37.43 | 107  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 11.00 | 120  |
| 1.3.2 Ease of redundancy.....                  | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 49.08 | 53   |
| 1.3.4 Labour-employer cooperation.....         | 16.86 | 116  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 30.52 | 101  |
| 1.3.6 Relationship of pay to productivity..... | 42.10 | 77   |
| <b>2 ATTRACT.....28.04 121</b>                 |       |      |
| 2.1 External Openness.....                     | 35.88 | 76   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 56.70 | 64   |
| 2.1.2 Prevalence of foreign ownership.....     | 40.97 | 104  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 3.42  | 88   |
| 2.1.4 International students.....              | n/a   | n/a  |
| 2.1.5 Brain gain.....                          | 42.43 | 62   |
| 2.2 Internal Openness.....                     | 20.20 | 124  |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 1.18  | 123  |
| 2.2.2 Tolerance of immigrants.....             | 39.19 | 90   |
| 2.2.3 Social mobility.....                     | 40.00 | 91   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap.....                 | 2.63  | 118  |
| 2.2.6 Leadership opportunities for women.....  | 18.00 | 111  |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>5,527.38</b> |
| GDP (US\$ billions).....               | <b>304.95</b>   |
| GTCI score.....                        | <b>26.37</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....24.64 105</b>                     |       |      |
| 3.1 Formal Education.....                       | 11.02 | 106  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 5.30  | 96   |
| 3.1.2 Tertiary enrolment.....                   | 7.40  | 102  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 5.41  | 108  |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 25.98 | 42   |
| 3.2 Lifelong Learning.....                      | 32.17 | 88   |
| 3.2.1 Quality of management schools.....        | 29.56 | 96   |
| 3.2.2 Prevalence of training in firms.....      | 37.73 | 44   |
| 3.2.3 Employee development.....                 | 29.21 | 87   |
| 3.3 Access to Growth Opportunities.....         | 30.72 | 104  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 33.73 | 94   |
| 3.3.2 Personal rights.....                      | 37.46 | 89   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 37.57 | 116  |
| 3.3.4 Use of virtual professional networks..... | 4.46  | 91   |
| 3.3.5 Collaboration within organisations.....   | 29.77 | 81   |
| 3.3.6 Collaboration across organisations.....   | 41.34 | 40   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....28.30 108</b>        |       |     |
| 4.1 Sustainability.....              | 25.89 | 102 |
| 4.1.1 Pension system.....            | 2.04  | 103 |
| 4.1.2 Social protection.....         | 31.14 | 80  |
| 4.1.3 Brain retention.....           | 44.49 | 56  |
| 4.2 Lifestyle.....                   | 30.71 | 104 |
| 4.2.1 Environmental performance..... | 16.79 | 117 |
| 4.2.2 Personal safety.....           | 35.81 | 109 |
| 4.2.3 Physician density.....         | 15.39 | 85  |
| 4.2.4 Sanitation.....                | 54.84 | 101 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....30.39 89</b>   |       |    |
| 5.1 Mid-Level Skills.....                               | 18.23 | 97 |
| 5.1.1 Workforce with secondary education.....           | 23.99 | 90 |
| 5.1.2 Population with secondary education.....          | 26.96 | 68 |
| 5.1.3 Technicians and associate professionals.....      | 12.95 | 97 |
| 5.1.4 Labour productivity per employee.....             | 9.01  | 82 |
| 5.2 Employability.....                                  | 42.55 | 64 |
| 5.2.1 Ease of finding skilled employees.....            | 45.87 | 64 |
| 5.2.2 Relevance of education system to the economy..... | 38.34 | 57 |
| 5.2.3 Skills matching with secondary education.....     | 38.77 | 74 |
| 5.2.4 Skills matching with tertiary education.....      | 47.20 | 65 |

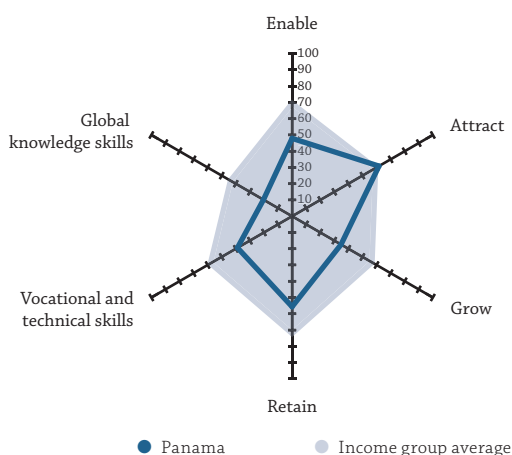
|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....14.67 92</b>       |       |     |
| 6.1 High-Level Skills.....                          | 15.49 | 95  |
| 6.1.1 Workforce with tertiary education.....        | 12.97 | 93  |
| 6.1.2 Population with tertiary education.....       | 13.07 | 86  |
| 6.1.3 Professionals.....                            | 11.52 | 98  |
| 6.1.4 Researchers.....                              | 3.47  | 70  |
| 6.1.5 Senior officials and managers.....            | 11.90 | 81  |
| 6.1.6 Availability of scientists and engineers..... | 40.01 | 61  |
| 6.2 Talent Impact.....                              | 13.84 | 82  |
| 6.2.1 Innovation output.....                        | 19.06 | 90  |
| 6.2.2 High-value exports.....                       | 3.46  | 102 |
| 6.2.3 New product entrepreneurial activity.....     | 44.64 | 30  |
| 6.2.4 New business density.....                     | 0.24  | 99  |
| 6.2.5 Scientific journal articles.....              | 1.83  | 84  |

# PANAMA

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>52</b>                              |
| Income group.....          | <b>High income</b>                     |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>4.10</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....47.91</b>                      | <b>69</b> |      |
| 1.1 Regulatory Landscape.....                  | 54.47     | 50   |
| 1.1.1 Government effectiveness.....            | 49.88     | 56   |
| 1.1.2 Business-government relations.....       | 62.69     | 44   |
| 1.1.3 Political stability.....                 | 74.54     | 43   |
| 1.1.4 Regulatory quality.....                  | 56.46     | 52   |
| 1.1.5 Corruption.....                          | 28.77     | 73   |
| 1.2 Market Landscape.....                      | 51.42     | 56   |
| 1.2.1 Competition intensity.....               | 74.00     | 44   |
| 1.2.2 Ease of doing business.....              | 61.78     | 71   |
| 1.2.3 Cluster development.....                 | 48.03     | 44   |
| 1.2.4 R&D expenditure.....                     | 1.14      | 106  |
| 1.2.5 ICT infrastructure.....                  | 54.33     | 69   |
| 1.2.6 Technology utilisation.....              | 69.22     | 33   |
| 1.3 Business and Labour Landscape.....         | 37.83     | 106  |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 22.33     | 112  |
| 1.3.2 Ease of redundancy.....                  | 25.00     | 109  |
| 1.3.3 Active labour market policies.....       | 43.21     | 58   |
| 1.3.4 Labour-employer cooperation.....         | 45.43     | 51   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 49.37     | 60   |
| 1.3.6 Relationship of pay to productivity..... | 41.66     | 78   |
| <b>2 ATTRACT.....61.71</b>                     | <b>22</b> |      |
| 2.1 External Openness.....                     | 62.99     | 14   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 84.35     | 8    |
| 2.1.2 Prevalence of foreign ownership.....     | 87.33     | 10   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 9.48      | 56   |
| 2.1.4 International students.....              | n/a       | n/a  |
| 2.1.5 Brain gain.....                          | 70.81     | 15   |
| 2.2 Internal Openness.....                     | 60.43     | 34   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 52.94     | 47   |
| 2.2.2 Tolerance of immigrants.....             | 54.05     | 64   |
| 2.2.3 Social mobility.....                     | 57.74     | 39   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 96.66     | 2    |
| 2.2.5 Gender earnings gap.....                 | 54.96     | 54   |
| 2.2.6 Leadership opportunities for women.....  | 46.25     | 53   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>24,445.97</b> |
| GDP (US\$ billions).....               | <b>61.84</b>     |
| GTCI score.....                        | <b>43.20</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....34.78</b>                         | <b>71</b> |      |
| 3.1 Formal Education.....                       | 24.59     | 69   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 33.77     | 45   |
| 3.1.2 Tertiary enrolment.....                   | 38.40     | 57   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 15.80     | 79   |
| 3.1.4 Reading, maths, and science.....          | n/a       | n/a  |
| 3.1.5 University ranking.....                   | 10.40     | 74   |
| 3.2 Lifelong Learning.....                      | 28.57     | 102  |
| 3.2.1 Quality of management schools.....        | 35.31     | 83   |
| 3.2.2 Prevalence of training in firms.....      | 10.03     | 85   |
| 3.2.3 Employee development.....                 | 40.36     | 62   |
| 3.3 Access to Growth Opportunities.....         | 51.17     | 36   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 51.27     | 42   |
| 3.3.2 Personal rights.....                      | 67.13     | 49   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 82.28     | 31   |
| 3.3.4 Use of virtual professional networks..... | 25.62     | 40   |
| 3.3.5 Collaboration within organisations.....   | 37.82     | 59   |
| 3.3.6 Collaboration across organisations.....   | 42.89     | 38   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....55.68</b>            | <b>51</b> |     |
| 4.1 Sustainability.....              | 54.32     | 36  |
| 4.1.1 Pension system.....            | n/a       | n/a |
| 4.1.2 Social protection.....         | 42.20     | 55  |
| 4.1.3 Brain retention.....           | 66.44     | 27  |
| 4.2 Lifestyle.....                   | 57.03     | 64  |
| 4.2.1 Environmental performance..... | 58.81     | 50  |
| 4.2.2 Personal safety.....           | 68.78     | 54  |
| 4.2.3 Physician density.....         | 25.27     | 72  |
| 4.2.4 Sanitation.....                | 75.27     | 87  |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....38.81</b>      | <b>64</b> |     |
| 5.1 Mid-Level Skills.....                               | 41.07     | 60  |
| 5.1.1 Workforce with secondary education.....           | 58.51     | 36  |
| 5.1.2 Population with secondary education.....          | 28.53     | 66  |
| 5.1.3 Technicians and associate professionals.....      | 36.16     | 59  |
| 5.1.4 Labour productivity per employee.....             | n/a       | n/a |
| 5.2 Employability.....                                  | 36.55     | 79  |
| 5.2.1 Ease of finding skilled employees.....            | 32.85     | 97  |
| 5.2.2 Relevance of education system to the economy..... | 25.20     | 90  |
| 5.2.3 Skills matching with secondary education.....     | 41.60     | 64  |
| 5.2.4 Skills matching with tertiary education.....      | 46.54     | 67  |

|                                                     |           |    |
|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....20.34</b>          | <b>74</b> |    |
| 6.1 High-Level Skills.....                          | 30.68     | 57 |
| 6.1.1 Workforce with tertiary education.....        | 43.46     | 39 |
| 6.1.2 Population with tertiary education.....       | 34.13     | 43 |
| 6.1.3 Professionals.....                            | 28.65     | 58 |
| 6.1.4 Researchers.....                              | 0.39      | 91 |
| 6.1.5 Senior officials and managers.....            | 37.50     | 32 |
| 6.1.6 Availability of scientists and engineers..... | 39.95     | 62 |
| 6.2 Talent Impact.....                              | 10.01     | 93 |
| 6.2.1 Innovation output.....                        | 28.11     | 65 |
| 6.2.2 High-value exports.....                       | 10.39     | 67 |
| 6.2.3 New product entrepreneurial activity.....     | 6.01      | 81 |
| 6.2.4 New business density.....                     | 4.00      | 72 |
| 6.2.5 Scientific journal articles.....              | 1.52      | 86 |

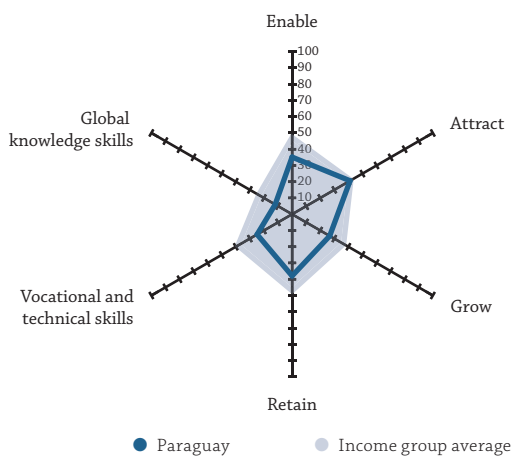


# PARAGUAY

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>101</b>                             |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>6.81</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....35.16 110</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 41.74 | 88   |
| 1.1.1 Government effectiveness.....            | 26.05 | 110  |
| 1.1.2 Business-government relations.....       | 54.97 | 71   |
| 1.1.3 Political stability.....                 | 69.21 | 53   |
| 1.1.4 Regulatory quality.....                  | 40.67 | 86   |
| 1.1.5 Corruption.....                          | 17.81 | 102  |
| 1.2 Market Landscape.....                      | 33.93 | 104  |
| 1.2.1 Competition intensity.....               | 64.09 | 69   |
| 1.2.2 Ease of doing business.....              | 50.84 | 91   |
| 1.2.3 Cluster development.....                 | 17.33 | 105  |
| 1.2.4 R&D expenditure.....                     | 2.68  | 95   |
| 1.2.5 ICT infrastructure.....                  | 34.73 | 92   |
| 1.2.6 Technology utilisation.....              | 33.89 | 104  |
| 1.3 Business and Labour Landscape.....         | 29.82 | 117  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 44.33 | 99   |
| 1.3.2 Ease of redundancy.....                  | 25.00 | 109  |
| 1.3.3 Active labour market policies.....       | 22.31 | 106  |
| 1.3.4 Labour-employer cooperation.....         | 34.32 | 81   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 25.42 | 112  |
| 1.3.6 Relationship of pay to productivity..... | 27.52 | 112  |
| <b>2 ATTRACT.....41.17 74</b>                  |       |      |
| 2.1 External Openness.....                     | 36.10 | 75   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 44.65 | 96   |
| 2.1.2 Prevalence of foreign ownership.....     | 56.65 | 67   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 4.73  | 75   |
| 2.1.4 International students.....              | n/a   | n/a  |
| 2.1.5 Brain gain.....                          | 38.38 | 75   |
| 2.2 Internal Openness.....                     | 46.24 | 77   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 44.71 | 57   |
| 2.2.2 Tolerance of immigrants.....             | 77.03 | 22   |
| 2.2.3 Social mobility.....                     | 46.88 | 72   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap.....                 | 47.55 | 80   |
| 2.2.6 Leadership opportunities for women.....  | 15.03 | 114  |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>9,690.77</b> |
| GDP (US\$ billions).....               | <b>29.73</b>    |
| GTCI score.....                        | <b>29.64</b>    |
| GTCI score (income group average)..... | <b>39.16</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....26.72 95</b>                      |       |      |
| 3.1 Formal Education.....                       | 21.63 | 76   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 32.44 | 49   |
| 3.1.2 Tertiary enrolment.....                   | 28.33 | 72   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 25.76 | 47   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 30.15 | 97   |
| 3.2.1 Quality of management schools.....        | 13.25 | 119  |
| 3.2.2 Prevalence of training in firms.....      | 56.73 | 23   |
| 3.2.3 Employee development.....                 | 20.48 | 108  |
| 3.3 Access to Growth Opportunities.....         | 28.37 | 107  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 22.84 | 116  |
| 3.3.2 Personal rights.....                      | 54.39 | 72   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 56.70 | 96   |
| 3.3.4 Use of virtual professional networks..... | 7.95  | 79   |
| 3.3.5 Collaboration within organisations.....   | 14.70 | 115  |
| 3.3.6 Collaboration across organisations.....   | 13.63 | 109  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....37.95 93</b>         |       |     |
| 4.1 Sustainability.....              | 23.60 | 109 |
| 4.1.1 Pension system.....            | 10.20 | 86  |
| 4.1.2 Social protection.....         | 18.78 | 107 |
| 4.1.3 Brain retention.....           | 41.81 | 63  |
| 4.2 Lifestyle.....                   | 52.29 | 79  |
| 4.2.1 Environmental performance..... | 44.17 | 83  |
| 4.2.2 Personal safety.....           | 54.35 | 78  |
| 4.2.3 Physician density.....         | 20.33 | 78  |
| 4.2.4 Sanitation.....                | 90.32 | 69  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....24.85 108</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 33.99 | 71  |
| 5.1.1 Workforce with secondary education.....           | 36.31 | 73  |
| 5.1.2 Population with secondary education.....          | 33.95 | 60  |
| 5.1.3 Technicians and associate professionals.....      | 31.70 | 68  |
| 5.1.4 Labour productivity per employee.....             | n/a   | n/a |
| 5.2 Employability.....                                  | 15.70 | 121 |
| 5.2.1 Ease of finding skilled employees.....            | 17.93 | 120 |
| 5.2.2 Relevance of education system to the economy..... | 0.00  | 125 |
| 5.2.3 Skills matching with secondary education.....     | 24.47 | 112 |
| 5.2.4 Skills matching with tertiary education.....      | 20.41 | 115 |

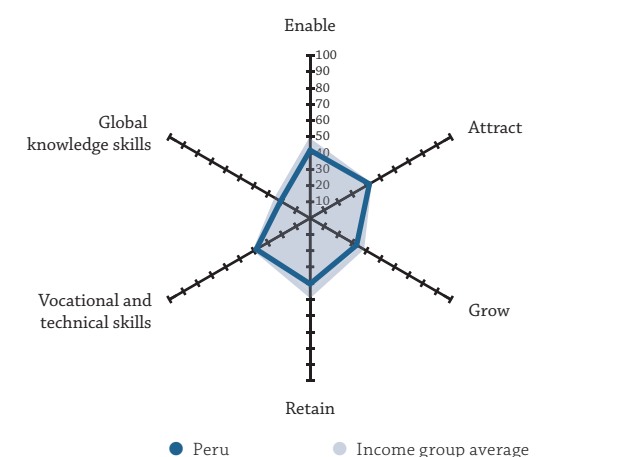
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|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....12.02 99</b>       |       |     |
| 6.1 High-Level Skills.....                          | 15.33 | 97  |
| 6.1.1 Workforce with tertiary education.....        | 21.09 | 83  |
| 6.1.2 Population with tertiary education.....       | 22.41 | 67  |
| 6.1.3 Professionals.....                            | 18.26 | 82  |
| 6.1.4 Researchers.....                              | 2.15  | 77  |
| 6.1.5 Senior officials and managers.....            | 22.02 | 60  |
| 6.1.6 Availability of scientists and engineers..... | 6.05  | 123 |
| 6.2 Talent Impact.....                              | 8.72  | 100 |
| 6.2.1 Innovation output.....                        | 20.58 | 84  |
| 6.2.2 High-value exports.....                       | 13.14 | 59  |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 0.63  | 92  |
| 6.2.5 Scientific journal articles.....              | 0.53  | 103 |

# PERU

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>79</b>                              |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>32.17</b>                           |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....41.83</b>                      | <b>89</b> |      |
| 1.1 Regulatory Landscape.....                  | 49.03     | 62   |
| 1.1.1 Government effectiveness.....            | 40.94     | 77   |
| 1.1.2 Business-government relations.....       | 54.53     | 72   |
| 1.1.3 Political stability.....                 | 60.88     | 72   |
| 1.1.4 Regulatory quality.....                  | 60.05     | 48   |
| 1.1.5 Corruption.....                          | 28.77     | 73   |
| 1.2 Market Landscape.....                      | 39.89     | 86   |
| 1.2.1 Competition intensity.....               | 68.60     | 63   |
| 1.2.2 Ease of doing business.....              | 69.29     | 53   |
| 1.2.3 Cluster development.....                 | 21.05     | 98   |
| 1.2.4 R&D expenditure.....                     | 2.48      | 97   |
| 1.2.5 ICT infrastructure.....                  | 40.97     | 81   |
| 1.2.6 Technology utilisation.....              | 36.93     | 99   |
| 1.3 Business and Labour Landscape.....         | 36.56     | 108  |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 55.67     | 76   |
| 1.3.2 Ease of redundancy.....                  | 25.00     | 109  |
| 1.3.3 Active labour market policies.....       | 15.09     | 115  |
| 1.3.4 Labour-employer cooperation.....         | 34.16     | 82   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 50.48     | 59   |
| 1.3.6 Relationship of pay to productivity..... | 38.99     | 85   |
| <b>2 ATTRACT.....42.14</b>                     | <b>71</b> |      |
| 2.1 External Openness.....                     | 42.83     | 47   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 58.54     | 57   |
| 2.1.2 Prevalence of foreign ownership.....     | 65.11     | 50   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 0.46      | 117  |
| 2.1.4 International students.....              | n/a       | n/a  |
| 2.1.5 Brain gain.....                          | 47.23     | 49   |
| 2.2 Internal Openness.....                     | 41.45     | 100  |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 25.88     | 89   |
| 2.2.2 Tolerance of immigrants.....             | 59.46     | 56   |
| 2.2.3 Social mobility.....                     | 51.59     | 57   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | n/a       | n/a  |
| 2.2.5 Gender earnings gap.....                 | 58.54     | 43   |
| 2.2.6 Leadership opportunities for women.....  | 11.76     | 118  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>13,434.13</b> |
| GDP (US\$ billions).....               | <b>211.39</b>    |
| GTCI score.....                        | <b>36.11</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....33.07</b>                         | <b>76</b> |      |
| 3.1 Formal Education.....                       | 14.59     | 96   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 3.35      | 103  |
| 3.1.2 Tertiary enrolment.....                   | n/a       | n/a  |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 14.37     | 83   |
| 3.1.4 Reading, maths, and science.....          | 25.67     | 63   |
| 3.1.5 University ranking.....                   | 14.98     | 61   |
| 3.2 Lifelong Learning.....                      | 47.32     | 46   |
| 3.2.1 Quality of management schools.....        | 34.72     | 84   |
| 3.2.2 Prevalence of training in firms.....      | 82.45     | 4    |
| 3.2.3 Employee development.....                 | 24.78     | 99   |
| 3.3 Access to Growth Opportunities.....         | 37.29     | 78   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 43.86     | 69   |
| 3.3.2 Personal rights.....                      | 70.94     | 42   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 56.73     | 95   |
| 3.3.4 Use of virtual professional networks..... | 1.52      | 109  |
| 3.3.5 Collaboration within organisations.....   | 25.76     | 91   |
| 3.3.6 Collaboration across organisations.....   | 24.93     | 83   |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....40.42</b>            | <b>86</b> |    |
| 4.1 Sustainability.....              | 30.35     | 91 |
| 4.1.1 Pension system.....            | 20.41     | 76 |
| 4.1.2 Social protection.....         | 23.43     | 99 |
| 4.1.3 Brain retention.....           | 47.22     | 50 |
| 4.2 Lifestyle.....                   | 50.49     | 84 |
| 4.2.1 Environmental performance..... | 57.49     | 57 |
| 4.2.2 Personal safety.....           | 51.58     | 87 |
| 4.2.3 Physician density.....         | 17.60     | 82 |
| 4.2.4 Sanitation.....                | 75.27     | 87 |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....38.22</b>      | <b>69</b> |     |
| 5.1 Mid-Level Skills.....                               | 47.61     | 47  |
| 5.1.1 Workforce with secondary education.....           | 70.99     | 21  |
| 5.1.2 Population with secondary education.....          | 49.93     | 34  |
| 5.1.3 Technicians and associate professionals.....      | 56.25     | 31  |
| 5.1.4 Labour productivity per employee.....             | 13.27     | 75  |
| 5.2 Employability.....                                  | 28.83     | 101 |
| 5.2.1 Ease of finding skilled employees.....            | 34.17     | 93  |
| 5.2.2 Relevance of education system to the economy..... | 9.13      | 116 |
| 5.2.3 Skills matching with secondary education.....     | 30.16     | 98  |
| 5.2.4 Skills matching with tertiary education.....      | 41.86     | 74  |

|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....21.00</b>          | <b>70</b> |     |
| 6.1 High-Level Skills.....                          | 27.68     | 66  |
| 6.1.1 Workforce with tertiary education.....        | 46.37     | 35  |
| 6.1.2 Population with tertiary education.....       | 33.45     | 46  |
| 6.1.3 Professionals.....                            | 30.06     | 56  |
| 6.1.4 Researchers.....                              | n/a       | n/a |
| 6.1.5 Senior officials and managers.....            | 2.98      | 112 |
| 6.1.6 Availability of scientists and engineers..... | 25.55     | 99  |
| 6.2 Talent Impact.....                              | 14.32     | 78  |
| 6.2.1 Innovation output.....                        | 21.24     | 81  |
| 6.2.2 High-value exports.....                       | 7.71      | 77  |
| 6.2.3 New product entrepreneurial activity.....     | 23.97     | 62  |
| 6.2.4 New business density.....                     | 17.45     | 33  |
| 6.2.5 Scientific journal articles.....              | 1.22      | 89  |

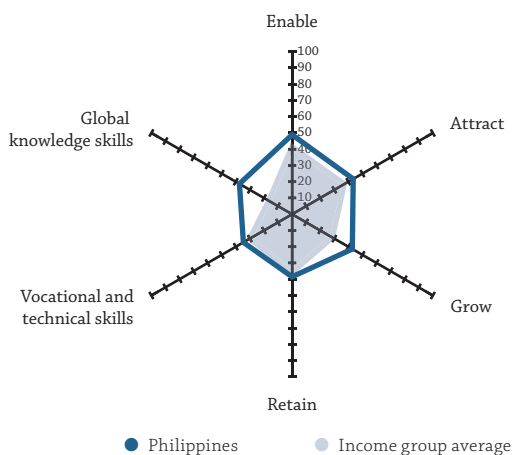


# PHILIPPINES

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>58</b>                                     |
| Income group.....          | <b>Lower-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>104.92</b>                                 |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>48.90</b> | <b>64</b> |
| 1.1 Regulatory Landscape.....                  | 45.04        | 79        |
| 1.1.1 Government effectiveness.....            | 44.91        | 71        |
| 1.1.2 Business-government relations.....       | 73.29        | 24        |
| 1.1.3 Political stability.....                 | 34.49        | 113       |
| 1.1.4 Regulatory quality.....                  | 47.85        | 68        |
| 1.1.5 Corruption.....                          | 24.66        | 86        |
| 1.2 Market Landscape.....                      | 43.70        | 76        |
| 1.2.1 Competition intensity.....               | 72.65        | 50        |
| 1.2.2 Ease of doing business.....              | 50.05        | 94        |
| 1.2.3 Cluster development.....                 | 39.46        | 59        |
| 1.2.4 R&D expenditure.....                     | 2.90         | 92        |
| 1.2.5 ICT infrastructure.....                  | 40.59        | 83        |
| 1.2.6 Technology utilisation.....              | 56.58        | 49        |
| 1.3 Business and Labour Landscape.....         | 57.97        | 41        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 77.67        | 46        |
| 1.3.2 Ease of redundancy.....                  | 62.50        | 64        |
| 1.3.3 Active labour market policies.....       | 33.18        | 78        |
| 1.3.4 Labour-employer cooperation.....         | 56.83        | 31        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 55.24        | 41        |
| 1.3.6 Relationship of pay to productivity..... | 62.38        | 40        |
| <b>2 ATTRACT.....</b>                          | <b>43.42</b> | <b>62</b> |
| 2.1 External Openness.....                     | 30.70        | 88        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 58.44        | 59        |
| 2.1.2 Prevalence of foreign ownership.....     | 53.13        | 83        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 0.28         | 120       |
| 2.1.4 International students.....              | 0.37         | 100       |
| 2.1.5 Brain gain.....                          | 41.30        | 66        |
| 2.2 Internal Openness.....                     | 56.13        | 41        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 20.00        | 100       |
| 2.2.2 Tolerance of immigrants.....             | 58.11        | 59        |
| 2.2.3 Social mobility.....                     | 44.14        | 79        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 76.89        | 46        |
| 2.2.5 Gender earnings gap.....                 | 61.29        | 32        |
| 2.2.6 Leadership opportunities for women.....  | 76.38        | 14        |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>8,342.80</b> |
| GDP (US\$ billions).....               | <b>313.60</b>   |
| GTCI score.....                        | <b>40.94</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>42.80</b> | <b>41</b> |
| 3.1 Formal Education.....                       | 18.31        | 85        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | n/a          | n/a       |
| 3.1.2 Tertiary enrolment.....                   | 28.50        | 71        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 6.31         | 104       |
| 3.1.4 Reading, maths, and science.....          | n/a          | n/a       |
| 3.1.5 University ranking.....                   | 20.13        | 54        |
| 3.2 Lifelong Learning.....                      | 61.39        | 27        |
| 3.2.1 Quality of management schools.....        | 56.14        | 35        |
| 3.2.2 Prevalence of training in firms.....      | 74.41        | 8         |
| 3.2.3 Employee development.....                 | 53.63        | 35        |
| 3.3 Access to Growth Opportunities.....         | 48.68        | 42        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 53.56        | 40        |
| 3.3.2 Personal rights.....                      | 58.18        | 64        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 85.88        | 21        |
| 3.3.4 Use of virtual professional networks..... | 8.08         | 77        |
| 3.3.5 Collaboration within organisations.....   | 51.19        | 35        |
| 3.3.6 Collaboration across organisations.....   | 35.21        | 55        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>38.49</b> | <b>92</b> |
| 4.1 Sustainability.....              | 30.97        | 88        |
| 4.1.1 Pension system.....            | 23.47        | 71        |
| 4.1.2 Social protection.....         | 24.06        | 95        |
| 4.1.3 Brain retention.....           | 45.39        | 55        |
| 4.2 Lifestyle.....                   | 46.00        | 91        |
| 4.2.1 Environmental performance..... | 50.38        | 69        |
| 4.2.2 Personal safety.....           | 42.99        | 100       |
| 4.2.3 Physician density.....         | 17.51        | 83        |
| 4.2.4 Sanitation.....                | 73.12        | 90        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>34.61</b> | <b>73</b> |
| 5.1 Mid-Level Skills.....                               | 16.30        | 100       |
| 5.1.1 Workforce with secondary education.....           | 4.30         | 110       |
| 5.1.2 Population with secondary education.....          | 36.38        | 55        |
| 5.1.3 Technicians and associate professionals.....      | 13.84        | 95        |
| 5.1.4 Labour productivity per employee.....             | 10.69        | 80        |
| 5.2 Employability.....                                  | 52.92        | 39        |
| 5.2.1 Ease of finding skilled employees.....            | 59.10        | 44        |
| 5.2.2 Relevance of education system to the economy..... | 49.92        | 44        |
| 5.2.3 Skills matching with secondary education.....     | 45.37        | 55        |
| 5.2.4 Skills matching with tertiary education.....      | 57.28        | 37        |

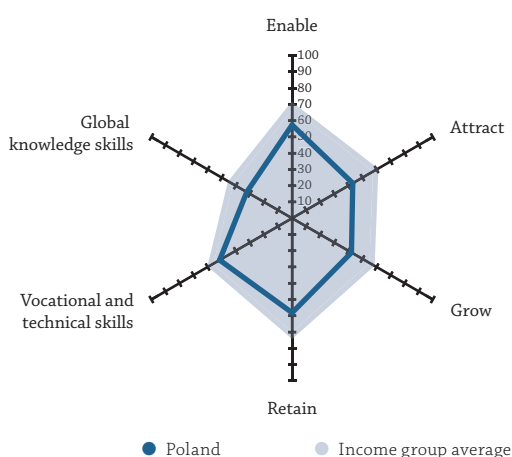
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|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>37.41</b> | <b>34</b> |
| 6.1 High-Level Skills.....                          | 38.75        | 38        |
| 6.1.1 Workforce with tertiary education.....        | 38.65        | 45        |
| 6.1.2 Population with tertiary education.....       | 43.29        | 31        |
| 6.1.3 Professionals.....                            | 12.64        | 95        |
| 6.1.4 Researchers.....                              | 2.19         | 76        |
| 6.1.5 Senior officials and managers.....            | 100.00       | 1         |
| 6.1.6 Availability of scientists and engineers..... | 35.72        | 72        |
| 6.2 Talent Impact.....                              | 36.07        | 30        |
| 6.2.1 Innovation output.....                        | 27.15        | 67        |
| 6.2.2 High-value exports.....                       | 100.00       | 1         |
| 6.2.3 New product entrepreneurial activity.....     | 51.11        | 16        |
| 6.2.4 New business density.....                     | 1.54         | 87        |
| 6.2.5 Scientific journal articles.....              | 0.56         | 102       |

# POLAND

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>42</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>37.98</b>       |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....57.38</b>                      | <b>42</b> |      |
| 1.1 Regulatory Landscape.....                  | 63.09     | 42   |
| 1.1.1 Government effectiveness.....            | 62.28     | 39   |
| 1.1.2 Business-government relations.....       | 45.92     | 91   |
| 1.1.3 Political stability.....                 | 76.39     | 37   |
| 1.1.4 Regulatory quality.....                  | 70.57     | 34   |
| 1.1.5 Corruption.....                          | 60.27     | 32   |
| 1.2 Market Landscape.....                      | 57.93     | 37   |
| 1.2.1 Competition intensity.....               | 72.65     | 50   |
| 1.2.2 Ease of doing business.....              | 83.39     | 24   |
| 1.2.3 Cluster development.....                 | 39.33     | 60   |
| 1.2.4 R&D expenditure.....                     | 22.44     | 36   |
| 1.2.5 ICT infrastructure.....                  | 75.06     | 34   |
| 1.2.6 Technology utilisation.....              | 54.72     | 52   |
| 1.3 Business and Labour Landscape.....         | 51.13     | 66   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 55.67     | 76   |
| 1.3.2 Ease of redundancy.....                  | 75.00     | 45   |
| 1.3.3 Active labour market policies.....       | 38.74     | 69   |
| 1.3.4 Labour-employer cooperation.....         | 38.30     | 73   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 44.35     | 68   |
| 1.3.6 Relationship of pay to productivity..... | 54.72     | 54   |
| <b>2 ATTRACT.....43.10</b>                     | <b>64</b> |      |
| 2.1 External Openness.....                     | 36.92     | 71   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 68.65     | 35   |
| 2.1.2 Prevalence of foreign ownership.....     | 69.45     | 43   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 3.33      | 90   |
| 2.1.4 International students.....              | 17.12     | 54   |
| 2.1.5 Brain gain.....                          | 26.03     | 103  |
| 2.2 Internal Openness.....                     | 49.29     | 63   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 57.65     | 38   |
| 2.2.2 Tolerance of immigrants.....             | 5.41      | 121  |
| 2.2.3 Social mobility.....                     | 47.78     | 70   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 94.84     | 4    |
| 2.2.5 Gender earnings gap.....                 | 56.63     | 49   |
| 2.2.6 Leadership opportunities for women.....  | 33.44     | 80   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>29,291.35</b> |
| GDP (US\$ billions).....               | <b>524.51</b>    |
| GTCI score.....                        | <b>47.41</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....42.19</b>                         | <b>43</b> |      |
| 3.1 Formal Education.....                       | 48.85     | 27   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 59.15     | 20   |
| 3.1.2 Tertiary enrolment.....                   | 54.33     | 27   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 27.55     | 38   |
| 3.1.4 Reading, maths, and science.....          | 77.54     | 16   |
| 3.1.5 University ranking.....                   | 25.68     | 44   |
| 3.2 Lifelong Learning.....                      | 40.79     | 64   |
| 3.2.1 Quality of management schools.....        | 41.14     | 66   |
| 3.2.2 Prevalence of training in firms.....      | 41.16     | 40   |
| 3.2.3 Employee development.....                 | 40.06     | 63   |
| 3.3 Access to Growth Opportunities.....         | 36.94     | 80   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 38.97     | 78   |
| 3.3.2 Personal rights.....                      | 77.87     | 34   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 69.84     | 69   |
| 3.3.4 Use of virtual professional networks..... | 11.44     | 69   |
| 3.3.5 Collaboration within organisations.....   | 10.77     | 120  |
| 3.3.6 Collaboration across organisations.....   | 12.75     | 110  |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....58.14</b>            | <b>46</b> |     |
| 4.1 Sustainability.....              | 45.00     | 56  |
| 4.1.1 Pension system.....            | 80.61     | 29  |
| 4.1.2 Social protection.....         | 18.78     | 107 |
| 4.1.3 Brain retention.....           | 35.60     | 84  |
| 4.2 Lifestyle.....                   | 71.28     | 40  |
| 4.2.1 Environmental performance..... | 61.14     | 45  |
| 4.2.2 Personal safety.....           | 89.71     | 21  |
| 4.2.3 Physician density.....         | 36.43     | 54  |
| 4.2.4 Sanitation.....                | 97.85     | 37  |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....51.46</b>      | <b>35</b> |    |
| 5.1 Mid-Level Skills.....                               | 64.03     | 12 |
| 5.1.1 Workforce with secondary education.....           | 82.75     | 12 |
| 5.1.2 Population with secondary education.....          | 80.31     | 5  |
| 5.1.3 Technicians and associate professionals.....      | 55.80     | 32 |
| 5.1.4 Labour productivity per employee.....             | 37.23     | 40 |
| 5.2 Employability.....                                  | 38.90     | 72 |
| 5.2.1 Ease of finding skilled employees.....            | 55.45     | 50 |
| 5.2.2 Relevance of education system to the economy..... | 34.69     | 67 |
| 5.2.3 Skills matching with secondary education.....     | 31.48     | 93 |
| 5.2.4 Skills matching with tertiary education.....      | 33.98     | 89 |

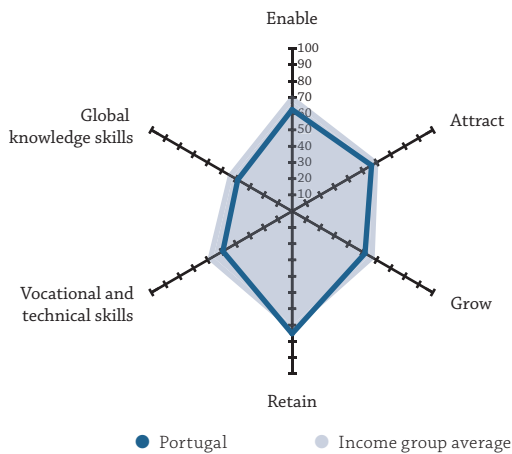
|                                                     |           |    |
|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....32.21</b>          | <b>45</b> |    |
| 6.1 High-Level Skills.....                          | 41.44     | 36 |
| 6.1.1 Workforce with tertiary education.....        | 49.73     | 31 |
| 6.1.2 Population with tertiary education.....       | 38.88     | 36 |
| 6.1.3 Professionals.....                            | 51.40     | 22 |
| 6.1.4 Researchers.....                              | 26.10     | 36 |
| 6.1.5 Senior officials and managers.....            | 36.31     | 34 |
| 6.1.6 Availability of scientists and engineers..... | 46.23     | 50 |
| 6.2 Talent Impact.....                              | 22.98     | 56 |
| 6.2.1 Innovation output.....                        | 43.93     | 39 |
| 6.2.2 High-value exports.....                       | 15.34     | 51 |
| 6.2.3 New product entrepreneurial activity.....     | 12.91     | 77 |
| 6.2.4 New business density.....                     | 7.95      | 56 |
| 6.2.5 Scientific journal articles.....              | 34.77     | 31 |

# PORTUGAL

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>28</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>10.29</b>       |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 62.54 31</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 71.82 | 25   |
| 1.1.1 Government effectiveness.....            | 75.43 | 23   |
| 1.1.2 Business-government relations.....       | 63.13 | 43   |
| 1.1.3 Political stability.....                 | 88.19 | 13   |
| 1.1.4 Regulatory quality.....                  | 67.94 | 36   |
| 1.1.5 Corruption.....                          | 64.38 | 26   |
| 1.2 Market Landscape.....                      | 64.93 | 29   |
| 1.2.1 Competition intensity.....               | 72.00 | 55   |
| 1.2.2 Ease of doing business.....              | 82.56 | 26   |
| 1.2.3 Cluster development.....                 | 51.84 | 37   |
| 1.2.4 R&D expenditure.....                     | 29.57 | 28   |
| 1.2.5 ICT infrastructure.....                  | 79.26 | 27   |
| 1.2.6 Technology utilisation.....              | 74.34 | 27   |
| 1.3 Business and Labour Landscape.....         | 50.89 | 67   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 39.00 | 105  |
| 1.3.2 Ease of redundancy.....                  | 62.50 | 64   |
| 1.3.3 Active labour market policies.....       | 55.45 | 39   |
| 1.3.4 Labour-employer cooperation.....         | 49.60 | 43   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 48.44 | 62   |
| 1.3.6 Relationship of pay to productivity..... | 50.33 | 61   |
| <b>2 ATTRACT..... 56.46 27</b>                 |       |      |
| 2.1 External Openness.....                     | 46.28 | 36   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 78.75 | 14   |
| 2.1.2 Prevalence of foreign ownership.....     | 66.73 | 46   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 17.48 | 44   |
| 2.1.4 International students.....              | 25.12 | 35   |
| 2.1.5 Brain gain.....                          | 43.33 | 61   |
| 2.2 Internal Openness.....                     | 66.64 | 20   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 83.53 | 5    |
| 2.2.2 Tolerance of immigrants.....             | 77.03 | 22   |
| 2.2.3 Social mobility.....                     | 54.22 | 50   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 78.69 | 39   |
| 2.2.5 Gender earnings gap.....                 | 66.91 | 22   |
| 2.2.6 Leadership opportunities for women.....  | 39.47 | 67   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>32,198.82</b> |
| GDP (US\$ billions).....               | <b>217.57</b>    |
| GTCI score.....                        | <b>55.66</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 51.81 31</b>                     |       |      |
| 3.1 Formal Education.....                       | 46.19 | 33   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 53.87 | 23   |
| 3.1.2 Tertiary enrolment.....                   | 51.34 | 35   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 20.90 | 61   |
| 3.1.4 Reading, maths, and science.....          | 74.28 | 21   |
| 3.1.5 University ranking.....                   | 30.56 | 38   |
| 3.2 Lifelong Learning.....                      | 53.45 | 36   |
| 3.2.1 Quality of management schools.....        | 61.81 | 29   |
| 3.2.2 Prevalence of training in firms.....      | n/a   | n/a  |
| 3.2.3 Employee development.....                 | 45.10 | 51   |
| 3.3 Access to Growth Opportunities.....         | 55.78 | 34   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 43.66 | 70   |
| 3.3.2 Personal rights.....                      | 89.16 | 21   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 75.80 | 48   |
| 3.3.4 Use of virtual professional networks..... | 50.71 | 16   |
| 3.3.5 Collaboration within organisations.....   | 35.76 | 63   |
| 3.3.6 Collaboration across organisations.....   | 39.58 | 43   |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 75.33 23</b>        |       |    |
| 4.1 Sustainability.....              | 66.19 | 26 |
| 4.1.1 Pension system.....            | 91.84 | 12 |
| 4.1.2 Social protection.....         | 63.69 | 28 |
| 4.1.3 Brain retention.....           | 43.04 | 60 |
| 4.2 Lifestyle.....                   | 84.48 | 9  |
| 4.2.1 Environmental performance..... | 74.15 | 25 |
| 4.2.2 Personal safety.....           | 94.17 | 15 |
| 4.2.3 Physician density.....         | 70.68 | 4  |
| 4.2.4 Sanitation.....                | 98.92 | 21 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 49.18 41</b>  |       |    |
| 5.1 Mid-Level Skills.....                               | 36.07 | 68 |
| 5.1.1 Workforce with secondary education.....           | 34.92 | 74 |
| 5.1.2 Population with secondary education.....          | 23.68 | 78 |
| 5.1.3 Technicians and associate professionals.....      | 50.45 | 40 |
| 5.1.4 Labour productivity per employee.....             | 35.23 | 42 |
| 5.2 Employability.....                                  | 62.30 | 25 |
| 5.2.1 Ease of finding skilled employees.....            | 70.67 | 27 |
| 5.2.2 Relevance of education system to the economy..... | 55.64 | 30 |
| 5.2.3 Skills matching with secondary education.....     | 58.99 | 31 |
| 5.2.4 Skills matching with tertiary education.....      | 63.89 | 31 |

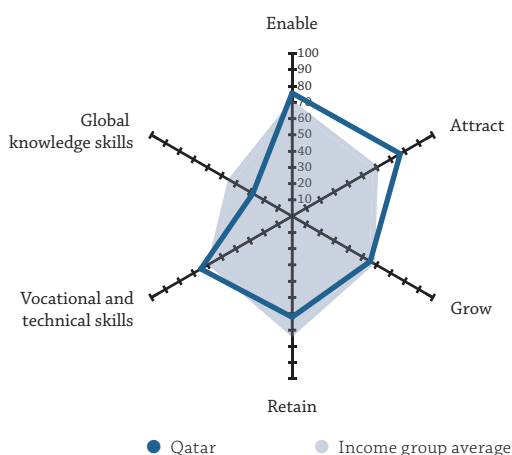
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|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 38.63 33</b>      |       |    |
| 6.1 High-Level Skills.....                          | 43.67 | 33 |
| 6.1.1 Workforce with tertiary education.....        | 38.62 | 46 |
| 6.1.2 Population with tertiary education.....       | 29.03 | 56 |
| 6.1.3 Professionals.....                            | 50.00 | 25 |
| 6.1.4 Researchers.....                              | 47.57 | 23 |
| 6.1.5 Senior officials and managers.....            | 35.71 | 35 |
| 6.1.6 Availability of scientists and engineers..... | 61.10 | 27 |
| 6.2 Talent Impact.....                              | 33.59 | 33 |
| 6.2.1 Innovation output.....                        | 50.51 | 32 |
| 6.2.2 High-value exports.....                       | 9.59  | 70 |
| 6.2.3 New product entrepreneurial activity.....     | 30.16 | 52 |
| 6.2.4 New business density.....                     | 24.10 | 25 |
| 6.2.5 Scientific journal articles.....              | 53.60 | 20 |

# QATAR

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>24</b>                               |
| Income group.....          | <b>High income</b>                      |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>2.64</b>                             |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....75.79</b>                      | <b>20</b> |      |
| 1.1 Regulatory Landscape.....                  | 74.79     | 20   |
| 1.1.1 Government effectiveness.....            | 63.77     | 38   |
| 1.1.2 Business-government relations.....       | 96.47     | 3    |
| 1.1.3 Political stability.....                 | 84.72     | 23   |
| 1.1.4 Regulatory quality.....                  | 64.59     | 39   |
| 1.1.5 Corruption.....                          | 64.38     | 26   |
| 1.2 Market Landscape.....                      | 65.94     | 27   |
| 1.2.1 Competition intensity.....               | 80.70     | 18   |
| 1.2.2 Ease of doing business.....              | 61.05     | 75   |
| 1.2.3 Cluster development.....                 | 84.25     | 7    |
| 1.2.4 R&D expenditure.....                     | 11.68     | 58   |
| 1.2.5 ICT infrastructure.....                  | 79.13     | 29   |
| 1.2.6 Technology utilisation.....              | 78.85     | 18   |
| 1.3 Business and Labour Landscape.....         | 86.65     | 7    |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 80.19     | 12   |
| 1.3.4 Labour-employer cooperation.....         | 74.17     | 15   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 77.08     | 23   |
| 1.3.6 Relationship of pay to productivity..... | 88.47     | 7    |
| <b>2 ATTRACT.....76.84</b>                     | <b>6</b>  |      |
| 2.1 External Openness.....                     | 82.88     | 5    |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 75.69     | 23   |
| 2.1.2 Prevalence of foreign ownership.....     | 53.69     | 79   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 100.00    | 1    |
| 2.1.4 International students.....              | 100.00    | 1    |
| 2.1.5 Brain gain.....                          | 85.05     | 7    |
| 2.2 Internal Openness.....                     | 70.79     | 15   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 61.18     | 31   |
| 2.2.2 Tolerance of immigrants.....             | 85.14     | 12   |
| 2.2.3 Social mobility.....                     | 79.89     | 16   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 85.31     | 22   |
| 2.2.5 Gender earnings gap.....                 | 38.23     | 98   |
| 2.2.6 Leadership opportunities for women.....  | 74.98     | 15   |

|                                        |                   |
|----------------------------------------|-------------------|
| GDP per capita (PPP US\$).....         | <b>128,378.30</b> |
| GDP (US\$ billions).....               | <b>167.61</b>     |
| GTCI score.....                        | <b>60.50</b>      |
| GTCI score (income group average)..... | <b>59.93</b>      |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....55.52</b>                         | <b>23</b> |      |
| 3.1 Formal Education.....                       | 19.49     | 82   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 1.45      | 108  |
| 3.1.2 Tertiary enrolment.....                   | 12.10     | 94   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | n/a       | n/a  |
| 3.1.4 Reading, maths, and science.....          | 32.11     | 58   |
| 3.1.5 University ranking.....                   | 32.31     | 34   |
| 3.2 Lifelong Learning.....                      | 82.41     | 6    |
| 3.2.1 Quality of management schools.....        | 84.33     | 7    |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 80.49     | 13   |
| 3.3 Access to Growth Opportunities.....         | 64.66     | 22   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 74.78     | 21   |
| 3.3.2 Personal rights.....                      | 36.09     | 91   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 84.53     | 26   |
| 3.3.4 Use of virtual professional networks..... | 32.88     | 28   |
| 3.3.5 Collaboration within organisations.....   | 79.02     | 14   |
| 3.3.6 Collaboration across organisations.....   | 80.67     | 9    |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....62.10</b>            | <b>36</b> |     |
| 4.1 Sustainability.....              | 52.78     | 38  |
| 4.1.1 Pension system.....            | 2.45      | 102 |
| 4.1.2 Social protection.....         | 74.19     | 20  |
| 4.1.3 Brain retention.....           | 81.70     | 9   |
| 4.2 Lifestyle.....                   | 71.42     | 39  |
| 4.2.1 Environmental performance..... | 67.29     | 31  |
| 4.2.2 Personal safety.....           | 87.20     | 24  |
| 4.2.3 Physician density.....         | 31.20     | 58  |
| 4.2.4 Sanitation.....                | 100.00    | 1   |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....64.82</b>      | <b>14</b> |    |
| 5.1 Mid-Level Skills.....                               | 44.19     | 53 |
| 5.1.1 Workforce with secondary education.....           | 33.06     | 77 |
| 5.1.2 Population with secondary education.....          | 27.53     | 67 |
| 5.1.3 Technicians and associate professionals.....      | 29.02     | 72 |
| 5.1.4 Labour productivity per employee.....             | 87.13     | 2  |
| 5.2 Employability.....                                  | 85.45     | 4  |
| 5.2.1 Ease of finding skilled employees.....            | 84.98     | 12 |
| 5.2.2 Relevance of education system to the economy..... | 84.34     | 5  |
| 5.2.3 Skills matching with secondary education.....     | 77.76     | 7  |
| 5.2.4 Skills matching with tertiary education.....      | 94.72     | 2  |

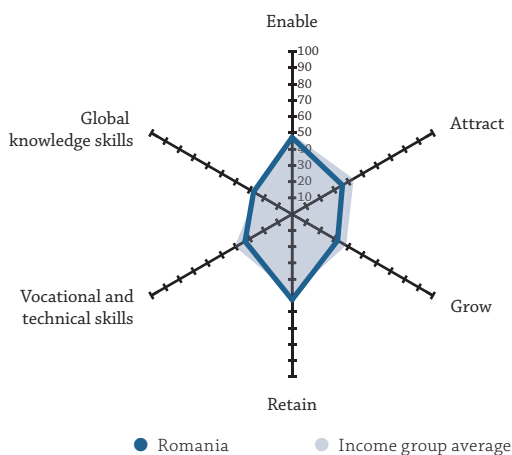
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|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....27.91</b>          | <b>52</b> |    |
| 6.1 High-Level Skills.....                          | 30.57     | 58 |
| 6.1.1 Workforce with tertiary education.....        | 27.28     | 71 |
| 6.1.2 Population with tertiary education.....       | 32.60     | 47 |
| 6.1.3 Professionals.....                            | 23.88     | 69 |
| 6.1.4 Researchers.....                              | 7.24      | 60 |
| 6.1.5 Senior officials and managers.....            | 11.31     | 84 |
| 6.1.6 Availability of scientists and engineers..... | 81.10     | 5  |
| 6.2 Talent Impact.....                              | 25.26     | 49 |
| 6.2.1 Innovation output.....                        | 31.39     | 59 |
| 6.2.2 High-value exports.....                       | 3.98      | 92 |
| 6.2.3 New product entrepreneurial activity.....     | 62.90     | 11 |
| 6.2.4 New business density.....                     | 8.14      | 54 |
| 6.2.5 Scientific journal articles.....              | 19.87     | 43 |

# ROMANIA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>69</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>19.59</b>               |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....47.21 74</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 51.90 | 56   |
| 1.1.1 Government effectiveness.....            | 40.94 | 77   |
| 1.1.2 Business-government relations.....       | 41.94 | 99   |
| 1.1.3 Political stability.....                 | 70.83 | 50   |
| 1.1.4 Regulatory quality.....                  | 61.96 | 45   |
| 1.1.5 Corruption.....                          | 43.84 | 49   |
| 1.2 Market Landscape.....                      | 45.07 | 71   |
| 1.2.1 Competition intensity.....               | 60.19 | 80   |
| 1.2.2 Ease of doing business.....              | 75.43 | 40   |
| 1.2.3 Cluster development.....                 | 14.79 | 111  |
| 1.2.4 R&D expenditure.....                     | 11.04 | 62   |
| 1.2.5 ICT infrastructure.....                  | 67.43 | 53   |
| 1.2.6 Technology utilisation.....              | 41.50 | 89   |
| 1.3 Business and Labour Landscape.....         | 44.65 | 88   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 55.67 | 76   |
| 1.3.2 Ease of redundancy.....                  | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 44.43 | 56   |
| 1.3.4 Labour-employer cooperation.....         | 29.90 | 91   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 32.24 | 98   |
| 1.3.6 Relationship of pay to productivity..... | 30.66 | 105  |
| <b>2 ATTRACT.....35.75 98</b>                  |       |      |
| 2.1 External Openness.....                     | 29.06 | 99   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 50.61 | 80   |
| 2.1.2 Prevalence of foreign ownership.....     | 51.36 | 86   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 3.75  | 85   |
| 2.1.4 International students.....              | 24.21 | 39   |
| 2.1.5 Brain gain.....                          | 15.35 | 119  |
| 2.2 Internal Openness.....                     | 42.45 | 95   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 32.94 | 76   |
| 2.2.2 Tolerance of immigrants.....             | 10.81 | 117  |
| 2.2.3 Social mobility.....                     | 29.60 | 116  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 76.74 | 48   |
| 2.2.5 Gender earnings gap.....                 | 63.08 | 29   |
| 2.2.6 Leadership opportunities for women.....  | 41.55 | 62   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>25,840.84</b> |
| GDP (US\$ billions).....               | <b>211.80</b>    |
| GTCI score.....                        | <b>38.11</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....32.33 77</b>                      |       |      |
| 3.1 Formal Education.....                       | 33.99 | 50   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 57.48 | 22   |
| 3.1.2 Tertiary enrolment.....                   | 39.02 | 56   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 15.12 | 81   |
| 3.1.4 Reading, maths, and science.....          | 46.31 | 45   |
| 3.1.5 University ranking.....                   | 12.02 | 71   |
| 3.2 Lifelong Learning.....                      | 27.75 | 106  |
| 3.2.1 Quality of management schools.....        | 16.23 | 115  |
| 3.2.2 Prevalence of training in firms.....      | 49.21 | 30   |
| 3.2.3 Employee development.....                 | 17.80 | 115  |
| 3.3 Access to Growth Opportunities.....         | 35.26 | 87   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 20.44 | 120  |
| 3.3.2 Personal rights.....                      | 68.48 | 46   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 72.69 | 58   |
| 3.3.4 Use of virtual professional networks..... | 20.79 | 48   |
| 3.3.5 Collaboration within organisations.....   | 19.77 | 105  |
| 3.3.6 Collaboration across organisations.....   | 9.40  | 115  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....52.57 59</b>         |       |     |
| 4.1 Sustainability.....              | 39.64 | 67  |
| 4.1.1 Pension system.....            | 67.35 | 36  |
| 4.1.2 Social protection.....         | 42.98 | 54  |
| 4.1.3 Brain retention.....           | 8.59  | 121 |
| 4.2 Lifestyle.....                   | 65.50 | 46  |
| 4.2.1 Environmental performance..... | 62.26 | 40  |
| 4.2.2 Personal safety.....           | 76.60 | 41  |
| 4.2.3 Physician density.....         | 42.50 | 43  |
| 4.2.4 Sanitation.....                | 80.65 | 83  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....33.41 79</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 50.48 | 38  |
| 5.1.1 Workforce with secondary education.....           | 79.51 | 13  |
| 5.1.2 Population with secondary education.....          | 66.76 | 18  |
| 5.1.3 Technicians and associate professionals.....      | 25.89 | 77  |
| 5.1.4 Labour productivity per employee.....             | 29.74 | 51  |
| 5.2 Employability.....                                  | 16.35 | 120 |
| 5.2.1 Ease of finding skilled employees.....            | 17.46 | 122 |
| 5.2.2 Relevance of education system to the economy..... | 14.20 | 108 |
| 5.2.3 Skills matching with secondary education.....     | 14.38 | 119 |
| 5.2.4 Skills matching with tertiary education.....      | 19.36 | 117 |

|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....27.37 53</b>       |       |    |
| 6.1 High-Level Skills.....                          | 25.18 | 71 |
| 6.1.1 Workforce with tertiary education.....        | 30.00 | 63 |
| 6.1.2 Population with tertiary education.....       | 22.75 | 65 |
| 6.1.3 Professionals.....                            | 41.01 | 41 |
| 6.1.4 Researchers.....                              | 10.98 | 50 |
| 6.1.5 Senior officials and managers.....            | 11.90 | 81 |
| 6.1.6 Availability of scientists and engineers..... | 34.40 | 78 |
| 6.2 Talent Impact.....                              | 29.57 | 40 |
| 6.2.1 Innovation output.....                        | 37.04 | 47 |
| 6.2.2 High-value exports.....                       | 15.42 | 50 |
| 6.2.3 New product entrepreneurial activity.....     | 47.55 | 20 |
| 6.2.4 New business density.....                     | 26.99 | 24 |
| 6.2.5 Scientific journal articles.....              | 20.82 | 40 |

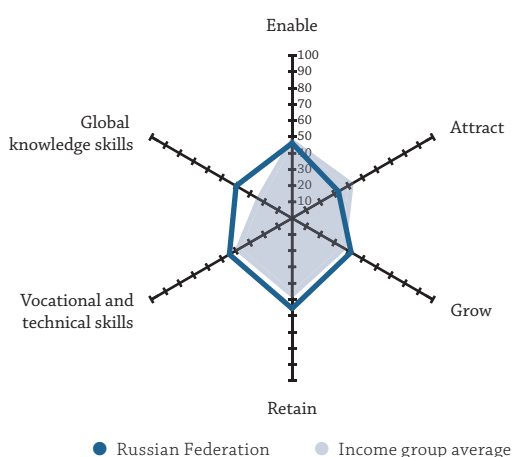
# RUSSIAN FEDERATION

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>49</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>144.50</b>              |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>25,533.00</b> |
| GDP (US\$ billions) .....               | <b>1,577.52</b>  |
| GTCI score.....                         | <b>43.47</b>     |
| GTCI score (income group average) ..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....46.16 81</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 37.26 | 103  |
| 1.1.1 Government effectiveness .....           | 39.70 | 85   |
| 1.1.2 Business-government relations .....      | 47.02 | 89   |
| 1.1.3 Political stability .....                | 43.98 | 103  |
| 1.1.4 Regulatory quality .....                 | 37.80 | 92   |
| 1.1.5 Corruption .....                         | 17.81 | 102  |
| 1.2 Market Landscape.....                      | 53.32 | 48   |
| 1.2.1 Competition intensity .....              | 65.06 | 68   |
| 1.2.2 Ease of doing business .....             | 80.15 | 32   |
| 1.2.3 Cluster development .....                | 31.37 | 82   |
| 1.2.4 R&D expenditure .....                    | 25.54 | 33   |
| 1.2.5 ICT infrastructure .....                 | 70.61 | 43   |
| 1.2.6 Technology utilisation .....             | 47.20 | 67   |
| 1.3 Business and Labour Landscape.....         | 47.90 | 79   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 61.17 | 74   |
| 1.3.2 Ease of redundancy .....                 | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 52.16 | 46   |
| 1.3.4 Labour-employer cooperation .....        | 33.77 | 83   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 35.51 | 89   |
| 1.3.6 Relationship of pay to productivity..... | 54.78 | 53   |
| <b>2 ATTRACT.....32.94 109</b>                 |       |      |
| 2.1 External Openness .....                    | 29.24 | 96   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 40.06 | 102  |
| 2.1.2 Prevalence of foreign ownership .....    | 30.53 | 115  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 16.59 | 46   |
| 2.1.4 International students.....              | 19.76 | 49   |
| 2.1.5 Brain gain.....                          | 39.23 | 72   |
| 2.2 Internal Openness.....                     | 36.65 | 112  |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 9.41  | 112  |
| 2.2.2 Tolerance of immigrants.....             | 29.73 | 103  |
| 2.2.3 Social mobility.....                     | 42.41 | 84   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | n/a   | n/a  |
| 2.2.5 Gender earnings gap .....                | 54.24 | 60   |
| 2.2.6 Leadership opportunities for women.....  | 47.44 | 51   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....41.87 44</b>                      |       |      |
| 3.1 Formal Education.....                       | 47.43 | 30   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 33.03 | 48   |
| 3.1.2 Tertiary enrolment.....                   | 66.93 | 12   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 18.17 | 68   |
| 3.1.4 Reading, maths, and science .....         | 71.85 | 25   |
| 3.1.5 University ranking .....                  | 47.19 | 23   |
| 3.2 Lifelong Learning.....                      | 43.98 | 58   |
| 3.2.1 Quality of management schools.....        | 41.92 | 61   |
| 3.2.2 Prevalence of training in firms .....     | 56.46 | 24   |
| 3.2.3 Employee development.....                 | 33.55 | 72   |
| 3.3 Access to Growth Opportunities .....        | 34.21 | 91   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 41.57 | 75   |
| 3.3.2 Personal rights.....                      | 12.35 | 115  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 63.41 | 85   |
| 3.3.4 Use of virtual professional networks..... | 8.36  | 76   |
| 3.3.5 Collaboration within organisations .....  | 38.70 | 54   |
| 3.3.6 Collaboration across organisations .....  | 40.85 | 41   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....55.54 52</b>         |       |     |
| 4.1 Sustainability .....             | 47.65 | 49  |
| 4.1.1 Pension system.....            | 66.33 | 37  |
| 4.1.2 Social protection .....        | 32.70 | 78  |
| 4.1.3 Brain retention .....          | 43.91 | 57  |
| 4.2 Lifestyle .....                  | 63.44 | 54  |
| 4.2.1 Environmental performance..... | 60.61 | 47  |
| 4.2.2 Personal safety .....          | 41.52 | 102 |
| 4.2.3 Physician density .....        | 63.44 | 12  |
| 4.2.4 Sanitation .....               | 88.17 | 71  |

|                                                          |       |    |
|----------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....44.52 47</b>    |       |    |
| 5.1 Mid-Level Skills .....                               | 44.72 | 52 |
| 5.1.1 Workforce with secondary education .....           | 59.50 | 34 |
| 5.1.2 Population with secondary education .....          | 31.10 | 65 |
| 5.1.3 Technicians and associate professionals .....      | 57.14 | 29 |
| 5.1.4 Labour productivity per employee .....             | 31.13 | 48 |
| 5.2 Employability.....                                   | 44.33 | 61 |
| 5.2.1 Ease of finding skilled employees .....            | 51.59 | 60 |
| 5.2.2 Relevance of education system to the economy ..... | 37.50 | 59 |
| 5.2.3 Skills matching with secondary education.....      | 47.58 | 51 |
| 5.2.4 Skills matching with tertiary education .....      | 40.65 | 77 |

|                                                      |        |    |
|------------------------------------------------------|--------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....39.78 28</b>       |        |    |
| 6.1 High-Level Skills .....                          | 61.47  | 12 |
| 6.1.1 Workforce with tertiary education .....        | 79.05  | 4  |
| 6.1.2 Population with tertiary education .....       | 100.00 | 1  |
| 6.1.3 Professionals.....                             | 65.17  | 12 |
| 6.1.4 Researchers.....                               | 36.05  | 27 |
| 6.1.5 Senior officials and managers .....            | 40.48  | 29 |
| 6.1.6 Availability of scientists and engineers ..... | 48.10  | 48 |
| 6.2 Talent Impact.....                               | 18.09  | 65 |
| 6.2.1 Innovation output.....                         | 33.78  | 55 |
| 6.2.2 High-value exports .....                       | 19.45  | 43 |
| 6.2.3 New product entrepreneurial activity .....     | 0.00   | 86 |
| 6.2.4 New business density .....                     | 20.87  | 28 |
| 6.2.5 Scientific journal articles.....               | 16.37  | 47 |

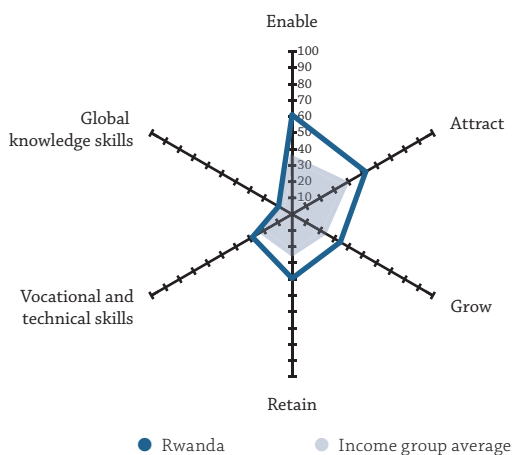


# RWANDA

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>73</b>                 |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>12.21</b>              |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....61.12</b>                      | <b>36</b> |      |
| 1.1 Regulatory Landscape.....                  | 61.32     | 43   |
| 1.1.1 Government effectiveness.....            | 47.89     | 62   |
| 1.1.2 Business-government relations.....       | 91.39     | 6    |
| 1.1.3 Political stability.....                 | 63.43     | 64   |
| 1.1.4 Regulatory quality.....                  | 50.48     | 62   |
| 1.1.5 Corruption.....                          | 53.42     | 41   |
| 1.2 Market Landscape.....                      | 51.82     | 53   |
| 1.2.1 Competition intensity.....               | 60.90     | 78   |
| 1.2.2 Ease of doing business.....              | 76.38     | 36   |
| 1.2.3 Cluster development.....                 | 49.94     | 40   |
| 1.2.4 R&D expenditure.....                     | n/a       | n/a  |
| 1.2.5 ICT infrastructure.....                  | 12.60     | 114  |
| 1.2.6 Technology utilisation.....              | 59.26     | 47   |
| 1.3 Business and Labour Landscape.....         | 70.22     | 27   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 62.50     | 64   |
| 1.3.3 Active labour market policies.....       | 52.97     | 44   |
| 1.3.4 Labour-employer cooperation.....         | 72.62     | 16   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 68.79     | 27   |
| 1.3.6 Relationship of pay to productivity..... | 64.44     | 35   |
| <b>2 ATTRACT.....52.28</b>                     | <b>36</b> |      |
| 2.1 External Openness.....                     | 41.79     | 50   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 64.50     | 43   |
| 2.1.2 Prevalence of foreign ownership.....     | 58.40     | 63   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 7.36      | 64   |
| 2.1.4 International students.....              | 3.52      | 81   |
| 2.1.5 Brain gain.....                          | 75.18     | 13   |
| 2.2 Internal Openness.....                     | 62.77     | 28   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 8.24      | 116  |
| 2.2.2 Tolerance of immigrants.....             | 70.27     | 39   |
| 2.2.3 Social mobility.....                     | 76.48     | 22   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 45.54     | 92   |
| 2.2.5 Gender earnings gap.....                 | 83.27     | 5    |
| 2.2.6 Leadership opportunities for women.....  | 92.81     | 5    |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>2,035.65</b> |
| GDP (US\$ billions).....               | <b>9.14</b>     |
| GTCI score.....                        | <b>37.48</b>    |
| GTCI score (income group average)..... | <b>24.81</b>    |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....34.26</b>                         | <b>73</b> |      |
| 3.1 Formal Education.....                       | 10.02     | 111  |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 34.11     | 44   |
| 3.1.2 Tertiary enrolment.....                   | 5.97      | 107  |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 0.00      | 112  |
| 3.1.4 Reading, maths, and science.....          | n/a       | n/a  |
| 3.1.5 University ranking.....                   | 0.00      | 78   |
| 3.2 Lifelong Learning.....                      | 53.99     | 35   |
| 3.2.1 Quality of management schools.....        | 45.74     | 52   |
| 3.2.2 Prevalence of training in firms.....      | 68.60     | 13   |
| 3.2.3 Employee development.....                 | 47.62     | 42   |
| 3.3 Access to Growth Opportunities.....         | 38.77     | 70   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 60.19     | 30   |
| 3.3.2 Personal rights.....                      | 15.93     | 109  |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 57.16     | 93   |
| 3.3.4 Use of virtual professional networks..... | 1.62      | 108  |
| 3.3.5 Collaboration within organisations.....   | 51.67     | 32   |
| 3.3.6 Collaboration across organisations.....   | 46.02     | 30   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....39.46</b>            | <b>90</b> |     |
| 4.1 Sustainability.....              | 45.50     | 55  |
| 4.1.1 Pension system.....            | 3.06      | 100 |
| 4.1.2 Social protection.....         | 58.01     | 34  |
| 4.1.3 Brain retention.....           | 75.44     | 17  |
| 4.2 Lifestyle.....                   | 33.42     | 100 |
| 4.2.1 Environmental performance..... | 27.09     | 109 |
| 4.2.2 Personal safety.....           | 46.70     | 95  |
| 4.2.3 Physician density.....         | 0.74      | 118 |
| 4.2.4 Sanitation.....                | 59.14     | 97  |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....28.14</b>      | <b>98</b> |     |
| 5.1 Mid-Level Skills.....                               | 4.21      | 118 |
| 5.1.1 Workforce with secondary education.....           | 4.28      | 111 |
| 5.1.2 Population with secondary education.....          | 6.56      | 94  |
| 5.1.3 Technicians and associate professionals.....      | 1.79      | 118 |
| 5.1.4 Labour productivity per employee.....             | n/a       | n/a |
| 5.2 Employability.....                                  | 52.07     | 41  |
| 5.2.1 Ease of finding skilled employees.....            | 54.87     | 52  |
| 5.2.2 Relevance of education system to the economy..... | 53.80     | 36  |
| 5.2.3 Skills matching with secondary education.....     | 50.48     | 41  |
| 5.2.4 Skills matching with tertiary education.....      | 49.14     | 59  |

|                                                     |            |     |
|-----------------------------------------------------|------------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....9.63</b>           | <b>108</b> |     |
| 6.1 High-Level Skills.....                          | 9.28       | 114 |
| 6.1.1 Workforce with tertiary education.....        | 1.57       | 113 |
| 6.1.2 Population with tertiary education.....       | 4.07       | 96  |
| 6.1.3 Professionals.....                            | 3.93       | 114 |
| 6.1.4 Researchers.....                              | 0.06       | 102 |
| 6.1.5 Senior officials and managers.....            | 2.38       | 115 |
| 6.1.6 Availability of scientists and engineers..... | 43.66      | 56  |
| 6.2 Talent Impact.....                              | 9.97       | 94  |
| 6.2.1 Innovation output.....                        | 7.92       | 114 |
| 6.2.2 High-value exports.....                       | 22.28      | 38  |
| 6.2.3 New product entrepreneurial activity.....     | n/a        | n/a |
| 6.2.4 New business density.....                     | 9.35       | 49  |
| 6.2.5 Scientific journal articles.....              | 0.34       | 110 |

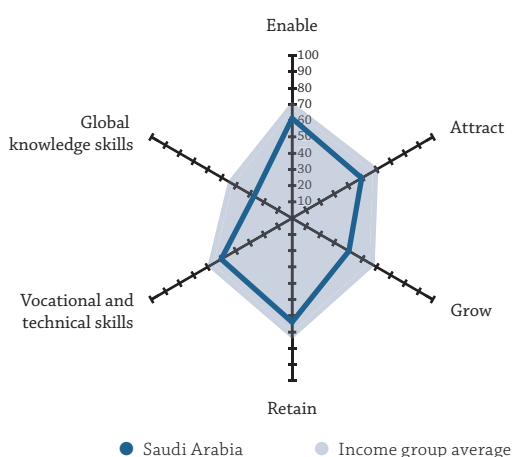


# SAUDI ARABIA

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>39</b>                               |
| Income group.....          | <b>High income</b>                      |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>32.94</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....61.45</b>                      | <b>34</b> |      |
| 1.1 Regulatory Landscape.....                  | 54.12     | 52   |
| 1.1.1 Government effectiveness.....            | 51.12     | 53   |
| 1.1.2 Business-government relations.....       | 71.52     | 27   |
| 1.1.3 Political stability.....                 | 53.01     | 86   |
| 1.1.4 Regulatory quality.....                  | 49.76     | 65   |
| 1.1.5 Corruption.....                          | 45.21     | 47   |
| 1.2 Market Landscape.....                      | 59.99     | 34   |
| 1.2.1 Competition intensity.....               | 75.86     | 38   |
| 1.2.2 Ease of doing business.....              | 56.81     | 80   |
| 1.2.3 Cluster development.....                 | 67.52     | 20   |
| 1.2.4 R&D expenditure.....                     | 18.89     | 41   |
| 1.2.5 ICT infrastructure.....                  | 70.36     | 45   |
| 1.2.6 Technology utilisation.....              | 70.53     | 30   |
| 1.3 Business and Labour Landscape.....         | 70.23     | 26   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 83.33     | 45   |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 68.23     | 25   |
| 1.3.4 Labour-employer cooperation.....         | 50.66     | 42   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 54.18     | 49   |
| 1.3.6 Relationship of pay to productivity..... | 64.98     | 33   |
| <b>2 ATTRACT.....49.43</b>                     | <b>41</b> |      |
| 2.1 External Openness.....                     | 55.13     | 25   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 67.28     | 37   |
| 2.1.2 Prevalence of foreign ownership.....     | 42.16     | 101  |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 76.37     | 8    |
| 2.1.4 International students.....              | 24.70     | 38   |
| 2.1.5 Brain gain.....                          | 65.14     | 22   |
| 2.2 Internal Openness.....                     | 43.73     | 91   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 27.06     | 86   |
| 2.2.2 Tolerance of immigrants.....             | 85.14     | 12   |
| 2.2.3 Social mobility.....                     | 64.86     | 31   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 59.58     | 78   |
| 2.2.5 Gender earnings gap.....                 | 6.45      | 117  |
| 2.2.6 Leadership opportunities for women.....  | 19.33     | 106  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>53,844.74</b> |
| GDP (US\$ billions).....               | <b>683.83</b>    |
| GTCI score.....                        | <b>48.78</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....40.37</b>                         | <b>52</b> |      |
| 3.1 Formal Education.....                       | 35.62     | 49   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 11.19     | 84   |
| 3.1.2 Tertiary enrolment.....                   | 54.36     | 26   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | n/a       | n/a  |
| 3.1.4 Reading, maths, and science.....          | n/a       | n/a  |
| 3.1.5 University ranking.....                   | 41.30     | 30   |
| 3.2 Lifelong Learning.....                      | 44.47     | 57   |
| 3.2.1 Quality of management schools.....        | 46.49     | 49   |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 42.44     | 58   |
| 3.3 Access to Growth Opportunities.....         | 41.02     | 64   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 51.19     | 44   |
| 3.3.2 Personal rights.....                      | 12.05     | 116  |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 81.68     | 33   |
| 3.3.4 Use of virtual professional networks..... | 17.87     | 57   |
| 3.3.5 Collaboration within organisations.....   | 37.34     | 60   |
| 3.3.6 Collaboration across organisations.....   | 46.02     | 30   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....63.95</b>            | <b>33</b> |     |
| 4.1 Sustainability.....              | 64.15     | 27  |
| 4.1.1 Pension system.....            | n/a       | n/a |
| 4.1.2 Social protection.....         | 61.34     | 30  |
| 4.1.3 Brain retention.....           | 66.97     | 26  |
| 4.2 Lifestyle.....                   | 63.75     | 51  |
| 4.2.1 Environmental performance..... | 50.08     | 73  |
| 4.2.2 Personal safety.....           | 64.04     | 61  |
| 4.2.3 Physician density.....         | 40.89     | 45  |
| 4.2.4 Sanitation.....                | 100.00    | 1   |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....50.35</b>      | <b>38</b> |    |
| 5.1 Mid-Level Skills.....                               | 51.80     | 34 |
| 5.1.1 Workforce with secondary education.....           | 43.66     | 63 |
| 5.1.2 Population with secondary education.....          | 32.67     | 62 |
| 5.1.3 Technicians and associate professionals.....      | 50.89     | 38 |
| 5.1.4 Labour productivity per employee.....             | 79.98     | 3  |
| 5.2 Employability.....                                  | 48.91     | 48 |
| 5.2.1 Ease of finding skilled employees.....            | 51.52     | 61 |
| 5.2.2 Relevance of education system to the economy..... | 51.97     | 39 |
| 5.2.3 Skills matching with secondary education.....     | 42.70     | 62 |
| 5.2.4 Skills matching with tertiary education.....      | 49.43     | 57 |

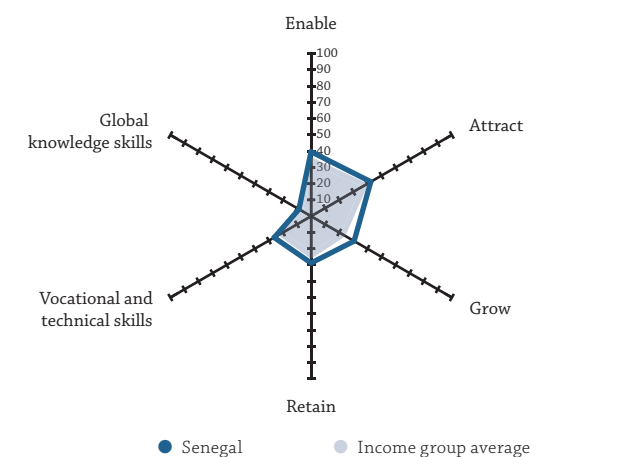
|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....27.12</b>          | <b>54</b> |     |
| 6.1 High-Level Skills.....                          | 37.22     | 42  |
| 6.1.1 Workforce with tertiary education.....        | 41.17     | 42  |
| 6.1.2 Population with tertiary education.....       | 33.79     | 45  |
| 6.1.3 Professionals.....                            | 30.90     | 54  |
| 6.1.4 Researchers.....                              | n/a       | n/a |
| 6.1.5 Senior officials and managers.....            | 23.21     | 58  |
| 6.1.6 Availability of scientists and engineers..... | 57.04     | 32  |
| 6.2 Talent Impact.....                              | 17.01     | 69  |
| 6.2.1 Innovation output.....                        | 23.48     | 76  |
| 6.2.2 High-value exports.....                       | 5.38      | 86  |
| 6.2.3 New product entrepreneurial activity.....     | 42.92     | 34  |
| 6.2.4 New business density.....                     | 2.07      | 84  |
| 6.2.5 Scientific journal articles.....              | 11.20     | 51  |

# SENEGAL

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>102</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>15.85</b>              |

GTCI 2019 Country Profile by Pillar



|                                                     | Score | Rank |
|-----------------------------------------------------|-------|------|
| <b>1 ENABLE.....39.72 97</b>                        |       |      |
| 1.1 Regulatory Landscape.....48.59                  | 65    |      |
| 1.1.1 Government effectiveness.....33.50            | 92    |      |
| 1.1.2 Business-government relations.....66.89       | 36    |      |
| 1.1.3 Political stability.....58.33                 | 76    |      |
| 1.1.4 Regulatory quality.....44.50                  | 76    |      |
| 1.1.5 Corruption.....39.73                          | 54    |      |
| 1.2 Market Landscape.....39.66                      | 89    |      |
| 1.2.1 Competition intensity.....67.19               | 65    |      |
| 1.2.2 Ease of doing business.....39.85              | 109   |      |
| 1.2.3 Cluster development.....28.63                 | 87    |      |
| 1.2.4 R&D expenditure.....17.39                     | 46    |      |
| 1.2.5 ICT infrastructure.....24.05                  | 105   |      |
| 1.2.6 Technology utilisation.....60.83              | 45    |      |
| 1.3 Business and Labour Landscape.....30.91         | 116   |      |
| Labour Market                                       |       |      |
| 1.3.1 Ease of hiring.....0.00                       | 121   |      |
| 1.3.2 Ease of redundancy.....50.00                  | 85    |      |
| 1.3.3 Active labour market policies.....26.79       | 94    |      |
| 1.3.4 Labour-employer cooperation.....39.65         | 66    |      |
| Management Practice                                 |       |      |
| 1.3.5 Professional management.....37.50             | 87    |      |
| 1.3.6 Relationship of pay to productivity.....31.55 | 104   |      |
| <b>2 ATTRACT.....42.42 67</b>                       |       |      |
| 2.1 External Openness.....40.49                     | 59    |      |
| Attract Business                                    |       |      |
| 2.1.1 FDI and technology transfer.....51.73         | 75    |      |
| 2.1.2 Prevalence of foreign ownership.....59.26     | 57    |      |
| Attract People                                      |       |      |
| 2.1.3 Migrant stock.....3.32                        | 91    |      |
| 2.1.4 International students.....40.85              | 25    |      |
| 2.1.5 Brain gain.....47.29                          | 48    |      |
| 2.2 Internal Openness.....44.35                     | 88    |      |
| Social Inclusion                                    |       |      |
| 2.2.1 Tolerance of minorities.....37.65             | 68    |      |
| 2.2.2 Tolerance of immigrants.....87.84             | 10    |      |
| 2.2.3 Social mobility.....48.44                     | 67    |      |
| Gender Equality                                     |       |      |
| 2.2.4 Female graduates.....12.97                    | 102   |      |
| 2.2.5 Gender earnings gap.....40.74                 | 91    |      |
| 2.2.6 Leadership opportunities for women.....38.48  | 68    |      |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>2,712.34</b> |
| GDP (US\$ billions).....               | <b>16.37</b>    |
| GTCI score.....                        | <b>29.38</b>    |
| GTCI score (income group average)..... | <b>24.81</b>    |

|                                                     | Score | Rank |
|-----------------------------------------------------|-------|------|
| <b>3 GROW.....30.57 84</b>                          |       |      |
| 3.1 Formal Education.....18.07                      | 87    |      |
| Enrolment                                           |       |      |
| 3.1.1 Vocational enrolment.....9.75                 | 88    |      |
| 3.1.2 Tertiary enrolment.....8.10                   | 98    |      |
| Quality                                             |       |      |
| 3.1.3 Tertiary education expenditure.....54.41      | 4     |      |
| 3.1.4 Reading, maths, and science.....n/a           | n/a   |      |
| 3.1.5 University ranking.....0.00                   | 78    |      |
| 3.2 Lifelong Learning.....34.47                     | 81    |      |
| 3.2.1 Quality of management schools.....56.03       | 37    |      |
| 3.2.2 Prevalence of training in firms.....18.47     | 79    |      |
| 3.2.3 Employee development.....28.91                | 89    |      |
| 3.3 Access to Growth Opportunities.....39.17        | 67    |      |
| Empowerment                                         |       |      |
| 3.3.1 Delegation of authority.....25.36             | 112   |      |
| 3.3.2 Personal rights.....72.01                     | 39    |      |
| Collaboration                                       |       |      |
| 3.3.3 Use of virtual social networks.....64.85      | 82    |      |
| 3.3.4 Use of virtual professional networks.....4.84 | 90    |      |
| 3.3.5 Collaboration within organisations.....40.79  | 48    |      |
| 3.3.6 Collaboration across organisations.....27.15  | 76    |      |

|                                           |     |  |
|-------------------------------------------|-----|--|
| <b>4 RETAIN.....28.78 105</b>             |     |  |
| 4.1 Sustainability.....21.66              | 112 |  |
| 4.1.1 Pension system.....3.06             | 100 |  |
| 4.1.2 Social protection.....26.26         | 92  |  |
| 4.1.3 Brain retention.....35.67           | 83  |  |
| 4.2 Lifestyle.....35.89                   | 96  |  |
| 4.2.1 Environmental performance.....36.82 | 97  |  |
| 4.2.2 Personal safety.....61.85           | 65  |  |
| 4.2.3 Physician density.....0.80          | 117 |  |
| 4.2.4 Sanitation.....44.09                | 104 |  |

|                                                              |     |  |
|--------------------------------------------------------------|-----|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....26.20 102</b>       |     |  |
| 5.1 Mid-Level Skills.....5.11                                | 116 |  |
| 5.1.1 Workforce with secondary education.....5.79            | 108 |  |
| 5.1.2 Population with secondary education.....5.56           | 97  |  |
| 5.1.3 Technicians and associate professionals.....5.80       | 111 |  |
| 5.1.4 Labour productivity per employee.....3.27              | 95  |  |
| 5.2 Employability.....47.29                                  | 53  |  |
| 5.2.1 Ease of finding skilled employees.....65.53            | 33  |  |
| 5.2.2 Relevance of education system to the economy.....32.69 | 72  |  |
| 5.2.3 Skills matching with secondary education.....43.03     | 59  |  |
| 5.2.4 Skills matching with tertiary education.....47.90      | 62  |  |

|                                                          |     |  |
|----------------------------------------------------------|-----|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....8.63 111</b>            |     |  |
| 6.1 High-Level Skills.....10.81                          | 110 |  |
| 6.1.1 Workforce with tertiary education.....7.28         | 103 |  |
| 6.1.2 Population with tertiary education.....5.26        | 95  |  |
| 6.1.3 Professionals.....9.83                             | 104 |  |
| 6.1.4 Researchers.....6.58                               | 63  |  |
| 6.1.5 Senior officials and managers.....4.17             | 109 |  |
| 6.1.6 Availability of scientists and engineers.....31.72 | 84  |  |
| 6.2 Talent Impact.....6.45                               | 110 |  |
| 6.2.1 Innovation output.....20.21                        | 88  |  |
| 6.2.2 High-value exports.....3.77                        | 96  |  |
| 6.2.3 New product entrepreneurial activity.....5.43      | 82  |  |
| 6.2.4 New business density.....1.98                      | 86  |  |
| 6.2.5 Scientific journal articles.....0.85               | 94  |  |

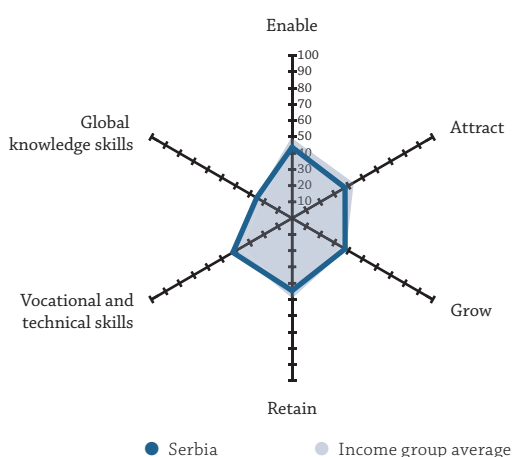
# SERBIA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>68</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>7.02</b>                |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>15,090.03</b> |
| GDP (US\$ billions) .....               | <b>41.43</b>     |
| GTCI score.....                         | <b>38.45</b>     |
| GTCI score (income group average) ..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 43.64 85</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 47.46 | 71   |
| 1.1.1 Government effectiveness .....           | 47.39 | 65   |
| 1.1.2 Business-government relations .....      | 40.62 | 101  |
| 1.1.3 Political stability .....                | 65.74 | 61   |
| 1.1.4 Regulatory quality .....                 | 49.28 | 66   |
| 1.1.5 Corruption .....                         | 34.25 | 61   |
| 1.2 Market Landscape.....                      | 45.56 | 69   |
| 1.2.1 Competition intensity .....              | 49.66 | 108  |
| 1.2.2 Ease of doing business .....             | 75.90 | 38   |
| 1.2.3 Cluster development .....                | 25.97 | 93   |
| 1.2.4 R&D expenditure .....                    | 20.67 | 37   |
| 1.2.5 ICT infrastructure .....                 | 70.23 | 46   |
| 1.2.6 Technology utilisation .....             | 30.91 | 111  |
| 1.3 Business and Labour Landscape.....         | 37.92 | 104  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 22.33 | 112  |
| 1.3.2 Ease of redundancy .....                 | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 32.93 | 79   |
| 1.3.4 Labour-employer cooperation .....        | 28.41 | 97   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 20.94 | 121  |
| 1.3.6 Relationship of pay to productivity..... | 47.89 | 64   |
| <b>2 ATTRACT..... 37.62 94</b>                 |       |      |
| 2.1 External Openness .....                    | 31.15 | 85   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 44.67 | 95   |
| 2.1.2 Prevalence of foreign ownership .....    | 56.19 | 70   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 18.72 | 42   |
| 2.1.4 International students.....              | 21.34 | 44   |
| 2.1.5 Brain gain.....                          | 14.81 | 120  |
| 2.2 Internal Openness.....                     | 44.09 | 90   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 23.53 | 95   |
| 2.2.2 Tolerance of immigrants.....             | 52.70 | 67   |
| 2.2.3 Social mobility.....                     | 24.52 | 120  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | 76.66 | 49   |
| 2.2.5 Gender earnings gap .....                | 60.69 | 33   |
| 2.2.6 Leadership opportunities for women.....  | 26.41 | 94   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 37.68 58</b>                     |       |      |
| 3.1 Formal Education.....                       | 40.24 | 39   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 73.07 | 12   |
| 3.1.2 Tertiary enrolment.....                   | 50.68 | 38   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 28.33 | 36   |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 8.89  | 76   |
| 3.2 Lifelong Learning.....                      | 34.50 | 80   |
| 3.2.1 Quality of management schools.....        | 36.23 | 79   |
| 3.2.2 Prevalence of training in firms .....     | 45.38 | 34   |
| 3.2.3 Employee development.....                 | 21.89 | 107  |
| 3.3 Access to Growth Opportunities .....        | 38.30 | 72   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 36.13 | 84   |
| 3.3.2 Personal rights.....                      | 65.58 | 51   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 69.35 | 70   |
| 3.3.4 Use of virtual professional networks..... | 13.80 | 65   |
| 3.3.5 Collaboration within organisations .....  | 25.06 | 95   |
| 3.3.6 Collaboration across organisations .....  | 19.89 | 95   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 44.57 71</b>        |       |     |
| 4.1 Sustainability .....             | 23.09 | 111 |
| 4.1.1 Pension system.....            | 43.88 | 53  |
| 4.1.2 Social protection .....        | 20.57 | 105 |
| 4.1.3 Brain retention .....          | 4.83  | 123 |
| 4.2 Lifestyle.....                   | 66.05 | 45  |
| 4.2.1 Environmental performance..... | 50.11 | 71  |
| 4.2.2 Personal safety .....          | 80.25 | 35  |
| 4.2.3 Physician density .....        | 39.20 | 49  |
| 4.2.4 Sanitation .....               | 94.62 | 53  |

|                                                          |       |    |
|----------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 42.05 54</b>   |       |    |
| 5.1 Mid-Level Skills .....                               | 47.37 | 48 |
| 5.1.1 Workforce with secondary education .....           | 46.27 | 61 |
| 5.1.2 Population with secondary education .....          | 70.04 | 14 |
| 5.1.3 Technicians and associate professionals .....      | 50.89 | 38 |
| 5.1.4 Labour productivity per employee.....              | 22.28 | 62 |
| 5.2 Employability.....                                   | 36.73 | 77 |
| 5.2.1 Ease of finding skilled employees .....            | 34.30 | 92 |
| 5.2.2 Relevance of education system to the economy ..... | 26.24 | 87 |
| 5.2.3 Skills matching with secondary education.....      | 47.36 | 52 |
| 5.2.4 Skills matching with tertiary education .....      | 39.00 | 81 |

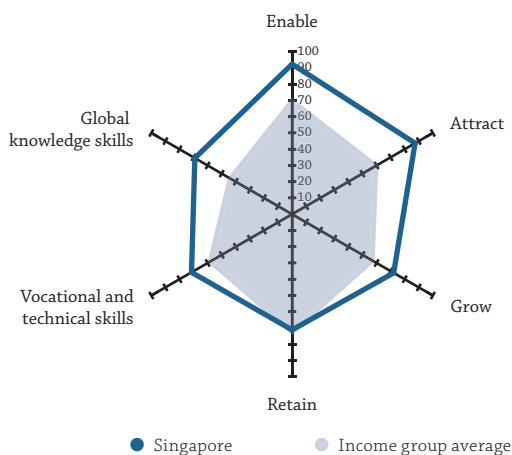
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|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS ..... 25.16 62</b>      |       |     |
| 6.1 High-Level Skills .....                          | 31.12 | 55  |
| 6.1.1 Workforce with tertiary education .....        | 37.88 | 49  |
| 6.1.2 Population with tertiary education .....       | 32.09 | 48  |
| 6.1.3 Professionals.....                             | 36.24 | 48  |
| 6.1.4 Researchers.....                               | 25.79 | 37  |
| 6.1.5 Senior officials and managers .....            | 16.07 | 70  |
| 6.1.6 Availability of scientists and engineers ..... | 38.67 | 66  |
| 6.2 Talent Impact.....                               | 19.19 | 62  |
| 6.2.1 Innovation output.....                         | 32.96 | 57  |
| 6.2.2 High-value exports .....                       | 6.59  | 83  |
| 6.2.3 New product entrepreneurial activity .....     | n/a   | n/a |
| 6.2.4 New business density .....                     | 8.43  | 51  |
| 6.2.5 Scientific journal articles.....               | 28.80 | 35  |

# SINGAPORE

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>2</b>                                      |
| Income group.....          | <b>High income</b>                            |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>5.61</b>                                   |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 92.34 1</b>                   |        |      |
| 1.1 Regulatory Landscape.....                  | 98.63  | 1    |
| 1.1.1 Government effectiveness.....            | 100.00 | 1    |
| 1.1.2 Business-government relations.....       | 100.00 | 1    |
| 1.1.3 Political stability.....                 | 100.00 | 1    |
| 1.1.4 Regulatory quality.....                  | 100.00 | 1    |
| 1.1.5 Corruption.....                          | 93.15  | 6    |
| 1.2 Market Landscape.....                      | 81.85  | 8    |
| 1.2.1 Competition intensity.....               | 85.66  | 14   |
| 1.2.2 Ease of doing business.....              | 96.44  | 2    |
| 1.2.3 Cluster development.....                 | 83.37  | 8    |
| 1.2.4 R&D expenditure.....                     | 51.20  | 13   |
| 1.2.5 ICT infrastructure.....                  | 88.17  | 11   |
| 1.2.6 Technology utilisation.....              | 86.24  | 14   |
| 1.3 Business and Labour Landscape.....         | 96.56  | 2    |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 87.50  | 34   |
| 1.3.3 Active labour market policies.....       | 98.51  | 2    |
| 1.3.4 Labour-employer cooperation.....         | 99.94  | 2    |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 95.60  | 4    |
| 1.3.6 Relationship of pay to productivity..... | 97.81  | 2    |
| <b>2 ATTRACT..... 87.39 1</b>                  |        |      |
| 2.1 External Openness.....                     | 95.82  | 1    |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 95.18  | 2    |
| 2.1.2 Prevalence of foreign ownership.....     | 98.63  | 2    |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 94.91  | 5    |
| 2.1.4 International students.....              | 96.60  | 5    |
| 2.1.5 Brain gain.....                          | 93.80  | 4    |
| 2.2 Internal Openness.....                     | 78.96  | 6    |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 82.35  | 7    |
| 2.2.2 Tolerance of immigrants.....             | 66.22  | 44   |
| 2.2.3 Social mobility.....                     | 94.12  | 5    |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | n/a    | n/a  |
| 2.2.5 Gender earnings gap.....                 | 64.52  | 26   |
| 2.2.6 Leadership opportunities for women.....  | 87.59  | 7    |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>93,905.42</b> |
| GDP (US\$ billions).....               | <b>323.91</b>    |
| GTCI score.....                        | <b>77.27</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score  | Rank |
|-------------------------------------------------|--------|------|
| <b>3 GROW..... 72.17 11</b>                     |        |      |
| 3.1 Formal Education.....                       | 54.35  | 16   |
| Enrolment                                       |        |      |
| 3.1.1 Vocational enrolment.....                 | 24.09  | 58   |
| 3.1.2 Tertiary enrolment.....                   | n/a    | n/a  |
| Quality                                         |        |      |
| 3.1.3 Tertiary education expenditure.....       | 23.70  | 56   |
| 3.1.4 Reading, maths, and science.....          | 100.00 | 1    |
| 3.1.5 University ranking.....                   | 69.61  | 11   |
| 3.2 Lifelong Learning.....                      | 88.26  | 4    |
| 3.2.1 Quality of management schools.....        | 88.42  | 4    |
| 3.2.2 Prevalence of training in firms.....      | n/a    | n/a  |
| 3.2.3 Employee development.....                 | 88.11  | 5    |
| 3.3 Access to Growth Opportunities.....         | 73.90  | 18   |
| Empowerment                                     |        |      |
| 3.3.1 Delegation of authority.....              | 78.81  | 17   |
| 3.3.2 Personal rights.....                      | 55.20  | 70   |
| Collaboration                                   |        |      |
| 3.3.3 Use of virtual social networks.....       | 93.60  | 7    |
| 3.3.4 Use of virtual professional networks..... | 67.96  | 12   |
| 3.3.5 Collaboration within organisations.....   | 76.99  | 16   |
| 3.3.6 Collaboration across organisations.....   | 70.81  | 12   |

|                                      |        |    |
|--------------------------------------|--------|----|
| <b>4 RETAIN..... 71.18 26</b>        |        |    |
| 4.1 Sustainability.....              | 68.03  | 23 |
| 4.1.1 Pension system.....            | 61.22  | 42 |
| 4.1.2 Social protection.....         | 54.54  | 38 |
| 4.1.3 Brain retention.....           | 88.31  | 5  |
| 4.2 Lifestyle.....                   | 74.34  | 31 |
| 4.2.1 Environmental performance..... | 61.34  | 44 |
| 4.2.2 Personal safety.....           | 99.81  | 3  |
| 4.2.3 Physician density.....         | 36.20  | 55 |
| 4.2.4 Sanitation.....                | 100.00 | 1  |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 71.47 7</b>   |       |    |
| 5.1 Mid-Level Skills.....                               | 58.41 | 24 |
| 5.1.1 Workforce with secondary education.....           | 39.25 | 69 |
| 5.1.2 Population with secondary education.....          | 26.82 | 69 |
| 5.1.3 Technicians and associate professionals.....      | 88.39 | 4  |
| 5.1.4 Labour productivity per employee.....             | 79.18 | 7  |
| 5.2 Employability.....                                  | 84.53 | 6  |
| 5.2.1 Ease of finding skilled employees.....            | 80.75 | 15 |
| 5.2.2 Relevance of education system to the economy..... | 90.56 | 2  |
| 5.2.3 Skills matching with secondary education.....     | 78.27 | 6  |
| 5.2.4 Skills matching with tertiary education.....      | 88.53 | 4  |

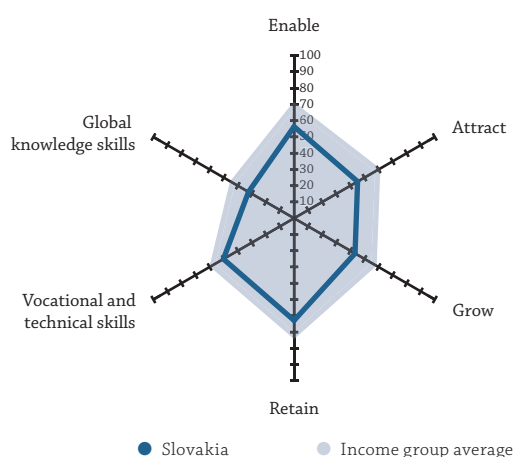
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|-----------------------------------------------------|--------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 69.09 1</b>       |        |    |
| 6.1 High-Level Skills.....                          | 75.31  | 2  |
| 6.1.1 Workforce with tertiary education.....        | 79.17  | 3  |
| 6.1.2 Population with tertiary education.....       | 70.97  | 5  |
| 6.1.3 Professionals.....                            | 49.72  | 26 |
| 6.1.4 Researchers.....                              | 81.55  | 5  |
| 6.1.5 Senior officials and managers.....            | 94.64  | 2  |
| 6.1.6 Availability of scientists and engineers..... | 75.82  | 9  |
| 6.2 Talent Impact.....                              | 62.87  | 3  |
| 6.2.1 Innovation output.....                        | 63.36  | 15 |
| 6.2.2 High-value exports.....                       | 100.00 | 1  |
| 6.2.3 New product entrepreneurial activity.....     | 29.13  | 54 |
| 6.2.4 New business density.....                     | 41.49  | 15 |
| 6.2.5 Scientific journal articles.....              | 80.34  | 5  |

# SLOVAKIA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>41</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>5.44</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>56.36</b> | <b>45</b> |
| 1.1 Regulatory Landscape.....                  | 57.37        | 46        |
| 1.1.1 Government effectiveness.....            | 67.25        | 36        |
| 1.1.2 Business-government relations.....       | 24.94        | 121       |
| 1.1.3 Political stability.....                 | 78.94        | 35        |
| 1.1.4 Regulatory quality.....                  | 69.14        | 35        |
| 1.1.5 Corruption.....                          | 46.58        | 44        |
| 1.2 Market Landscape.....                      | 57.84        | 38        |
| 1.2.1 Competition intensity.....               | 77.34        | 32        |
| 1.2.2 Ease of doing business.....              | 79.08        | 35        |
| 1.2.3 Cluster development.....                 | 41.02        | 54        |
| 1.2.4 R&D expenditure.....                     | 18.29        | 43        |
| 1.2.5 ICT infrastructure.....                  | 70.48        | 44        |
| 1.2.6 Technology utilisation.....              | 60.83        | 45        |
| 1.3 Business and Labour Landscape.....         | 53.89        | 56        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 55.67        | 76        |
| 1.3.2 Ease of redundancy.....                  | 62.50        | 64        |
| 1.3.3 Active labour market policies.....       | 50.80        | 48        |
| 1.3.4 Labour-employer cooperation.....         | 38.97        | 69        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 53.28        | 52        |
| 1.3.6 Relationship of pay to productivity..... | 62.09        | 41        |
| <b>2 ATTRACT.....</b>                          | <b>45.12</b> | <b>56</b> |
| 2.1 External Openness.....                     | 44.78        | 40        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 78.70        | 15        |
| 2.1.2 Prevalence of foreign ownership.....     | 94.22        | 5         |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 6.86         | 66        |
| 2.1.4 International students.....              | 28.20        | 33        |
| 2.1.5 Brain gain.....                          | 15.93        | 118       |
| 2.2 Internal Openness.....                     | 45.45        | 81        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 38.82        | 66        |
| 2.2.2 Tolerance of immigrants.....             | 8.11         | 118       |
| 2.2.3 Social mobility.....                     | 51.24        | 59        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 86.94        | 17        |
| 2.2.5 Gender earnings gap.....                 | 52.57        | 63        |
| 2.2.6 Leadership opportunities for women.....  | 35.04        | 76        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>32,110.49</b> |
| GDP (US\$ billions).....               | <b>95.77</b>     |
| GTCI score.....                        | <b>48.37</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>43.30</b> | <b>40</b> |
| 3.1 Formal Education.....                       | 42.83        | 36        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 66.47        | 16        |
| 3.1.2 Tertiary enrolment.....                   | 42.86        | 48        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 32.59        | 24        |
| 3.1.4 Reading, maths, and science.....          | 58.24        | 38        |
| 3.1.5 University ranking.....                   | 13.97        | 64        |
| 3.2 Lifelong Learning.....                      | 40.66        | 65        |
| 3.2.1 Quality of management schools.....        | 27.17        | 99        |
| 3.2.2 Prevalence of training in firms.....      | 52.90        | 25        |
| 3.2.3 Employee development.....                 | 41.91        | 60        |
| 3.3 Access to Growth Opportunities.....         | 46.40        | 46        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 49.57        | 54        |
| 3.3.2 Personal rights.....                      | 76.52        | 35        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 67.47        | 77        |
| 3.3.4 Use of virtual professional networks..... | 15.32        | 63        |
| 3.3.5 Collaboration within organisations.....   | 31.31        | 74        |
| 3.3.6 Collaboration across organisations.....   | 38.20        | 47        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>62.87</b> | <b>35</b> |
| 4.1 Sustainability.....              | 46.36        | 53        |
| 4.1.1 Pension system.....            | 78.57        | 30        |
| 4.1.2 Social protection.....         | 41.61        | 57        |
| 4.1.3 Brain retention.....           | 18.90        | 115       |
| 4.2 Lifestyle.....                   | 79.39        | 18        |
| 4.2.1 Environmental performance..... | 71.96        | 27        |
| 4.2.2 Personal safety.....           | 91.63        | 20        |
| 4.2.3 Physician density.....         | 55.03        | 23        |
| 4.2.4 Sanitation.....                | 98.92        | 21        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>50.20</b> | <b>39</b> |
| 5.1 Mid-Level Skills.....                               | 74.69        | 2         |
| 5.1.1 Workforce with secondary education.....           | 96.86        | 2         |
| 5.1.2 Population with secondary education.....          | 94.15        | 2         |
| 5.1.3 Technicians and associate professionals.....      | 66.52        | 18        |
| 5.1.4 Labour productivity per employee.....             | 41.23        | 32        |
| 5.2 Employability.....                                  | 25.72        | 106       |
| 5.2.1 Ease of finding skilled employees.....            | 23.34        | 115       |
| 5.2.2 Relevance of education system to the economy..... | 13.54        | 111       |
| 5.2.3 Skills matching with secondary education.....     | 38.83        | 73        |
| 5.2.4 Skills matching with tertiary education.....      | 27.18        | 108       |

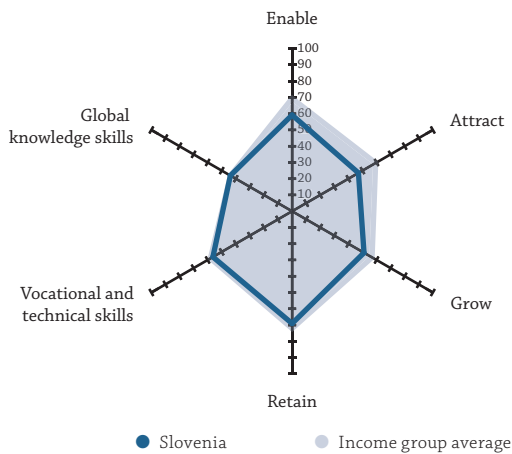
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|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>32.38</b> | <b>42</b> |
| 6.1 High-Level Skills.....                          | 29.94        | 60        |
| 6.1.1 Workforce with tertiary education.....        | 34.14        | 58        |
| 6.1.2 Population with tertiary education.....       | 30.90        | 52        |
| 6.1.3 Professionals.....                            | 33.15        | 51        |
| 6.1.4 Researchers.....                              | 31.44        | 32        |
| 6.1.5 Senior officials and managers.....            | 25.00        | 54        |
| 6.1.6 Availability of scientists and engineers..... | 25.00        | 101       |
| 6.2 Talent Impact.....                              | 34.82        | 32        |
| 6.2.1 Innovation output.....                        | 48.15        | 35        |
| 6.2.2 High-value exports.....                       | 17.83        | 46        |
| 6.2.3 New product entrepreneurial activity.....     | 46.09        | 27        |
| 6.2.4 New business density.....                     | 22.60        | 27        |
| 6.2.5 Scientific journal articles.....              | 39.45        | 29        |

# SLOVENIA

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>29</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>2.07</b>        |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....59.20</b>                      | <b>38</b> |      |
| 1.1 Regulatory Landscape.....                  | 63.45     | 39   |
| 1.1.1 Government effectiveness.....            | 72.95     | 24   |
| 1.1.2 Business-government relations.....       | 32.01     | 116  |
| 1.1.3 Political stability.....                 | 87.50     | 15   |
| 1.1.4 Regulatory quality.....                  | 63.16     | 41   |
| 1.1.5 Corruption.....                          | 61.64     | 30   |
| 1.2 Market Landscape.....                      | 63.49     | 32   |
| 1.2.1 Competition intensity.....               | 76.42     | 35   |
| 1.2.2 Ease of doing business.....              | 80.01     | 34   |
| 1.2.3 Cluster development.....                 | 35.65     | 71   |
| 1.2.4 R&D expenditure.....                     | 46.91     | 18   |
| 1.2.5 ICT infrastructure.....                  | 79.26     | 27   |
| 1.2.6 Technology utilisation.....              | 62.69     | 43   |
| 1.3 Business and Labour Landscape.....         | 50.66     | 68   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 22.33     | 112  |
| 1.3.2 Ease of redundancy.....                  | 87.50     | 34   |
| 1.3.3 Active labour market policies.....       | 61.59     | 34   |
| 1.3.4 Labour-employer cooperation.....         | 42.85     | 58   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 46.54     | 65   |
| 1.3.6 Relationship of pay to productivity..... | 43.18     | 73   |
| <b>2 ATTRACT.....47.14</b>                     | <b>47</b> |      |
| 2.1 External Openness.....                     | 31.70     | 84   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 51.20     | 77   |
| 2.1.2 Prevalence of foreign ownership.....     | 43.68     | 96   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 24.20     | 33   |
| 2.1.4 International students.....              | 13.74     | 60   |
| 2.1.5 Brain gain.....                          | 25.67     | 104  |
| 2.2 Internal Openness.....                     | 62.58     | 29   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 65.88     | 25   |
| 2.2.2 Tolerance of immigrants.....             | 28.38     | 104  |
| 2.2.3 Social mobility.....                     | 59.71     | 33   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 82.94     | 27   |
| 2.2.5 Gender earnings gap.....                 | 76.70     | 10   |
| 2.2.6 Leadership opportunities for women.....  | 61.86     | 28   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>34,801.63</b> |
| GDP (US\$ billions).....               | <b>48.77</b>     |
| GTCI score.....                        | <b>54.44</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....51.10</b>                         | <b>34</b> |      |
| 3.1 Formal Education.....                       | 54.58     | 14   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 87.19     | 3    |
| 3.1.2 Tertiary enrolment.....                   | 65.47     | 17   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 24.16     | 54   |
| 3.1.4 Reading, maths, and science.....          | 80.11     | 8    |
| 3.1.5 University ranking.....                   | 15.95     | 59   |
| 3.2 Lifelong Learning.....                      | 47.66     | 45   |
| 3.2.1 Quality of management schools.....        | 46.33     | 50   |
| 3.2.2 Prevalence of training in firms.....      | 50.26     | 29   |
| 3.2.3 Employee development.....                 | 46.37     | 47   |
| 3.3 Access to Growth Opportunities.....         | 51.06     | 37   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 49.13     | 55   |
| 3.3.2 Personal rights.....                      | 78.21     | 32   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 76.69     | 46   |
| 3.3.4 Use of virtual professional networks..... | 28.18     | 33   |
| 3.3.5 Collaboration within organisations.....   | 43.00     | 41   |
| 3.3.6 Collaboration across organisations.....   | 31.16     | 67   |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....69.08</b>            | <b>27</b> |    |
| 4.1 Sustainability.....              | 60.96     | 32 |
| 4.1.1 Pension system.....            | 86.73     | 23 |
| 4.1.2 Social protection.....         | 61.83     | 29 |
| 4.1.3 Brain retention.....           | 34.30     | 87 |
| 4.2 Lifestyle.....                   | 77.20     | 27 |
| 4.2.1 Environmental performance..... | 66.91     | 33 |
| 4.2.2 Personal safety.....           | 98.04     | 10 |
| 4.2.3 Physician density.....         | 44.93     | 41 |
| 4.2.4 Sanitation.....                | 98.92     | 21 |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....56.25</b>      | <b>29</b> |    |
| 5.1 Mid-Level Skills.....                               | 63.19     | 15 |
| 5.1.1 Workforce with secondary education.....           | 75.74     | 16 |
| 5.1.2 Population with secondary education.....          | 78.74     | 6  |
| 5.1.3 Technicians and associate professionals.....      | 59.38     | 25 |
| 5.1.4 Labour productivity per employee.....             | 38.92     | 37 |
| 5.2 Employability.....                                  | 49.31     | 47 |
| 5.2.1 Ease of finding skilled employees.....            | 55.68     | 49 |
| 5.2.2 Relevance of education system to the economy..... | 45.67     | 49 |
| 5.2.3 Skills matching with secondary education.....     | 55.47     | 37 |
| 5.2.4 Skills matching with tertiary education.....      | 40.40     | 78 |

|                                                     |           |    |
|-----------------------------------------------------|-----------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....43.86</b>          | <b>24</b> |    |
| 6.1 High-Level Skills.....                          | 47.28     | 28 |
| 6.1.1 Workforce with tertiary education.....        | 51.64     | 28 |
| 6.1.2 Population with tertiary education.....       | 42.61     | 32 |
| 6.1.3 Professionals.....                            | 60.11     | 15 |
| 6.1.4 Researchers.....                              | 47.21     | 24 |
| 6.1.5 Senior officials and managers.....            | 43.45     | 25 |
| 6.1.6 Availability of scientists and engineers..... | 38.64     | 67 |
| 6.2 Talent Impact.....                              | 40.44     | 26 |
| 6.2.1 Innovation output.....                        | 53.89     | 28 |
| 6.2.2 High-value exports.....                       | 11.50     | 63 |
| 6.2.3 New product entrepreneurial activity.....     | 55.75     | 14 |
| 6.2.4 New business density.....                     | 15.04     | 38 |
| 6.2.5 Scientific journal articles.....              | 66.04     | 10 |

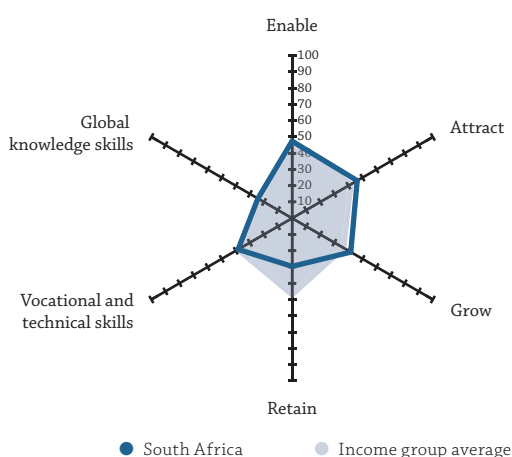


# SOUTH AFRICA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>71</b>                  |
| Income group.....          | <b>Upper-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>56.72</b>               |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....47.43</b>                      | <b>71</b> |      |
| 1.1 Regulatory Landscape.....                  | 48.12     | 67   |
| 1.1.1 Government effectiveness.....            | 51.86     | 52   |
| 1.1.2 Business-government relations.....       | 37.31     | 105  |
| 1.1.3 Political stability.....                 | 61.57     | 69   |
| 1.1.4 Regulatory quality.....                  | 52.87     | 57   |
| 1.1.5 Corruption.....                          | 36.99     | 57   |
| 1.2 Market Landscape.....                      | 55.39     | 43   |
| 1.2.1 Competition intensity.....               | 75.15     | 41   |
| 1.2.2 Ease of doing business.....              | 61.10     | 74   |
| 1.2.3 Cluster development.....                 | 61.75     | 27   |
| 1.2.4 R&D expenditure.....                     | 18.50     | 42   |
| 1.2.5 ICT infrastructure.....                  | 48.35     | 73   |
| 1.2.6 Technology utilisation.....              | 67.49     | 36   |
| 1.3 Business and Labour Landscape.....         | 38.78     | 103  |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 55.67     | 76   |
| 1.3.2 Ease of redundancy.....                  | 62.50     | 64   |
| 1.3.3 Active labour market policies.....       | 23.78     | 104  |
| 1.3.4 Labour-employer cooperation.....         | 0.00      | 125  |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 55.68     | 40   |
| 1.3.6 Relationship of pay to productivity..... | 35.08     | 94   |
| <b>2 ATTRACT.....46.24</b>                     | <b>52</b> |      |
| 2.1 External Openness.....                     | 40.92     | 56   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 58.84     | 56   |
| 2.1.2 Prevalence of foreign ownership.....     | 68.25     | 44   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 14.58     | 48   |
| 2.1.4 International students.....              | 20.66     | 46   |
| 2.1.5 Brain gain.....                          | 42.25     | 63   |
| 2.2 Internal Openness.....                     | 51.56     | 55   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 41.18     | 65   |
| 2.2.2 Tolerance of immigrants.....             | 63.51     | 51   |
| 2.2.3 Social mobility.....                     | 41.48     | 85   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 81.46     | 32   |
| 2.2.5 Gender earnings gap.....                 | 51.85     | 66   |
| 2.2.6 Leadership opportunities for women.....  | 29.86     | 86   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>13,497.99</b> |
| GDP (US\$ billions).....               | <b>349.42</b>    |
| GTCI score.....                        | <b>37.94</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....41.69</b>                         | <b>45</b> |      |
| 3.1 Formal Education.....                       | 20.24     | 77   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 14.74     | 79   |
| 3.1.2 Tertiary enrolment.....                   | 15.70     | 87   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | 16.58     | 76   |
| 3.1.4 Reading, maths, and science.....          | n/a       | n/a  |
| 3.1.5 University ranking.....                   | 33.93     | 32   |
| 3.2 Lifelong Learning.....                      | 48.85     | 42   |
| 3.2.1 Quality of management schools.....        | 49.96     | 42   |
| 3.2.2 Prevalence of training in firms.....      | 44.06     | 36   |
| 3.2.3 Employee development.....                 | 52.52     | 36   |
| 3.3 Access to Growth Opportunities.....         | 55.98     | 33   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 65.72     | 24   |
| 3.3.2 Personal rights.....                      | 71.96     | 40   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 79.03     | 40   |
| 3.3.4 Use of virtual professional networks..... | 26.57     | 36   |
| 3.3.5 Collaboration within organisations.....   | 47.96     | 38   |
| 3.3.6 Collaboration across organisations.....   | 44.65     | 33   |

|                                      |            |     |
|--------------------------------------|------------|-----|
| <b>4 RETAIN.....29.63</b>            | <b>102</b> |     |
| 4.1 Sustainability.....              | 25.74      | 103 |
| 4.1.1 Pension system.....            | 4.08       | 98  |
| 4.1.2 Social protection.....         | 35.74      | 71  |
| 4.1.3 Brain retention.....           | 37.40      | 75  |
| 4.2 Lifestyle.....                   | 33.53      | 99  |
| 4.2.1 Environmental performance..... | 28.84      | 106 |
| 4.2.2 Personal safety.....           | 21.48      | 116 |
| 4.2.3 Physician density.....         | 12.83      | 91  |
| 4.2.4 Sanitation.....                | 70.97      | 92  |

|                                                         |           |     |
|---------------------------------------------------------|-----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....38.34</b>      | <b>68</b> |     |
| 5.1 Mid-Level Skills.....                               | 44.92     | 51  |
| 5.1.1 Workforce with secondary education.....           | 40.63     | 67  |
| 5.1.2 Population with secondary education.....          | 69.04     | 16  |
| 5.1.3 Technicians and associate professionals.....      | 46.88     | 47  |
| 5.1.4 Labour productivity per employee.....             | 23.14     | 59  |
| 5.2 Employability.....                                  | 37.06     | 90  |
| 5.2.1 Ease of finding skilled employees.....            | 31.71     | 84  |
| 5.2.2 Relevance of education system to the economy..... | 14.30     | 107 |
| 5.2.3 Skills matching with secondary education.....     | 31.18     | 94  |
| 5.2.4 Skills matching with tertiary education.....      | 44.56     | 70  |

|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....24.30</b>          | <b>64</b> |     |
| 6.1 High-Level Skills.....                          | 20.06     | 82  |
| 6.1.1 Workforce with tertiary education.....        | 23.89     | 79  |
| 6.1.2 Population with tertiary education.....       | 11.21     | 91  |
| 6.1.3 Professionals.....                            | 10.11     | 103 |
| 6.1.4 Researchers.....                              | 5.65      | 65  |
| 6.1.5 Senior officials and managers.....            | 42.26     | 26  |
| 6.1.6 Availability of scientists and engineers..... | 27.22     | 96  |
| 6.2 Talent Impact.....                              | 28.55     | 42  |
| 6.2.1 Innovation output.....                        | 28.68     | 64  |
| 6.2.2 High-value exports.....                       | 9.60      | 69  |
| 6.2.3 New product entrepreneurial activity.....     | 46.90     | 21  |
| 6.2.4 New business density.....                     | 49.20     | 11  |
| 6.2.5 Scientific journal articles.....              | 8.36      | 56  |

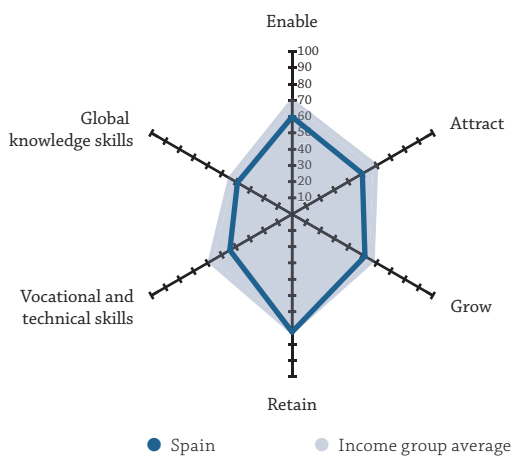


# SPAIN

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>31</b>          |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>46.57</b>       |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....59.91 37</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 67.86 | 30   |
| 1.1.1 Government effectiveness.....            | 72.95 | 24   |
| 1.1.2 Business-government relations.....       | 62.25 | 46   |
| 1.1.3 Political stability.....                 | 75.93 | 40   |
| 1.1.4 Regulatory quality.....                  | 72.01 | 30   |
| 1.1.5 Corruption.....                          | 56.16 | 36   |
| 1.2 Market Landscape.....                      | 63.77 | 31   |
| 1.2.1 Competition intensity.....               | 80.53 | 20   |
| 1.2.2 Ease of doing business.....              | 82.88 | 25   |
| 1.2.3 Cluster development.....                 | 55.65 | 34   |
| 1.2.4 R&D expenditure.....                     | 27.63 | 31   |
| 1.2.5 ICT infrastructure.....                  | 80.15 | 25   |
| 1.2.6 Technology utilisation.....              | 55.78 | 51   |
| 1.3 Business and Labour Landscape.....         | 48.10 | 76   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 39.00 | 105  |
| 1.3.2 Ease of redundancy.....                  | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 44.00 | 57   |
| 1.3.4 Labour-employer cooperation.....         | 38.42 | 72   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 56.66 | 35   |
| 1.3.6 Relationship of pay to productivity..... | 35.49 | 92   |
| <b>2 ATTRACT.....49.93 39</b>                  |       |      |
| 2.1 External Openness.....                     | 45.12 | 39   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 70.41 | 30   |
| 2.1.2 Prevalence of foreign ownership.....     | 75.45 | 28   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 26.39 | 29   |
| 2.1.4 International students.....              | 13.55 | 61   |
| 2.1.5 Brain gain.....                          | 39.79 | 71   |
| 2.2 Internal Openness.....                     | 54.75 | 44   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 45.88 | 54   |
| 2.2.2 Tolerance of immigrants.....             | 86.49 | 11   |
| 2.2.3 Social mobility.....                     | 53.47 | 52   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 70.02 | 67   |
| 2.2.5 Gender earnings gap.....                 | 56.03 | 50   |
| 2.2.6 Leadership opportunities for women.....  | 16.60 | 112  |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>38,090.94</b> |
| GDP (US\$ billions).....               | <b>1,311.32</b>  |
| GTCI score.....                        | <b>52.85</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....51.76 32</b>                      |       |      |
| 3.1 Formal Education.....                       | 50.87 | 23   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 38.47 | 40   |
| 3.1.2 Tertiary enrolment.....                   | 74.66 | 5    |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 22.11 | 60   |
| 3.1.4 Reading, maths, and science.....          | 71.67 | 26   |
| 3.1.5 University ranking.....                   | 47.46 | 22   |
| 3.2 Lifelong Learning.....                      | 54.92 | 33   |
| 3.2.1 Quality of management schools.....        | 78.23 | 12   |
| 3.2.2 Prevalence of training in firms.....      | n/a   | n/a  |
| 3.2.3 Employee development.....                 | 31.60 | 79   |
| 3.3 Access to Growth Opportunities.....         | 49.49 | 38   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 49.10 | 56   |
| 3.3.2 Personal rights.....                      | 84.01 | 28   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 75.37 | 51   |
| 3.3.4 Use of virtual professional networks..... | 41.54 | 24   |
| 3.3.5 Collaboration within organisations.....   | 18.85 | 107  |
| 3.3.6 Collaboration across organisations.....   | 28.06 | 73   |

|                                      |        |    |
|--------------------------------------|--------|----|
| <b>4 RETAIN.....72.43 25</b>         |        |    |
| 4.1 Sustainability.....              | 62.47  | 28 |
| 4.1.1 Pension system.....            | 68.37  | 35 |
| 4.1.2 Social protection.....         | 81.32  | 15 |
| 4.1.3 Brain retention.....           | 37.72  | 74 |
| 4.2 Lifestyle.....                   | 82.38  | 12 |
| 4.2.1 Environmental performance..... | 84.95  | 12 |
| 4.2.2 Personal safety.....           | 82.79  | 30 |
| 4.2.3 Physician density.....         | 61.79  | 16 |
| 4.2.4 Sanitation.....                | 100.00 | 1  |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....44.23 48</b>   |       |    |
| 5.1 Mid-Level Skills.....                               | 38.89 | 64 |
| 5.1.1 Workforce with secondary education.....           | 30.40 | 79 |
| 5.1.2 Population with secondary education.....          | 26.39 | 70 |
| 5.1.3 Technicians and associate professionals.....      | 49.11 | 43 |
| 5.1.4 Labour productivity per employee.....             | 49.65 | 22 |
| 5.2 Employability.....                                  | 49.57 | 45 |
| 5.2.1 Ease of finding skilled employees.....            | 61.84 | 38 |
| 5.2.2 Relevance of education system to the economy..... | 36.51 | 62 |
| 5.2.3 Skills matching with secondary education.....     | 48.44 | 46 |
| 5.2.4 Skills matching with tertiary education.....      | 51.49 | 52 |

|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....38.84 30</b>       |       |    |
| 6.1 High-Level Skills.....                          | 44.47 | 30 |
| 6.1.1 Workforce with tertiary education.....        | 59.68 | 18 |
| 6.1.2 Population with tertiary education.....       | 47.88 | 29 |
| 6.1.3 Professionals.....                            | 48.60 | 28 |
| 6.1.4 Researchers.....                              | 33.06 | 29 |
| 6.1.5 Senior officials and managers.....            | 23.21 | 58 |
| 6.1.6 Availability of scientists and engineers..... | 54.41 | 38 |
| 6.2 Talent Impact.....                              | 33.21 | 35 |
| 6.2.1 Innovation output.....                        | 54.53 | 26 |
| 6.2.2 High-value exports.....                       | 12.66 | 62 |
| 6.2.3 New product entrepreneurial activity.....     | 37.91 | 44 |
| 6.2.4 New business density.....                     | 15.52 | 37 |
| 6.2.5 Scientific journal articles.....              | 45.43 | 25 |

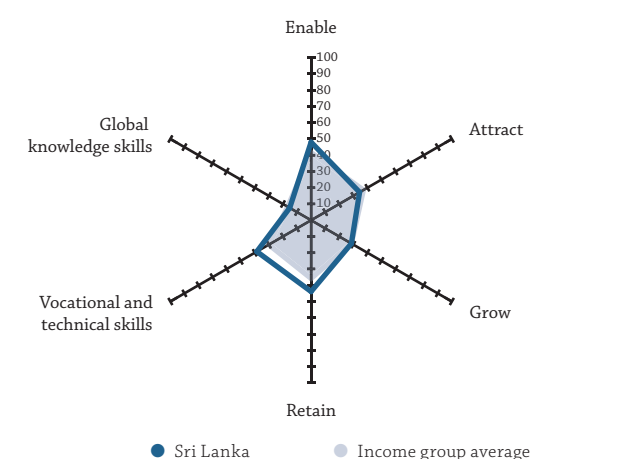
# SRI LANKA

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>82</b>                        |
| Income group.....          | <b>Lower-middle income</b>       |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>21.44</b>                     |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>12,810.95</b> |
| GDP (US\$ billions).....               | <b>87.17</b>     |
| GTCI score.....                        | <b>34.79</b>     |
| GTCI score (income group average)..... | <b>31.64</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE..... 48.03 68</b>                  |        |      |
| 1.1 Regulatory Landscape.....                  | 50.39  | 58   |
| 1.1.1 Government effectiveness.....            | 39.95  | 83   |
| 1.1.2 Business-government relations.....       | 70.20  | 29   |
| 1.1.3 Political stability.....                 | 66.20  | 60   |
| 1.1.4 Regulatory quality.....                  | 45.45  | 72   |
| 1.1.5 Corruption.....                          | 30.14  | 70   |
| 1.2 Market Landscape.....                      | 39.88  | 87   |
| 1.2.1 Competition intensity.....               | 59.60  | 81   |
| 1.2.2 Ease of doing business.....              | 50.27  | 93   |
| 1.2.3 Cluster development.....                 | 43.75  | 51   |
| 1.2.4 R&D expenditure.....                     | 2.00   | 103  |
| 1.2.5 ICT infrastructure.....                  | 37.91  | 89   |
| 1.2.6 Technology utilisation.....              | 45.73  | 73   |
| 1.3 Business and Labour Landscape.....         | 53.83  | 57   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 37.50  | 104  |
| 1.3.3 Active labour market policies.....       | 39.98  | 66   |
| 1.3.4 Labour-employer cooperation.....         | 39.43  | 67   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 52.46  | 54   |
| 1.3.6 Relationship of pay to productivity..... | 53.64  | 56   |
| <b>2 ATTRACT..... 34.46 104</b>                |        |      |
| 2.1 External Openness.....                     | 26.78  | 104  |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 45.77  | 93   |
| 2.1.2 Prevalence of foreign ownership.....     | 49.89  | 90   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 0.25   | 121  |
| 2.1.4 International students.....              | 2.06   | 85   |
| 2.1.5 Brain gain.....                          | 35.95  | 83   |
| 2.2 Internal Openness.....                     | 42.13  | 97   |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 7.06   | 118  |
| 2.2.2 Tolerance of immigrants.....             | 51.35  | 74   |
| 2.2.3 Social mobility.....                     | 49.54  | 63   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 86.08  | 20   |
| 2.2.5 Gender earnings gap.....                 | 22.22  | 109  |
| 2.2.6 Leadership opportunities for women.....  | 36.54  | 74   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 28.63 90</b>                     |       |      |
| 3.1 Formal Education.....                       | 10.60 | 109  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 8.74  | 91   |
| 3.1.2 Tertiary enrolment.....                   | 14.93 | 89   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 8.91  | 92   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 9.79  | 75   |
| 3.2 Lifelong Learning.....                      | 37.57 | 71   |
| 3.2.1 Quality of management schools.....        | 48.80 | 46   |
| 3.2.2 Prevalence of training in firms.....      | 19.79 | 76   |
| 3.2.3 Employee development.....                 | 44.12 | 53   |
| 3.3 Access to Growth Opportunities.....         | 37.73 | 76   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 49.91 | 51   |
| 3.3.2 Personal rights.....                      | 46.43 | 77   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 59.61 | 91   |
| 3.3.4 Use of virtual professional networks..... | 8.06  | 78   |
| 3.3.5 Collaboration within organisations.....   | 30.69 | 77   |
| 3.3.6 Collaboration across organisations.....   | 31.69 | 66   |

|                                      |       |    |
|--------------------------------------|-------|----|
| <b>4 RETAIN..... 43.88 73</b>        |       |    |
| 4.1 Sustainability.....              | 32.33 | 80 |
| 4.1.1 Pension system.....            | 22.45 | 72 |
| 4.1.2 Social protection.....         | 33.12 | 77 |
| 4.1.3 Brain retention.....           | 41.42 | 64 |
| 4.2 Lifestyle.....                   | 55.44 | 71 |
| 4.2.1 Environmental performance..... | 55.31 | 62 |
| 4.2.2 Personal safety.....           | 59.05 | 72 |
| 4.2.3 Physician density.....         | 13.84 | 89 |
| 4.2.4 Sanitation.....                | 93.55 | 60 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 38.56 65</b>  |       |    |
| 5.1 Mid-Level Skills.....                               | 31.70 | 76 |
| 5.1.1 Workforce with secondary education.....           | 20.03 | 95 |
| 5.1.2 Population with secondary education.....          | 63.20 | 22 |
| 5.1.3 Technicians and associate professionals.....      | 25.45 | 78 |
| 5.1.4 Labour productivity per employee.....             | 18.15 | 66 |
| 5.2 Employability.....                                  | 45.41 | 58 |
| 5.2.1 Ease of finding skilled employees.....            | 49.36 | 62 |
| 5.2.2 Relevance of education system to the economy..... | 38.44 | 56 |
| 5.2.3 Skills matching with secondary education.....     | 52.99 | 38 |
| 5.2.4 Skills matching with tertiary education.....      | 40.85 | 76 |

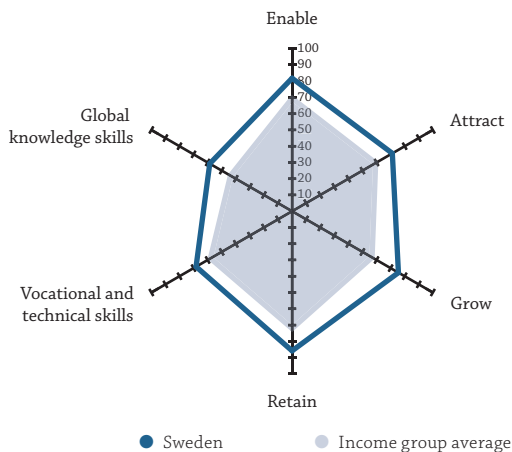
|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 15.19 88</b>      |       |     |
| 6.1 High-Level Skills.....                          | 23.37 | 78  |
| 6.1.1 Workforce with tertiary education.....        | 29.38 | 64  |
| 6.1.2 Population with tertiary education.....       | 22.07 | 68  |
| 6.1.3 Professionals.....                            | 16.29 | 86  |
| 6.1.4 Researchers.....                              | 1.12  | 83  |
| 6.1.5 Senior officials and managers.....            | 25.60 | 53  |
| 6.1.6 Availability of scientists and engineers..... | 45.74 | 52  |
| 6.2 Talent Impact.....                              | 7.01  | 108 |
| 6.2.1 Innovation output.....                        | 22.22 | 78  |
| 6.2.2 High-value exports.....                       | 1.52  | 108 |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 2.41  | 83  |
| 6.2.5 Scientific journal articles.....              | 1.89  | 83  |

# SWEDEN

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>7</b>           |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>10.07</b>       |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....81.83 10</b>                   |        |      |
| 1.1 Regulatory Landscape.....                  | 88.09  | 9    |
| 1.1.1 Government effectiveness.....            | 89.58  | 10   |
| 1.1.2 Business-government relations.....       | 78.37  | 19   |
| 1.1.3 Political stability.....                 | 87.27  | 18   |
| 1.1.4 Regulatory quality.....                  | 92.11  | 6    |
| 1.1.5 Corruption.....                          | 93.15  | 6    |
| 1.2 Market Landscape.....                      | 85.47  | 4    |
| 1.2.1 Competition intensity.....               | 79.37  | 22   |
| 1.2.2 Ease of doing business.....              | 90.52  | 9    |
| 1.2.3 Cluster development.....                 | 79.05  | 14   |
| 1.2.4 R&D expenditure.....                     | 76.48  | 4    |
| 1.2.5 ICT infrastructure.....                  | 87.40  | 12   |
| 1.2.6 Technology utilisation.....              | 100.00 | 1    |
| 1.3 Business and Labour Landscape.....         | 71.92  | 22   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 66.67  | 58   |
| 1.3.2 Ease of redundancy.....                  | 50.00  | 85   |
| 1.3.3 Active labour market policies.....       | 72.55  | 21   |
| 1.3.4 Labour-employer cooperation.....         | 83.76  | 8    |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 93.33  | 7    |
| 1.3.6 Relationship of pay to productivity..... | 65.20  | 32   |
| <b>2 ATTRACT.....71.22 10</b>                  |        |      |
| 2.1 External Openness.....                     | 58.38  | 20   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 79.26  | 13   |
| 2.1.2 Prevalence of foreign ownership.....     | 82.87  | 15   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 36.33  | 19   |
| 2.1.4 International students.....              | 31.27  | 30   |
| 2.1.5 Brain gain.....                          | 62.16  | 25   |
| 2.2 Internal Openness.....                     | 84.05  | 4    |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 95.29  | 3    |
| 2.2.2 Tolerance of immigrants.....             | 85.14  | 12   |
| 2.2.3 Social mobility.....                     | 76.79  | 21   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | 85.08  | 23   |
| 2.2.5 Gender earnings gap.....                 | 74.31  | 12   |
| 2.2.6 Leadership opportunities for women.....  | 87.70  | 6    |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>50,069.65</b> |
| GDP (US\$ billions).....               | <b>538.04</b>    |
| GTCI score.....                        | <b>73.53</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....75.55 7</b>                       |       |      |
| 3.1 Formal Education.....                       | 55.85 | 13   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 48.96 | 27   |
| 3.1.2 Tertiary enrolment.....                   | 50.80 | 37   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 46.07 | 8    |
| 3.1.4 Reading, maths, and science.....          | 73.76 | 22   |
| 3.1.5 University ranking.....                   | 59.64 | 13   |
| 3.2 Lifelong Learning.....                      | 82.33 | 7    |
| 3.2.1 Quality of management schools.....        | 71.78 | 21   |
| 3.2.2 Prevalence of training in firms.....      | 88.26 | 3    |
| 3.2.3 Employee development.....                 | 86.94 | 8    |
| 3.3 Access to Growth Opportunities.....         | 88.47 | 3    |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 99.31 | 2    |
| 3.3.2 Personal rights.....                      | 94.70 | 8    |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 96.31 | 5    |
| 3.3.4 Use of virtual professional networks..... | 60.60 | 15   |
| 3.3.5 Collaboration within organisations.....   | 97.83 | 2    |
| 3.3.6 Collaboration across organisations.....   | 82.04 | 8    |

|                                      |        |    |
|--------------------------------------|--------|----|
| <b>4 RETAIN.....85.89 6</b>          |        |    |
| 4.1 Sustainability.....              | 83.21  | 10 |
| 4.1.1 Pension system.....            | 88.78  | 21 |
| 4.1.2 Social protection.....         | 84.41  | 11 |
| 4.1.3 Brain retention.....           | 76.44  | 16 |
| 4.2 Lifestyle.....                   | 88.57  | 3  |
| 4.2.1 Environmental performance..... | 88.48  | 5  |
| 4.2.2 Personal safety.....           | 100.00 | 1  |
| 4.2.3 Physician density.....         | 66.86  | 9  |
| 4.2.4 Sanitation.....                | 98.92  | 21 |

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....68.22 11</b>   |       |    |
| 5.1 Mid-Level Skills.....                               | 62.86 | 16 |
| 5.1.1 Workforce with secondary education.....           | 59.72 | 33 |
| 5.1.2 Population with secondary education.....          | 52.92 | 32 |
| 5.1.3 Technicians and associate professionals.....      | 81.70 | 9  |
| 5.1.4 Labour productivity per employee.....             | 57.09 | 11 |
| 5.2 Employability.....                                  | 73.59 | 18 |
| 5.2.1 Ease of finding skilled employees.....            | 74.97 | 19 |
| 5.2.2 Relevance of education system to the economy..... | 63.84 | 20 |
| 5.2.3 Skills matching with secondary education.....     | 74.91 | 10 |
| 5.2.4 Skills matching with tertiary education.....      | 80.64 | 15 |

|                                                     |       |    |
|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....58.51 10</b>       |       |    |
| 6.1 High-Level Skills.....                          | 62.47 | 9  |
| 6.1.1 Workforce with tertiary education.....        | 60.97 | 17 |
| 6.1.2 Population with tertiary education.....       | 50.93 | 21 |
| 6.1.3 Professionals.....                            | 76.40 | 2  |
| 6.1.4 Researchers.....                              | 86.69 | 3  |
| 6.1.5 Senior officials and managers.....            | 34.52 | 37 |
| 6.1.6 Availability of scientists and engineers..... | 65.30 | 20 |
| 6.2 Talent Impact.....                              | 54.54 | 11 |
| 6.2.1 Innovation output.....                        | 82.80 | 3  |
| 6.2.2 High-value exports.....                       | 25.92 | 31 |
| 6.2.3 New product entrepreneurial activity.....     | 45.72 | 28 |
| 6.2.4 New business density.....                     | 38.94 | 18 |
| 6.2.5 Scientific journal articles.....              | 79.34 | 6  |

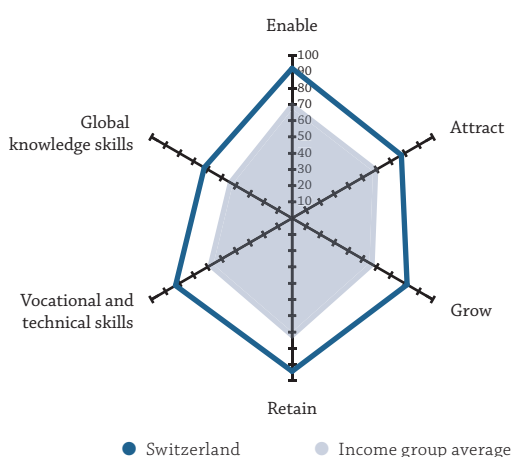
# SWITZERLAND

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>1</b>           |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>8.47</b>        |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>65,006.53</b> |
| GDP (US\$ billions) .....               | <b>678.89</b>    |
| GTCI score.....                         | <b>81.82</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score    | Rank |
|------------------------------------------------|----------|------|
| <b>1 ENABLE.....92.21</b>                      | <b>2</b> |      |
| 1.1 Regulatory Landscape.....                  | 93.05    | 3    |
| 1.1.1 Government effectiveness .....           | 95.53    | 2    |
| 1.1.2 Business-government relations .....      | 86.53    | 11   |
| 1.1.3 Political stability .....                | 95.14    | 5    |
| 1.1.4 Regulatory quality.....                  | 93.54    | 4    |
| 1.1.5 Corruption .....                         | 94.52    | 3    |
| 1.2 Market Landscape.....                      | 84.49    | 6    |
| 1.2.1 Competition intensity .....              | 78.52    | 26   |
| 1.2.2 Ease of doing business .....             | 80.91    | 30   |
| 1.2.3 Cluster development .....                | 81.43    | 10   |
| 1.2.4 R&D expenditure .....                    | 79.30    | 3    |
| 1.2.5 ICT infrastructure.....                  | 91.22    | 6    |
| 1.2.6 Technology utilisation.....              | 95.58    | 4    |
| 1.3 Business and Labour Landscape.....         | 99.07    | 1    |
| Labour Market                                  |          |      |
| 1.3.1 Ease of hiring .....                     | 100.00   | 1    |
| 1.3.2 Ease of redundancy .....                 | 100.00   | 1    |
| 1.3.3 Active labour market policies.....       | 100.00   | 1    |
| 1.3.4 Labour-employer cooperation .....        | 100.00   | 1    |
| Management Practice                            |          |      |
| 1.3.5 Professional management.....             | 94.44    | 5    |
| 1.3.6 Relationship of pay to productivity..... | 100.00   | 1    |
| <b>2 ATTRACT.....77.64</b>                     | <b>5</b> |      |
| 2.1 External Openness .....                    | 83.90    | 4    |
| Attract Business                               |          |      |
| 2.1.1 FDI and technology transfer.....         | 82.36    | 11   |
| 2.1.2 Prevalence of foreign ownership .....    | 87.46    | 9    |
| Attract People                                 |          |      |
| 2.1.3 Migrant stock.....                       | 61.02    | 11   |
| 2.1.4 International students.....              | 88.64    | 7    |
| 2.1.5 Brain gain.....                          | 100.00   | 1    |
| 2.2 Internal Openness.....                     | 71.39    | 14   |
| Social Inclusion                               |          |      |
| 2.2.1 Tolerance of minorities .....            | 70.59    | 14   |
| 2.2.2 Tolerance of immigrants.....             | 71.62    | 34   |
| 2.2.3 Social mobility.....                     | 100.00   | 1    |
| Gender Equality                                |          |      |
| 2.2.4 Female graduates .....                   | 51.22    | 85   |
| 2.2.5 Gender earnings gap.....                 | 64.28    | 27   |
| 2.2.6 Leadership opportunities for women.....  | 70.65    | 20   |

|                                                 | Score    | Rank |
|-------------------------------------------------|----------|------|
| <b>3 GROW.....81.73</b>                         | <b>2</b> |      |
| 3.1 Formal Education.....                       | 63.51    | 6    |
| Enrolment                                       |          |      |
| 3.1.1 Vocational enrolment .....                | 78.21    | 8    |
| 3.1.2 Tertiary enrolment.....                   | 47.15    | 42   |
| Quality                                         |          |      |
| 3.1.3 Tertiary education expenditure.....       | 31.16    | 27   |
| 3.1.4 Reading, maths, and science .....         | 78.69    | 12   |
| 3.1.5 University ranking .....                  | 82.36    | 4    |
| 3.2 Lifelong Learning.....                      | 100.00   | 1    |
| 3.2.1 Quality of management schools.....        | 100.00   | 1    |
| 3.2.2 Prevalence of training in firms.....      | n/a      | n/a  |
| 3.2.3 Employee development.....                 | 100.00   | 1    |
| 3.3 Access to Growth Opportunities .....        | 81.66    | 10   |
| Empowerment                                     |          |      |
| 3.3.1 Delegation of authority.....              | 88.30    | 7    |
| 3.3.2 Personal rights.....                      | 91.35    | 16   |
| Collaboration                                   |          |      |
| 3.3.3 Use of virtual social networks.....       | 78.97    | 41   |
| 3.3.4 Use of virtual professional networks..... | 46.67    | 20   |
| 3.3.5 Collaboration within organisations .....  | 100.00   | 1    |
| 3.3.6 Collaboration across organisations .....  | 84.68    | 6    |

|                                      |          |   |
|--------------------------------------|----------|---|
| <b>4 RETAIN.....94.18</b>            | <b>1</b> |   |
| 4.1 Sustainability .....             | 96.43    | 1 |
| 4.1.1 Pension system.....            | 94.90    | 3 |
| 4.1.2 Social protection .....        | 94.39    | 8 |
| 4.1.3 Brain retention .....          | 100.00   | 1 |
| 4.2 Lifestyle .....                  | 91.93    | 2 |
| 4.2.1 Environmental performance..... | 100.00   | 1 |
| 4.2.2 Personal safety .....          | 99.90    | 2 |
| 4.2.3 Physician density .....        | 67.82    | 7 |
| 4.2.4 Sanitation .....               | 100.00   | 1 |

|                                                          |          |    |
|----------------------------------------------------------|----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 82.79</b>      | <b>1</b> |    |
| 5.1 Mid-Level Skills .....                               | 67.61    | 8  |
| 5.1.1 Workforce with secondary education .....           | 60.74    | 31 |
| 5.1.2 Population with secondary education .....          | 68.47    | 17 |
| 5.1.3 Technicians and associate professionals .....      | 84.82    | 7  |
| 5.1.4 Labour productivity per employee.....              | 56.42    | 12 |
| 5.2 Employability.....                                   | 97.97    | 1  |
| 5.2.1 Ease of finding skilled employees .....            | 91.88    | 6  |
| 5.2.2 Relevance of education system to the economy ..... | 100.00   | 1  |
| 5.2.3 Skills matching with secondary education.....      | 100.00   | 1  |
| 5.2.4 Skills matching with tertiary education .....      | 100.00   | 1  |

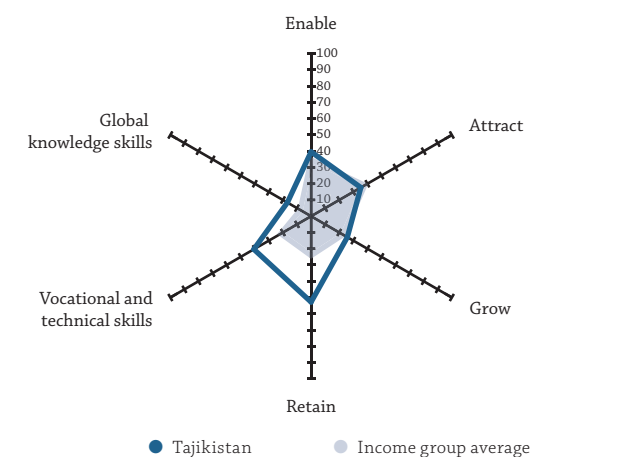
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|------------------------------------------------------|--------------|----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>62.38</b> | <b>4</b> |
| 6.1 High-Level Skills .....                          | 63.23        | 8        |
| 6.1.1 Workforce with tertiary education .....        | 61.11        | 16       |
| 6.1.2 Population with tertiary education .....       | 60.61        | 9        |
| 6.1.3 Professionals.....                             | 67.42        | 10       |
| 6.1.4 Researchers.....                               | 63.69        | 10       |
| 6.1.5 Senior officials and managers .....            | 52.98        | 14       |
| 6.1.6 Availability of scientists and engineers ..... | 73.57        | 12       |
| 6.2 Talent Impact.....                               | 61.52        | 4        |
| 6.2.1 Innovation output.....                         | 100.00       | 1        |
| 6.2.2 High-value exports .....                       | 49.15        | 7        |
| 6.2.3 New product entrepreneurial activity .....     | 37.75        | 45       |
| 6.2.4 New business density .....                     | 20.72        | 29       |
| 6.2.5 Scientific journal articles.....               | 100.00       | 1        |

# TAJIKISTAN

Key Indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Rank (out of 125).....     | <b>81</b>                        |
| Income group.....          | <b>Low income</b>                |
| Regional group.....        | <b>Central and Southern Asia</b> |
| Population (millions)..... | <b>8.92</b>                      |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....39.63 98</b>                   |       |      |
| 1.1 Regulatory Landscape.....                  | 32.33 | 108  |
| 1.1.1 Government effectiveness.....            | 19.85 | 117  |
| 1.1.2 Business-government relations.....       | 66.89 | 36   |
| 1.1.3 Political stability.....                 | 46.30 | 98   |
| 1.1.4 Regulatory quality.....                  | 21.77 | 118  |
| 1.1.5 Corruption.....                          | 6.85  | 121  |
| 1.2 Market Landscape.....                      | 31.39 | 111  |
| 1.2.1 Competition intensity.....               | 56.45 | 92   |
| 1.2.2 Ease of doing business.....              | 46.68 | 100  |
| 1.2.3 Cluster development.....                 | 14.63 | 112  |
| 1.2.4 R&D expenditure.....                     | 2.17  | 101  |
| 1.2.5 ICT infrastructure.....                  | n/a   | n/a  |
| 1.2.6 Technology utilisation.....              | 37.02 | 98   |
| 1.3 Business and Labour Landscape.....         | 55.16 | 52   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 55.67 | 76   |
| 1.3.2 Ease of redundancy.....                  | 50.00 | 85   |
| 1.3.3 Active labour market policies.....       | 62.77 | 31   |
| 1.3.4 Labour-employer cooperation.....         | 52.41 | 40   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 41.57 | 73   |
| 1.3.6 Relationship of pay to productivity..... | 68.57 | 25   |
| <b>2 ATTRACT.....35.34 101</b>                 |       |      |
| 2.1 External Openness.....                     | 28.24 | 101  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 46.20 | 91   |
| 2.1.2 Prevalence of foreign ownership.....     | 33.60 | 112  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 6.19  | 69   |
| 2.1.4 International students.....              | 4.12  | 78   |
| 2.1.5 Brain gain.....                          | 51.10 | 42   |
| 2.2 Internal Openness.....                     | 42.45 | 96   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 25.88 | 89   |
| 2.2.2 Tolerance of immigrants.....             | 31.08 | 100  |
| 2.2.3 Social mobility.....                     | 56.83 | 41   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 36.06 | 94   |
| 2.2.5 Gender earnings gap.....                 | 49.58 | 76   |
| 2.2.6 Leadership opportunities for women.....  | 55.25 | 40   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>3,180.39</b> |
| GDP (US\$ billions).....               | <b>7.15</b>     |
| GTCI score.....                        | <b>35.17</b>    |
| GTCI score (income group average)..... | <b>24.81</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....25.75 100</b>                     |       |      |
| 3.1 Formal Education.....                       | 9.75  | 112  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 2.87  | 105  |
| 3.1.2 Tertiary enrolment.....                   | 24.86 | 77   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 11.28 | 90   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 39.24 | 69   |
| 3.2.1 Quality of management schools.....        | 36.28 | 77   |
| 3.2.2 Prevalence of training in firms.....      | 39.18 | 41   |
| 3.2.3 Employee development.....                 | 42.24 | 59   |
| 3.3 Access to Growth Opportunities.....         | 28.25 | 108  |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 42.15 | 74   |
| 3.3.2 Personal rights.....                      | 1.38  | 123  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 30.77 | 120  |
| 3.3.4 Use of virtual professional networks..... | 0.17  | 117  |
| 3.3.5 Collaboration within organisations.....   | 48.66 | 37   |
| 3.3.6 Collaboration across organisations.....   | 46.37 | 29   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....52.79 58</b>         |       |     |
| 4.1 Sustainability.....              | 51.93 | 40  |
| 4.1.1 Pension system.....            | n/a   | n/a |
| 4.1.2 Social protection.....         | 51.95 | 40  |
| 4.1.3 Brain retention.....           | 51.91 | 44  |
| 4.2 Lifestyle.....                   | 53.66 | 76  |
| 4.2.1 Environmental performance..... | 34.04 | 99  |
| 4.2.2 Personal safety.....           | 58.79 | 73  |
| 4.2.3 Physician density.....         | 27.19 | 70  |
| 4.2.4 Sanitation.....                | 94.62 | 53  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....40.67 55</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 38.97 | 63  |
| 5.1.1 Workforce with secondary education.....           | 86.79 | 8   |
| 5.1.2 Population with secondary education.....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals.....      | 25.00 | 80  |
| 5.1.4 Labour productivity per employee.....             | 5.11  | 89  |
| 5.2 Employability.....                                  | 42.37 | 65  |
| 5.2.1 Ease of finding skilled employees.....            | 38.97 | 80  |
| 5.2.2 Relevance of education system to the economy..... | 46.03 | 47  |
| 5.2.3 Skills matching with secondary education.....     | 39.04 | 72  |
| 5.2.4 Skills matching with tertiary education.....      | 45.45 | 68  |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....16.84 85</b>       |       |     |
| 6.1 High-Level Skills.....                          | 26.54 | 69  |
| 6.1.1 Workforce with tertiary education.....        | 23.55 | 81  |
| 6.1.2 Population with tertiary education.....       | n/a   | n/a |
| 6.1.3 Professionals.....                            | 19.66 | 78  |
| 6.1.4 Researchers.....                              | n/a   | n/a |
| 6.1.5 Senior officials and managers.....            | 14.88 | 72  |
| 6.1.6 Availability of scientists and engineers..... | 48.07 | 49  |
| 6.2 Talent Impact.....                              | 7.13  | 107 |
| 6.2.1 Innovation output.....                        | 20.40 | 86  |
| 6.2.2 High-value exports.....                       | n/a   | n/a |
| 6.2.3 New product entrepreneurial activity.....     | n/a   | n/a |
| 6.2.4 New business density.....                     | 0.82  | 90  |
| 6.2.5 Scientific journal articles.....              | 0.17  | 114 |

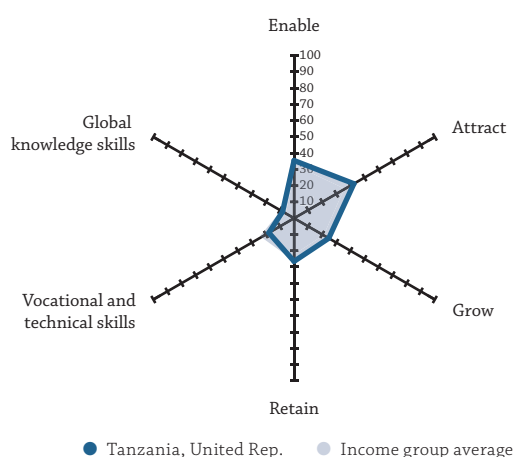
# TANZANIA, UNITED REP.

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>111</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>57.31</b>              |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>2,945.88</b> |
| GDP (US\$ billions) .....               | <b>52.09</b>    |
| GTCI score.....                         | <b>25.87</b>    |
| GTCI score (income group average) ..... | <b>24.81</b>    |

GTCI 2019 Country Profile by Pillar



|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>1 ENABLE.....35.51 108</b>                   |       |      |
| 1.1 Regulatory Landscape.....                   | 39.18 | 95   |
| 1.1.1 Government effectiveness .....            | 31.51 | 95   |
| 1.1.2 Business-government relations .....       | 44.59 | 96   |
| 1.1.3 Political stability .....                 | 55.09 | 84   |
| 1.1.4 Regulatory quality .....                  | 37.32 | 94   |
| 1.1.5 Corruption .....                          | 27.40 | 80   |
| 1.2 Market Landscape.....                       | 32.61 | 108  |
| 1.2.1 Competition intensity .....               | 53.38 | 102  |
| 1.2.2 Ease of doing business .....              | 41.61 | 107  |
| 1.2.3 Cluster development .....                 | 40.76 | 55   |
| 1.2.4 R&D expenditure .....                     | 12.14 | 57   |
| 1.2.5 ICT infrastructure .....                  | 10.69 | 116  |
| 1.2.6 Technology utilisation .....              | 37.06 | 97   |
| 1.3 Business and Labour Landscape.....          | 34.76 | 112  |
| Labour Market                                   |       |      |
| 1.3.1 Ease of hiring .....                      | 55.67 | 76   |
| 1.3.2 Ease of redundancy .....                  | 25.00 | 109  |
| 1.3.3 Active labour market policies.....        | 32.70 | 82   |
| 1.3.4 Labour-employer cooperation .....         | 24.28 | 104  |
| Management Practice                             |       |      |
| 1.3.5 Professional management.....              | 37.68 | 85   |
| 1.3.6 Relationship of pay to productivity ..... | 33.21 | 100  |
| <b>2 ATTRACT.....42.48 66</b>                   |       |      |
| 2.1 External Openness .....                     | 34.74 | 78   |
| Attract Business                                |       |      |
| 2.1.1 FDI and technology transfer.....          | 47.66 | 86   |
| 2.1.2 Prevalence of foreign ownership .....     | 45.63 | 94   |
| Attract People                                  |       |      |
| 2.1.3 Migrant stock.....                        | 1.63  | 101  |
| 2.1.4 International students.....               | n/a   | n/a  |
| 2.1.5 Brain gain.....                           | 44.02 | 60   |
| 2.2 Internal Openness.....                      | 50.22 | 60   |
| Social Inclusion                                |       |      |
| 2.2.1 Tolerance of minorities .....             | 51.76 | 49   |
| 2.2.2 Tolerance of immigrants.....              | 45.95 | 80   |
| 2.2.3 Social mobility.....                      | 48.93 | 66   |
| Gender Equality                                 |       |      |
| 2.2.4 Female graduates .....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap .....                 | 66.55 | 23   |
| 2.2.6 Leadership opportunities for women.....   | 37.93 | 70   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....24.62 106</b>                     |       |      |
| 3.1 Formal Education.....                       | 11.14 | 104  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | 25.20 | 56   |
| 3.1.2 Tertiary enrolment.....                   | 2.60  | 116  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 16.78 | 75   |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 25.68 | 112  |
| 3.2.1 Quality of management schools.....        | 17.95 | 113  |
| 3.2.2 Prevalence of training in firms .....     | 36.02 | 48   |
| 3.2.3 Employee development.....                 | 23.07 | 102  |
| 3.3 Access to Growth Opportunities .....        | 37.03 | 79   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 35.67 | 87   |
| 3.3.2 Personal rights.....                      | 43.12 | 83   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 46.93 | 110  |
| 3.3.4 Use of virtual professional networks..... | n/a   | n/a  |
| 3.3.5 Collaboration within organisations .....  | 27.20 | 87   |
| 3.3.6 Collaboration across organisations .....  | 32.22 | 63   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....26.53 111</b>        |       |     |
| 4.1 Sustainability .....             | 26.74 | 100 |
| 4.1.1 Pension system.....            | 2.04  | 103 |
| 4.1.2 Social protection .....        | 40.32 | 61  |
| 4.1.3 Brain retention .....          | 37.86 | 71  |
| 4.2 Lifestyle .....                  | 26.32 | 110 |
| 4.2.1 Environmental performance..... | 39.01 | 93  |
| 4.2.2 Personal safety .....          | 47.93 | 92  |
| 4.2.3 Physician density .....        | 0.06  | 124 |
| 4.2.4 Sanitation .....               | 18.28 | 118 |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....17.91 121</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 3.65  | 119 |
| 5.1.1 Workforce with secondary education .....           | 2.71  | 113 |
| 5.1.2 Population with secondary education .....          | 1.00  | 105 |
| 5.1.3 Technicians and associate professionals .....      | 8.48  | 105 |
| 5.1.4 Labour productivity per employee .....             | 2.41  | 97  |
| 5.2 Employability.....                                   | 32.18 | 88  |
| 5.2.1 Ease of finding skilled employees .....            | 42.15 | 73  |
| 5.2.2 Relevance of education system to the economy ..... | 26.49 | 84  |
| 5.2.3 Skills matching with secondary education.....      | 26.66 | 107 |
| 5.2.4 Skills matching with tertiary education .....      | 33.41 | 90  |

|                                                      |       |     |
|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....8.17 113</b>       |       |     |
| 6.1 High-Level Skills .....                          | 6.24  | 120 |
| 6.1.1 Workforce with tertiary education .....        | 0.68  | 115 |
| 6.1.2 Population with tertiary education .....       | 1.36  | 100 |
| 6.1.3 Professionals.....                             | 0.84  | 120 |
| 6.1.4 Researchers.....                               | 0.13  | 101 |
| 6.1.5 Senior officials and managers .....            | 1.79  | 118 |
| 6.1.6 Availability of scientists and engineers ..... | 32.62 | 82  |
| 6.2 Talent Impact.....                               | 10.09 | 92  |
| 6.2.1 Innovation output.....                         | 26.29 | 70  |
| 6.2.2 High-value exports .....                       | 3.65  | 98  |
| 6.2.3 New product entrepreneurial activity .....     | n/a   | n/a |
| 6.2.4 New business density .....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....               | 0.34  | 111 |

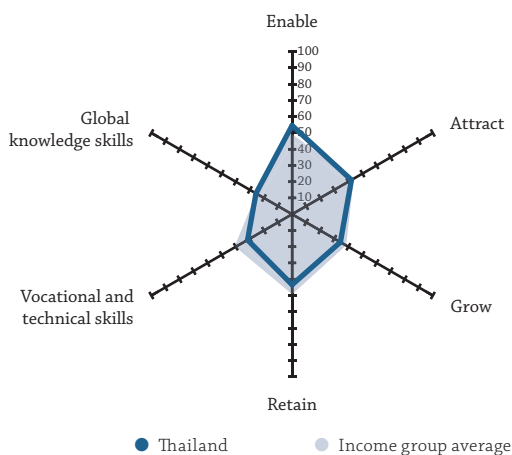


# THAILAND

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>66</b>                                     |
| Income group.....          | <b>Upper-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>69.04</b>                                  |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>54.55</b> | <b>47</b> |
| 1.1 Regulatory Landscape.....                  | 46.86        | 74        |
| 1.1.1 Government effectiveness.....            | 53.60        | 49        |
| 1.1.2 Business-government relations.....       | 56.95        | 66        |
| 1.1.3 Political stability.....                 | 43.06        | 104       |
| 1.1.4 Regulatory quality.....                  | 51.91        | 60        |
| 1.1.5 Corruption.....                          | 28.77        | 73        |
| 1.2 Market Landscape.....                      | 53.99        | 47        |
| 1.2.1 Competition intensity.....               | 75.21        | 40        |
| 1.2.2 Ease of doing business.....              | 83.64        | 23        |
| 1.2.3 Cluster development.....                 | 38.67        | 63        |
| 1.2.4 R&D expenditure.....                     | 14.26        | 51        |
| 1.2.5 ICT infrastructure.....                  | 48.35        | 73        |
| 1.2.6 Technology utilisation.....              | 63.81        | 40        |
| 1.3 Business and Labour Landscape.....         | 62.81        | 35        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 55.67        | 76        |
| 1.3.2 Ease of redundancy.....                  | 100.00       | 1         |
| 1.3.3 Active labour market policies.....       | 50.57        | 51        |
| 1.3.4 Labour-employer cooperation.....         | 55.76        | 34        |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 54.21        | 48        |
| 1.3.6 Relationship of pay to productivity..... | 60.66        | 44        |
| <b>2 ATTRACT.....</b>                          | <b>42.16</b> | <b>70</b> |
| 2.1 External Openness.....                     | 39.42        | 63        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 67.23        | 38        |
| 2.1.2 Prevalence of foreign ownership.....     | 65.19        | 49        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 10.61        | 53        |
| 2.1.4 International students.....              | 2.41         | 82        |
| 2.1.5 Brain gain.....                          | 51.66        | 41        |
| 2.2 Internal Openness.....                     | 44.91        | 83        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 9.41         | 112       |
| 2.2.2 Tolerance of immigrants.....             | 8.11         | 118       |
| 2.2.3 Social mobility.....                     | 45.51        | 76        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 71.26        | 60        |
| 2.2.5 Gender earnings gap.....                 | 72.76        | 13        |
| 2.2.6 Leadership opportunities for women.....  | 62.41        | 26        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>17,870.52</b> |
| GDP (US\$ billions).....               | <b>455.22</b>    |
| GTCI score.....                        | <b>38.62</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>34.32</b> | <b>72</b> |
| 3.1 Formal Education.....                       | 27.36        | 65        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 21.10        | 65        |
| 3.1.2 Tertiary enrolment.....                   | 37.26        | 60        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 14.24        | 84        |
| 3.1.4 Reading, maths, and science.....          | 35.88        | 55        |
| 3.1.5 University ranking.....                   | 28.31        | 40        |
| 3.2 Lifelong Learning.....                      | 34.97        | 76        |
| 3.2.1 Quality of management schools.....        | 38.05        | 72        |
| 3.2.2 Prevalence of training in firms.....      | 19.26        | 77        |
| 3.2.3 Employee development.....                 | 47.58        | 43        |
| 3.3 Access to Growth Opportunities.....         | 40.65        | 65        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 50.17        | 48        |
| 3.3.2 Personal rights.....                      | 26.72        | 101       |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 88.45        | 13        |
| 3.3.4 Use of virtual professional networks..... | 2.97         | 100       |
| 3.3.5 Collaboration within organisations.....   | 40.39        | 49        |
| 3.3.6 Collaboration across organisations.....   | 35.18        | 56        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>43.37</b> | <b>76</b> |
| 4.1 Sustainability.....              | 39.96        | 65        |
| 4.1.1 Pension system.....            | 21.43        | 74        |
| 4.1.2 Social protection.....         | 44.56        | 52        |
| 4.1.3 Brain retention.....           | 53.89        | 39        |
| 4.2 Lifestyle.....                   | 46.78        | 90        |
| 4.2.1 Environmental performance..... | 37.42        | 95        |
| 4.2.2 Personal safety.....           | 47.82        | 94        |
| 4.2.3 Physician density.....         | 7.25         | 98        |
| 4.2.4 Sanitation.....                | 94.62        | 53        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>31.64</b> | <b>83</b> |
| 5.1 Mid-Level Skills.....                               | 20.53        | 95        |
| 5.1.1 Workforce with secondary education.....           | 26.80        | 83        |
| 5.1.2 Population with secondary education.....          | 19.12        | 86        |
| 5.1.3 Technicians and associate professionals.....      | 19.20        | 86        |
| 5.1.4 Labour productivity per employee.....             | 16.99        | 68        |
| 5.2 Employability.....                                  | 42.75        | 62        |
| 5.2.1 Ease of finding skilled employees.....            | 38.90        | 81        |
| 5.2.2 Relevance of education system to the economy..... | 37.50        | 59        |
| 5.2.3 Skills matching with secondary education.....     | 39.12        | 71        |
| 5.2.4 Skills matching with tertiary education.....      | 55.47        | 41        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>25.65</b> | <b>58</b> |
| 6.1 High-Level Skills.....                          | 24.23        | 74        |
| 6.1.1 Workforce with tertiary education.....        | 23.94        | 78        |
| 6.1.2 Population with tertiary education.....       | 30.22        | 54        |
| 6.1.3 Professionals.....                            | 14.61        | 90        |
| 6.1.4 Researchers.....                              | 10.41        | 52        |
| 6.1.5 Senior officials and managers.....            | 22.02        | 60        |
| 6.1.6 Availability of scientists and engineers..... | 44.16        | 54        |
| 6.2 Talent Impact.....                              | 27.07        | 47        |
| 6.2.1 Innovation output.....                        | 39.86        | 44        |
| 6.2.2 High-value exports.....                       | 39.04        | 14        |
| 6.2.3 New product entrepreneurial activity.....     | 46.18        | 26        |
| 6.2.4 New business density.....                     | 4.72         | 69        |
| 6.2.5 Scientific journal articles.....              | 5.52         | 66        |



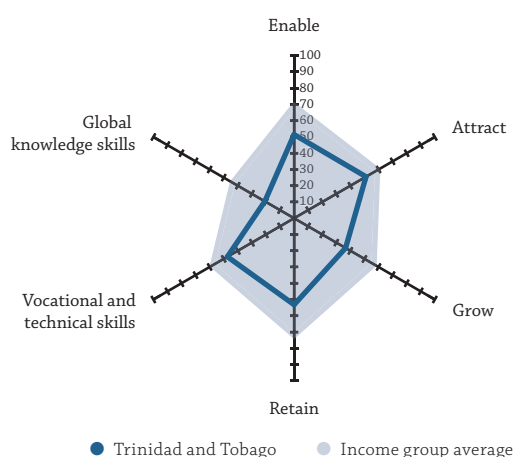
# TRINIDAD AND TOBAGO

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>50</b>                              |
| Income group.....          | <b>High income</b>                     |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>1.37</b>                            |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>31,577.67</b> |
| GDP (US\$ billions).....               | <b>22.10</b>     |
| GTCI score.....                        | <b>43.43</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....51.51</b>                      | <b>54</b> |      |
| 1.1 Regulatory Landscape.....                  | 53.15     | 54   |
| 1.1.1 Government effectiveness.....            | 50.62     | 54   |
| 1.1.2 Business-government relations.....       | 59.82     | 60   |
| 1.1.3 Political stability.....                 | 71.06     | 49   |
| 1.1.4 Regulatory quality.....                  | 50.00     | 63   |
| 1.1.5 Corruption.....                          | 34.25     | 61   |
| 1.2 Market Landscape.....                      | 45.91     | 68   |
| 1.2.1 Competition intensity.....               | 70.35     | 61   |
| 1.2.2 Ease of doing business.....              | 53.54     | 86   |
| 1.2.3 Cluster development.....                 | 33.62     | 77   |
| 1.2.4 R&D expenditure.....                     | 1.81      | 104  |
| 1.2.5 ICT infrastructure.....                  | 69.97     | 47   |
| 1.2.6 Technology utilisation.....              | 46.14     | 70   |
| 1.3 Business and Labour Landscape.....         | 55.48     | 51   |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 87.50     | 34   |
| 1.3.3 Active labour market policies.....       | 35.41     | 74   |
| 1.3.4 Labour-employer cooperation.....         | 8.23      | 124  |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 56.12     | 39   |
| 1.3.6 Relationship of pay to productivity..... | 45.60     | 65   |
| <b>2 ATTRACT.....51.09</b>                     | <b>38</b> |      |
| 2.1 External Openness.....                     | 41.63     | 51   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 56.93     | 63   |
| 2.1.2 Prevalence of foreign ownership.....     | 56.27     | 68   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 7.44      | 63   |
| 2.1.4 International students.....              | n/a       | n/a  |
| 2.1.5 Brain gain.....                          | 45.89     | 53   |
| 2.2 Internal Openness.....                     | 60.56     | 33   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 63.53     | 27   |
| 2.2.2 Tolerance of immigrants.....             | 68.92     | 40   |
| 2.2.3 Social mobility.....                     | 58.78     | 36   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | n/a       | n/a  |
| 2.2.5 Gender earnings gap.....                 | n/a       | n/a  |
| 2.2.6 Leadership opportunities for women.....  | 50.99     | 46   |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....36.58</b>                         | <b>64</b> |      |
| 3.1 Formal Education.....                       | 19.76     | 79   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | n/a       | n/a  |
| 3.1.2 Tertiary enrolment.....                   | n/a       | n/a  |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | n/a       | n/a  |
| 3.1.4 Reading, maths, and science.....          | 39.52     | 49   |
| 3.1.5 University ranking.....                   | 0.00      | 78   |
| 3.2 Lifelong Learning.....                      | 47.29     | 47   |
| 3.2.1 Quality of management schools.....        | 58.32     | 33   |
| 3.2.2 Prevalence of training in firms.....      | 32.45     | 54   |
| 3.2.3 Employee development.....                 | 51.11     | 39   |
| 3.3 Access to Growth Opportunities.....         | 42.69     | 56   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 50.14     | 49   |
| 3.3.2 Personal rights.....                      | 72.80     | 38   |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 72.28     | 59   |
| 3.3.4 Use of virtual professional networks..... | 47.22     | 17   |
| 3.3.5 Collaboration within organisations.....   | 12.83     | 118  |
| 3.3.6 Collaboration across organisations.....   | 0.88      | 122  |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....53.20</b>            | <b>56</b> |     |
| 4.1 Sustainability.....              | 50.48     | 44  |
| 4.1.1 Pension system.....            | 70.41     | 33  |
| 4.1.2 Social protection.....         | 38.22     | 67  |
| 4.1.3 Brain retention.....           | 42.80     | 61  |
| 4.2 Lifestyle.....                   | 55.92     | 69  |
| 4.2.1 Environmental performance..... | 66.56     | 34  |
| 4.2.2 Personal safety.....           | 36.83     | 107 |
| 4.2.3 Physician density.....         | 28.91     | 65  |
| 4.2.4 Sanitation.....                | 91.40     | 66  |

|                                                         |           |    |
|---------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....47.38</b>      | <b>44</b> |    |
| 5.1 Mid-Level Skills.....                               | 43.52     | 55 |
| 5.1.1 Workforce with secondary education.....           | 66.51     | 27 |
| 5.1.2 Population with secondary education.....          | 17.97     | 91 |
| 5.1.3 Technicians and associate professionals.....      | 51.79     | 36 |
| 5.1.4 Labour productivity per employee.....             | 37.80     | 39 |
| 5.2 Employability.....                                  | 51.25     | 43 |
| 5.2.1 Ease of finding skilled employees.....            | 55.01     | 51 |
| 5.2.2 Relevance of education system to the economy..... | 50.00     | 43 |
| 5.2.3 Skills matching with secondary education.....     | 49.78     | 43 |
| 5.2.4 Skills matching with tertiary education.....      | 50.19     | 56 |

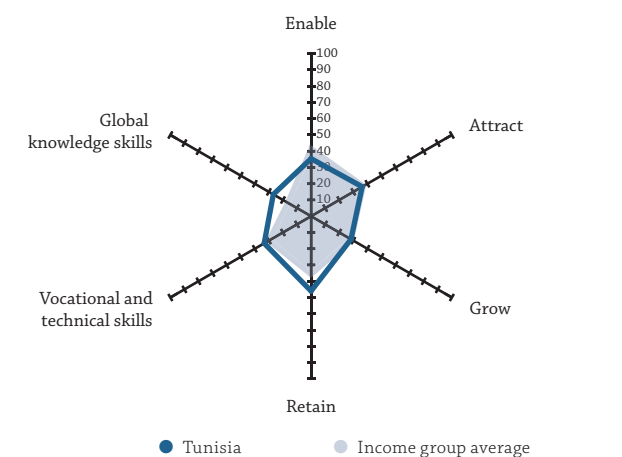
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|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....20.79</b>          | <b>71</b> |     |
| 6.1 High-Level Skills.....                          | 31.61     | 54  |
| 6.1.1 Workforce with tertiary education.....        | 32.93     | 59  |
| 6.1.2 Population with tertiary education.....       | 14.43     | 82  |
| 6.1.3 Professionals.....                            | 11.24     | 99  |
| 6.1.4 Researchers.....                              | n/a       | n/a |
| 6.1.5 Senior officials and managers.....            | 50.00     | 17  |
| 6.1.6 Availability of scientists and engineers..... | 49.47     | 45  |
| 6.2 Talent Impact.....                              | 9.96      | 95  |
| 6.2.1 Innovation output.....                        | 13.81     | 101 |
| 6.2.2 High-value exports.....                       | 0.22      | 118 |
| 6.2.3 New product entrepreneurial activity.....     | 20.41     | 65  |
| 6.2.4 New business density.....                     | n/a       | n/a |
| 6.2.5 Scientific journal articles.....              | 5.38      | 67  |

# TUNISIA

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>84</b>                               |
| Income group.....          | <b>Lower-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>11.53</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 35.44 109</b>                 |       |      |
| 1.1 Regulatory Landscape.....                  | 40.08 | 92   |
| 1.1.1 Government effectiveness.....            | 39.95 | 83   |
| 1.1.2 Business-government relations.....       | 46.58 | 90   |
| 1.1.3 Political stability.....                 | 41.67 | 108  |
| 1.1.4 Regulatory quality.....                  | 36.60 | 96   |
| 1.1.5 Corruption.....                          | 35.62 | 59   |
| 1.2 Market Landscape.....                      | 38.06 | 93   |
| 1.2.1 Competition intensity.....               | 63.20 | 74   |
| 1.2.2 Ease of doing business.....              | 58.75 | 79   |
| 1.2.3 Cluster development.....                 | 15.14 | 110  |
| 1.2.4 R&D expenditure.....                     | 13.81 | 54   |
| 1.2.5 ICT infrastructure.....                  | 43.64 | 79   |
| 1.2.6 Technology utilisation.....              | 33.82 | 105  |
| 1.3 Business and Labour Landscape.....         | 28.17 | 120  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 61.00 | 75   |
| 1.3.2 Ease of redundancy.....                  | 0.00  | 122  |
| 1.3.3 Active labour market policies.....       | 31.29 | 84   |
| 1.3.4 Labour-employer cooperation.....         | 18.70 | 114  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 37.78 | 84   |
| 1.3.6 Relationship of pay to productivity..... | 20.27 | 119  |
| <b>2 ATTRACT..... 36.28 96</b>                 |       |      |
| 2.1 External Openness.....                     | 26.29 | 106  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 50.79 | 79   |
| 2.1.2 Prevalence of foreign ownership.....     | 47.28 | 93   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 0.89  | 109  |
| 2.1.4 International students.....              | 10.55 | 64   |
| 2.1.5 Brain gain.....                          | 21.95 | 109  |
| 2.2 Internal Openness.....                     | 46.27 | 76   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 22.35 | 96   |
| 2.2.2 Tolerance of immigrants.....             | 59.46 | 56   |
| 2.2.3 Social mobility.....                     | 50.10 | 61   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | 93.40 | 7    |
| 2.2.5 Gender earnings gap.....                 | 12.78 | 111  |
| 2.2.6 Leadership opportunities for women.....  | 39.54 | 65   |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>11,910.95</b> |
| GDP (US\$ billions).....               | <b>40.26</b>     |
| GTCI score.....                        | <b>34.37</b>     |
| GTCI score (income group average)..... | <b>31.64</b>     |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 28.34 92</b>                     |       |      |
| 3.1 Formal Education.....                       | 19.52 | 81   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 18.88 | 71   |
| 3.1.2 Tertiary enrolment.....                   | 26.27 | 74   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 37.21 | 17   |
| 3.1.4 Reading, maths, and science.....          | 15.24 | 65   |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 31.53 | 89   |
| 3.2.1 Quality of management schools.....        | 36.28 | 77   |
| 3.2.2 Prevalence of training in firms.....      | 33.64 | 50   |
| 3.2.3 Employee development.....                 | 24.68 | 100  |
| 3.3 Access to Growth Opportunities.....         | 33.96 | 93   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 24.00 | 113  |
| 3.3.2 Personal rights.....                      | 68.37 | 47   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 75.40 | 50   |
| 3.3.4 Use of virtual professional networks..... | 15.47 | 62   |
| 3.3.5 Collaboration within organisations.....   | 19.81 | 104  |
| 3.3.6 Collaboration across organisations.....   | 0.70  | 123  |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 46.03 67</b>        |       |     |
| 4.1 Sustainability.....              | 33.29 | 77  |
| 4.1.1 Pension system.....            | 47.96 | 50  |
| 4.1.2 Social protection.....         | 27.62 | 89  |
| 4.1.3 Brain retention.....           | 24.30 | 103 |
| 4.2 Lifestyle.....                   | 58.76 | 63  |
| 4.2.1 Environmental performance..... | 58.21 | 51  |
| 4.2.2 Personal safety.....           | 63.98 | 62  |
| 4.2.3 Physician density.....         | 20.38 | 77  |
| 4.2.4 Sanitation.....                | 92.47 | 62  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 33.32 81</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 36.22 | 67  |
| 5.1.1 Workforce with secondary education.....           | 51.43 | 51  |
| 5.1.2 Population with secondary education.....          | 39.09 | 51  |
| 5.1.3 Technicians and associate professionals.....      | 33.04 | 64  |
| 5.1.4 Labour productivity per employee.....             | 21.32 | 63  |
| 5.2 Employability.....                                  | 30.42 | 94  |
| 5.2.1 Ease of finding skilled employees.....            | 48.38 | 63  |
| 5.2.2 Relevance of education system to the economy..... | 21.43 | 96  |
| 5.2.3 Skills matching with secondary education.....     | 27.63 | 102 |
| 5.2.4 Skills matching with tertiary education.....      | 24.25 | 111 |

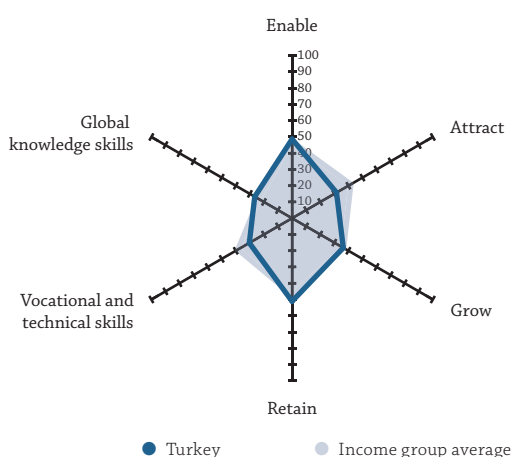
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|-----------------------------------------------------|-------|----|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 26.84 55</b>      |       |    |
| 6.1 High-Level Skills.....                          | 29.94 | 59 |
| 6.1.1 Workforce with tertiary education.....        | 29.06 | 66 |
| 6.1.2 Population with tertiary education.....       | 19.02 | 77 |
| 6.1.3 Professionals.....                            | 17.42 | 84 |
| 6.1.4 Researchers.....                              | 23.75 | 39 |
| 6.1.5 Senior officials and managers.....            | 38.10 | 31 |
| 6.1.6 Availability of scientists and engineers..... | 52.34 | 41 |
| 6.2 Talent Impact.....                              | 23.74 | 52 |
| 6.2.1 Innovation output.....                        | 29.66 | 62 |
| 6.2.2 High-value exports.....                       | 11.01 | 64 |
| 6.2.3 New product entrepreneurial activity.....     | 51.75 | 15 |
| 6.2.4 New business density.....                     | 8.00  | 55 |
| 6.2.5 Scientific journal articles.....              | 18.26 | 44 |

# TURKEY

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>74</b>                               |
| Income group.....          | <b>Upper-middle income</b>              |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>80.75</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank       |
|------------------------------------------------|--------------|------------|
| <b>1 ENABLE.....</b>                           | <b>48.67</b> | <b>66</b>  |
| 1.1 Regulatory Landscape.....                  | 42.09        | 87         |
| 1.1.1 Government effectiveness.....            | 46.40        | 66         |
| 1.1.2 Business-government relations.....       | 60.26        | 56         |
| 1.1.3 Political stability.....                 | 18.29        | 121        |
| 1.1.4 Regulatory quality.....                  | 52.63        | 58         |
| 1.1.5 Corruption.....                          | 32.88        | 64         |
| 1.2 Market Landscape.....                      | 56.58        | 40         |
| 1.2.1 Competition intensity.....               | 90.35        | 7          |
| 1.2.2 Ease of doing business.....              | 68.73        | 55         |
| 1.2.3 Cluster development.....                 | 40.25        | 56         |
| 1.2.4 R&D expenditure.....                     | 20.45        | 38         |
| 1.2.5 ICT infrastructure.....                  | 58.78        | 64         |
| 1.2.6 Technology utilisation.....              | 60.90        | 44         |
| 1.3 Business and Labour Landscape.....         | 47.34        | 82         |
| Labour Market                                  |              |            |
| 1.3.1 Ease of hiring.....                      | 55.67        | 76         |
| 1.3.2 Ease of redundancy.....                  | 87.50        | 34         |
| 1.3.3 Active labour market policies.....       | 39.63        | 67         |
| 1.3.4 Labour-employer cooperation.....         | 21.70        | 109        |
| Management Practice                            |              |            |
| 1.3.5 Professional management.....             | 40.61        | 76         |
| 1.3.6 Relationship of pay to productivity..... | 38.93        | 86         |
| <b>2 ATTRACT.....</b>                          | <b>31.57</b> | <b>113</b> |
| 2.1 External Openness.....                     | 30.55        | 90         |
| Attract Business                               |              |            |
| 2.1.1 FDI and technology transfer.....         | 58.54        | 57         |
| 2.1.2 Prevalence of foreign ownership.....     | 47.63        | 92         |
| Attract People                                 |              |            |
| 2.1.3 Migrant stock.....                       | 12.36        | 52         |
| 2.1.4 International students.....              | 5.87         | 72         |
| 2.1.5 Brain gain.....                          | 28.36        | 94         |
| 2.2 Internal Openness.....                     | 32.60        | 121        |
| Social Inclusion                               |              |            |
| 2.2.1 Tolerance of minorities.....             | 3.53         | 120        |
| 2.2.2 Tolerance of immigrants.....             | 52.70        | 67         |
| 2.2.3 Social mobility.....                     | 41.41        | 86         |
| Gender Equality                                |              |            |
| 2.2.4 Female graduates.....                    | 53.11        | 83         |
| 2.2.5 Gender earnings gap.....                 | 33.09        | 104        |
| 2.2.6 Leadership opportunities for women.....  | 11.72        | 119        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>27,916.45</b> |
| GDP (US\$ billions).....               | <b>851.10</b>    |
| GTCI score.....                        | <b>37.44</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>36.37</b> | <b>66</b> |
| 3.1 Formal Education.....                       | 46.62        | 31        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 53.04        | 24        |
| 3.1.2 Tertiary enrolment.....                   | 78.18        | 3         |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 36.51        | 19        |
| 3.1.4 Reading, maths, and science.....          | 40.33        | 48        |
| 3.1.5 University ranking.....                   | 25.04        | 46        |
| 3.2 Lifelong Learning.....                      | 28.03        | 105       |
| 3.2.1 Quality of management schools.....        | 25.93        | 102       |
| 3.2.2 Prevalence of training in firms.....      | 32.98        | 51        |
| 3.2.3 Employee development.....                 | 25.18        | 96        |
| 3.3 Access to Growth Opportunities.....         | 34.47        | 90        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 35.06        | 90        |
| 3.3.2 Personal rights.....                      | 24.77        | 104       |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 75.42        | 49        |
| 3.3.4 Use of virtual professional networks..... | 18.81        | 53        |
| 3.3.5 Collaboration within organisations.....   | 30.10        | 80        |
| 3.3.6 Collaboration across organisations.....   | 22.64        | 88        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>51.11</b> | <b>60</b> |
| 4.1 Sustainability.....              | 47.59        | 50        |
| 4.1.1 Pension system.....            | 58.16        | 44        |
| 4.1.2 Social protection.....         | 47.79        | 45        |
| 4.1.3 Brain retention.....           | 36.82        | 79        |
| 4.2 Lifestyle.....                   | 54.62        | 73        |
| 4.2.1 Environmental performance..... | 42.56        | 85        |
| 4.2.2 Personal safety.....           | 52.47        | 84        |
| 4.2.3 Physician density.....         | 27.75        | 68        |
| 4.2.4 Sanitation.....                | 95.70        | 48        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>30.38</b> | <b>90</b> |
| 5.1 Mid-Level Skills.....                               | 29.66        | 80        |
| 5.1.1 Workforce with secondary education.....           | 26.19        | 84        |
| 5.1.2 Population with secondary education.....          | 25.82        | 71        |
| 5.1.3 Technicians and associate professionals.....      | 25.00        | 80        |
| 5.1.4 Labour productivity per employee.....             | 41.62        | 30        |
| 5.2 Employability.....                                  | 31.10        | 93        |
| 5.2.1 Ease of finding skilled employees.....            | 38.60        | 82        |
| 5.2.2 Relevance of education system to the economy..... | 23.79        | 94        |
| 5.2.3 Skills matching with secondary education.....     | 31.93        | 91        |
| 5.2.4 Skills matching with tertiary education.....      | 30.07        | 97        |

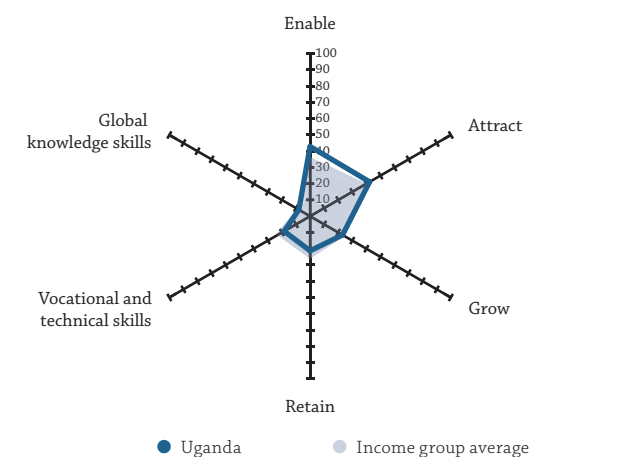
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|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>26.54</b> | <b>57</b> |
| 6.1 High-Level Skills.....                          | 29.84        | 61        |
| 6.1.1 Workforce with tertiary education.....        | 35.14        | 56        |
| 6.1.2 Population with tertiary education.....       | 25.47        | 63        |
| 6.1.3 Professionals.....                            | 26.97        | 65        |
| 6.1.4 Researchers.....                              | 14.66        | 45        |
| 6.1.5 Senior officials and managers.....            | 28.57        | 45        |
| 6.1.6 Availability of scientists and engineers..... | 48.25        | 47        |
| 6.2 Talent Impact.....                              | 23.24        | 54        |
| 6.2.1 Innovation output.....                        | 41.01        | 42        |
| 6.2.2 High-value exports.....                       | 3.68         | 97        |
| 6.2.3 New product entrepreneurial activity.....     | 49.10        | 18        |
| 6.2.4 New business density.....                     | 5.64         | 64        |
| 6.2.5 Scientific journal articles.....              | 16.79        | 45        |

# UGANDA

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>109</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>42.86</b>              |

GTCI 2019 Country Profile by Pillar



|                                                | Score  | Rank |
|------------------------------------------------|--------|------|
| <b>1 ENABLE.....42.92 86</b>                   |        |      |
| 1.1 Regulatory Landscape.....                  | 38.97  | 96   |
| 1.1.1 Government effectiveness.....            | 31.02  | 96   |
| 1.1.2 Business-government relations.....       | 59.38  | 63   |
| 1.1.3 Political stability.....                 | 47.92  | 95   |
| 1.1.4 Regulatory quality.....                  | 42.82  | 80   |
| 1.1.5 Corruption.....                          | 13.70  | 114  |
| 1.2 Market Landscape.....                      | 33.76  | 105  |
| 1.2.1 Competition intensity.....               | 72.56  | 52   |
| 1.2.2 Ease of doing business.....              | 46.82  | 99   |
| 1.2.3 Cluster development.....                 | 33.11  | 78   |
| 1.2.4 R&D expenditure.....                     | 3.67   | 89   |
| 1.2.5 ICT infrastructure.....                  | 9.92   | 117  |
| 1.2.6 Technology utilisation.....              | 36.45  | 101  |
| 1.3 Business and Labour Landscape.....         | 56.05  | 50   |
| Labour Market                                  |        |      |
| 1.3.1 Ease of hiring.....                      | 100.00 | 1    |
| 1.3.2 Ease of redundancy.....                  | 100.00 | 1    |
| 1.3.3 Active labour market policies.....       | 17.41  | 111  |
| 1.3.4 Labour-employer cooperation.....         | 43.62  | 53   |
| Management Practice                            |        |      |
| 1.3.5 Professional management.....             | 41.59  | 72   |
| 1.3.6 Relationship of pay to productivity..... | 33.68  | 99   |
| <b>2 ATTRACT.....42.28 68</b>                  |        |      |
| 2.1 External Openness.....                     | 44.68  | 41   |
| Attract Business                               |        |      |
| 2.1.1 FDI and technology transfer.....         | 51.10  | 78   |
| 2.1.2 Prevalence of foreign ownership.....     | 72.89  | 35   |
| Attract People                                 |        |      |
| 2.1.3 Migrant stock.....                       | 8.02   | 60   |
| 2.1.4 International students.....              | 54.03  | 16   |
| 2.1.5 Brain gain.....                          | 37.38  | 81   |
| 2.2 Internal Openness.....                     | 39.88  | 105  |
| Social Inclusion                               |        |      |
| 2.2.1 Tolerance of minorities.....             | 9.41   | 112  |
| 2.2.2 Tolerance of immigrants.....             | 32.43  | 98   |
| 2.2.3 Social mobility.....                     | 49.46  | 64   |
| Gender Equality                                |        |      |
| 2.2.4 Female graduates.....                    | n/a    | n/a  |
| 2.2.5 Gender earnings gap.....                 | 51.97  | 65   |
| 2.2.6 Leadership opportunities for women.....  | 56.13  | 38   |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>1,863.84</b> |
| GDP (US\$ billions).....               | <b>25.89</b>    |
| GTGI score.....                        | <b>25.99</b>    |
| GTGI score (income group average)..... | <b>24.81</b>    |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....23.05 110</b>                     |       |      |
| 3.1 Formal Education.....                       | 3.57  | 123  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | n/a   | n/a  |
| 3.1.2 Tertiary enrolment.....                   | 3.18  | 113  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 7.52  | 100  |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 32.97 | 86   |
| 3.2.1 Quality of management schools.....        | 28.51 | 97   |
| 3.2.2 Prevalence of training in firms.....      | 41.29 | 39   |
| 3.2.3 Employee development.....                 | 29.11 | 88   |
| 3.3 Access to Growth Opportunities.....         | 32.62 | 96   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 45.92 | 65   |
| 3.3.2 Personal rights.....                      | 32.12 | 95   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 50.53 | 107  |
| 3.3.4 Use of virtual professional networks..... | 2.52  | 102  |
| 3.3.5 Collaboration within organisations.....   | 40.35 | 50   |
| 3.3.6 Collaboration across organisations.....   | 24.26 | 86   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....21.27 118</b>        |       |     |
| 4.1 Sustainability.....              | 19.65 | 113 |
| 4.1.1 Pension system.....            | 8.16  | 88  |
| 4.1.2 Social protection.....         | 19.72 | 106 |
| 4.1.3 Brain retention.....           | 31.07 | 95  |
| 4.2 Lifestyle.....                   | 22.89 | 121 |
| 4.2.1 Environmental performance..... | 28.09 | 107 |
| 4.2.2 Personal safety.....           | 49.35 | 90  |
| 4.2.3 Physician density.....         | 1.20  | 111 |
| 4.2.4 Sanitation.....                | 12.90 | 121 |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....18.44 120</b>  |       |     |
| 5.1 Mid-Level Skills.....                               | 3.33  | 122 |
| 5.1.1 Workforce with secondary education.....           | 0.17  | 115 |
| 5.1.2 Population with secondary education.....          | 2.28  | 104 |
| 5.1.3 Technicians and associate professionals.....      | 8.93  | 102 |
| 5.1.4 Labour productivity per employee.....             | 1.95  | 99  |
| 5.2 Employability.....                                  | 33.54 | 85  |
| 5.2.1 Ease of finding skilled employees.....            | 57.95 | 47  |
| 5.2.2 Relevance of education system to the economy..... | 29.25 | 79  |
| 5.2.3 Skills matching with secondary education.....     | 15.64 | 118 |
| 5.2.4 Skills matching with tertiary education.....      | 31.31 | 93  |

|                                                     |       |     |
|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....7.99 115</b>       |       |     |
| 6.1 High-Level Skills.....                          | 11.10 | 108 |
| 6.1.1 Workforce with tertiary education.....        | 7.14  | 104 |
| 6.1.2 Population with tertiary education.....       | 11.71 | 89  |
| 6.1.3 Professionals.....                            | 2.81  | 118 |
| 6.1.4 Researchers.....                              | 0.23  | 96  |
| 6.1.5 Senior officials and managers.....            | 1.19  | 120 |
| 6.1.6 Availability of scientists and engineers..... | 43.49 | 57  |
| 6.2 Talent Impact.....                              | 4.89  | 115 |
| 6.2.1 Innovation output.....                        | 13.15 | 107 |
| 6.2.2 High-value exports.....                       | 3.32  | 103 |
| 6.2.3 New product entrepreneurial activity.....     | 4.18  | 84  |
| 6.2.4 New business density.....                     | 3.33  | 76  |
| 6.2.5 Scientific journal articles.....              | 0.50  | 104 |

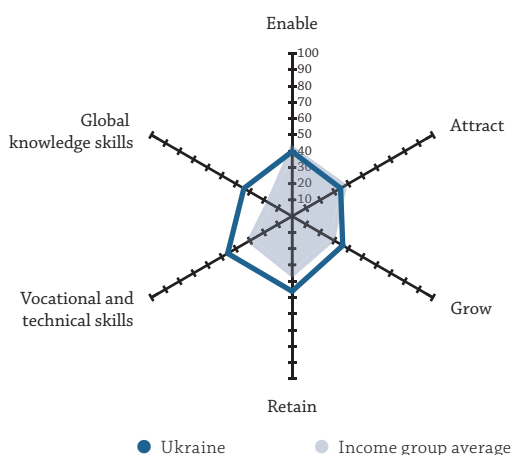
# UKRAINE

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>63</b>                  |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Europe</b>              |
| Population (millions)..... | <b>44.83</b>               |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>8,666.90</b> |
| GDP (US\$ billions) .....               | <b>112.15</b>   |
| GTCI score.....                         | <b>39.41</b>    |
| GTCI score (income group average) ..... | <b>31.64</b>    |

GTCI 2019 Country Profile by Pillar



|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>1 ENABLE.....39.79 96</b>                           |       |      |
| 1.1 Regulatory Landscape.....28.86 118                 |       |      |
| 1.1.1 Government effectiveness.....30.77 97            |       |      |
| 1.1.2 Business-government relations.....35.98 108      |       |      |
| 1.1.3 Political stability.....20.83 120                |       |      |
| 1.1.4 Regulatory quality.....37.56 93                  |       |      |
| 1.1.5 Corruption.....19.18 99                          |       |      |
| 1.2 Market Landscape.....43.71 75                      |       |      |
| 1.2.1 Competition intensity.....63.50 73               |       |      |
| 1.2.2 Ease of doing business.....62.64 68              |       |      |
| 1.2.3 Cluster development.....18.41 101                |       |      |
| 1.2.4 R&D expenditure.....11.07 61                     |       |      |
| 1.2.5 ICT infrastructure.....62.60 61                  |       |      |
| 1.2.6 Technology utilisation.....44.03 77              |       |      |
| 1.3 Business and Labour Landscape.....46.79 83         |       |      |
| Labour Market                                          |       |      |
| 1.3.1 Ease of hiring.....55.67 76                      |       |      |
| 1.3.2 Ease of redundancy.....62.50 64                  |       |      |
| 1.3.3 Active labour market policies.....49.91 52       |       |      |
| 1.3.4 Labour-employer cooperation.....33.23 84         |       |      |
| Management Practice                                    |       |      |
| 1.3.5 Professional management.....24.03 117            |       |      |
| 1.3.6 Relationship of pay to productivity.....55.42 51 |       |      |
| <b>2 ATTRACT.....34.45 105</b>                         |       |      |
| 2.1 External Openness.....26.04 109                    |       |      |
| Attract Business                                       |       |      |
| 2.1.1 FDI and technology transfer.....35.32 111        |       |      |
| 2.1.2 Prevalence of foreign ownership.....27.69 118    |       |      |
| Attract People                                         |       |      |
| 2.1.3 Migrant stock.....23.07 36                       |       |      |
| 2.1.4 International students.....16.03 57              |       |      |
| 2.1.5 Brain gain.....28.06 97                          |       |      |
| 2.2 Internal Openness.....42.87 93                     |       |      |
| Social Inclusion                                       |       |      |
| 2.2.1 Tolerance of minorities.....34.12 75             |       |      |
| 2.2.2 Tolerance of immigrants.....27.03 106            |       |      |
| 2.2.3 Social mobility.....23.47 123                    |       |      |
| Gender Equality                                        |       |      |
| 2.2.4 Female graduates.....65.02 72                    |       |      |
| 2.2.5 Gender earnings gap.....52.21 64                 |       |      |
| 2.2.6 Leadership opportunities for women.....55.39 39  |       |      |

|                                                        | Score | Rank |
|--------------------------------------------------------|-------|------|
| <b>3 GROW.....36.00 68</b>                             |       |      |
| 3.1 Formal Education.....37.74 45                      |       |      |
| Enrolment                                              |       |      |
| 3.1.1 Vocational enrolment.....16.65 76                |       |      |
| 3.1.2 Tertiary enrolment.....68.26 11                  |       |      |
| Quality                                                |       |      |
| 3.1.3 Tertiary education expenditure.....43.88 11      |       |      |
| 3.1.4 Reading, maths, and science.....n/a n/a          |       |      |
| 3.1.5 University ranking.....22.18 48                  |       |      |
| 3.2 Lifelong Learning.....30.39 94                     |       |      |
| 3.2.1 Quality of management schools.....35.61 82       |       |      |
| 3.2.2 Prevalence of training in firms.....25.33 67     |       |      |
| 3.2.3 Employee development.....30.22 82                |       |      |
| 3.3 Access to Growth Opportunities.....39.87 66        |       |      |
| Empowerment                                            |       |      |
| 3.3.1 Delegation of authority.....35.67 87             |       |      |
| 3.3.2 Personal rights.....57.79 65                     |       |      |
| Collaboration                                          |       |      |
| 3.3.3 Use of virtual social networks.....62.49 88      |       |      |
| 3.3.4 Use of virtual professional networks.....7.74 82 |       |      |
| 3.3.5 Collaboration within organisations.....40.24 51  |       |      |
| 3.3.6 Collaboration across organisations.....35.32 53  |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN.....46.17 66</b>                 |  |  |
| 4.1 Sustainability.....35.70 71              |  |  |
| 4.1.1 Pension system.....64.29 40            |  |  |
| 4.1.2 Social protection.....29.87 85         |  |  |
| 4.1.3 Brain retention.....12.94 118          |  |  |
| 4.2 Lifestyle.....56.65 66                   |  |  |
| 4.2.1 Environmental performance.....42.41 86 |  |  |
| 4.2.2 Personal safety.....40.69 103          |  |  |
| 4.2.3 Physician density.....47.81 37         |  |  |
| 4.2.4 Sanitation.....95.70 48                |  |  |

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....45.75 45</b>           |  |  |
| 5.1 Mid-Level Skills.....41.09 59                               |  |  |
| 5.1.1 Workforce with secondary education.....60.47 32           |  |  |
| 5.1.2 Population with secondary education.....n/a n/a           |  |  |
| 5.1.3 Technicians and associate professionals.....51.34 37      |  |  |
| 5.1.4 Labour productivity per employee.....11.45 78             |  |  |
| 5.2 Employability.....50.41 44                                  |  |  |
| 5.2.1 Ease of finding skilled employees.....61.40 39            |  |  |
| 5.2.2 Relevance of education system to the economy.....41.12 52 |  |  |
| 5.2.3 Skills matching with secondary education.....45.29 56     |  |  |
| 5.2.4 Skills matching with tertiary education.....53.81 44      |  |  |

|                                                             |  |  |
|-------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....34.27 37</b>               |  |  |
| 6.1 High-Level Skills.....49.65 24                          |  |  |
| 6.1.1 Workforce with tertiary education.....80.70 2         |  |  |
| 6.1.2 Population with tertiary education.....n/a n/a        |  |  |
| 6.1.3 Professionals.....48.60 28                            |  |  |
| 6.1.4 Researchers.....12.50 48                              |  |  |
| 6.1.5 Senior officials and managers.....44.64 22            |  |  |
| 6.1.6 Availability of scientists and engineers.....61.80 24 |  |  |
| 6.2 Talent Impact.....18.89 63                              |  |  |
| 6.2.1 Innovation output.....48.44 34                        |  |  |
| 6.2.2 High-value exports.....13.19 58                       |  |  |
| 6.2.3 New product entrepreneurial activity.....n/a n/a      |  |  |
| 6.2.4 New business density.....7.37 59                      |  |  |
| 6.2.5 Scientific journal articles.....6.55 62               |  |  |

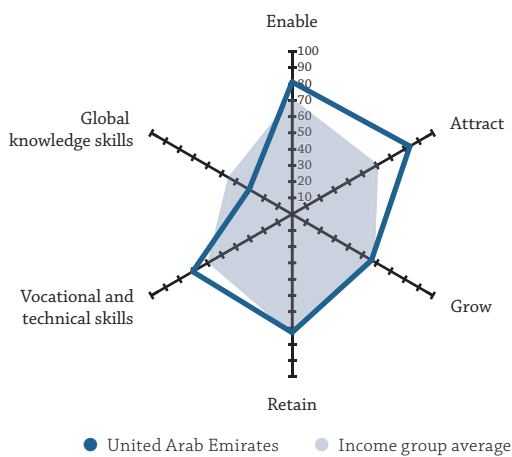
# UNITED ARAB EMIRATES

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>19</b>                               |
| Income group.....          | <b>High income</b>                      |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>9.40</b>                             |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>73,878.47</b> |
| GDP (US\$ billions).....               | <b>382.58</b>    |
| GTCI score.....                        | <b>65.90</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....81.38</b>                      | <b>12</b> |      |
| 1.1 Regulatory Landscape.....                  | 79.78     | 16   |
| 1.1.1 Government effectiveness.....            | 80.15     | 17   |
| 1.1.2 Business-government relations.....       | 97.57     | 2    |
| 1.1.3 Political stability.....                 | 74.77     | 42   |
| 1.1.4 Regulatory quality.....                  | 71.05     | 33   |
| 1.1.5 Corruption.....                          | 75.34     | 20   |
| 1.2 Market Landscape.....                      | 75.67     | 15   |
| 1.2.1 Competition intensity.....               | 81.41     | 17   |
| 1.2.2 Ease of doing business.....              | 85.96     | 18   |
| 1.2.3 Cluster development.....                 | 91.65     | 2    |
| 1.2.4 R&D expenditure.....                     | 22.94     | 35   |
| 1.2.5 ICT infrastructure.....                  | 81.81     | 22   |
| 1.2.6 Technology utilisation.....              | 90.27     | 10   |
| 1.3 Business and Labour Landscape.....         | 88.71     | 5    |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring.....                      | 100.00    | 1    |
| 1.3.2 Ease of redundancy.....                  | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 77.38     | 15   |
| 1.3.4 Labour-employer cooperation.....         | 81.95     | 9    |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 81.10     | 18   |
| 1.3.6 Relationship of pay to productivity..... | 91.80     | 4    |
| <b>2 ATTRACT.....83.68</b>                     | <b>3</b>  |      |
| 2.1 External Openness.....                     | 94.46     | 2    |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 87.82     | 4    |
| 2.1.2 Prevalence of foreign ownership.....     | 86.57     | 11   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 100.00    | 1    |
| 2.1.4 International students.....              | 100.00    | 1    |
| 2.1.5 Brain gain.....                          | 97.91     | 2    |
| 2.2 Internal Openness.....                     | 72.89     | 12   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities.....             | 72.94     | 12   |
| 2.2.2 Tolerance of immigrants.....             | 100.00    | 1    |
| 2.2.3 Social mobility.....                     | 90.97     | 9    |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates.....                    | 68.12     | 70   |
| 2.2.5 Gender earnings gap.....                 | 12.19     | 112  |
| 2.2.6 Leadership opportunities for women.....  | 93.15     | 4    |

|                                                 | Score     | Rank |
|-------------------------------------------------|-----------|------|
| <b>3 GROW.....56.45</b>                         | <b>22</b> |      |
| 3.1 Formal Education.....                       | 27.30     | 66   |
| Enrolment                                       |           |      |
| 3.1.1 Vocational enrolment.....                 | 3.88      | 102  |
| 3.1.2 Tertiary enrolment.....                   | 29.79     | 69   |
| Quality                                         |           |      |
| 3.1.3 Tertiary education expenditure.....       | n/a       | n/a  |
| 3.1.4 Reading, maths, and science.....          | 44.01     | 46   |
| 3.1.5 University ranking.....                   | 31.50     | 37   |
| 3.2 Lifelong Learning.....                      | 77.83     | 13   |
| 3.2.1 Quality of management schools.....        | 75.54     | 14   |
| 3.2.2 Prevalence of training in firms.....      | n/a       | n/a  |
| 3.2.3 Employee development.....                 | 80.12     | 14   |
| 3.3 Access to Growth Opportunities.....         | 64.22     | 23   |
| Empowerment                                     |           |      |
| 3.3.1 Delegation of authority.....              | 75.22     | 20   |
| 3.3.2 Personal rights.....                      | 19.11     | 105  |
| Collaboration                                   |           |      |
| 3.3.3 Use of virtual social networks.....       | 92.31     | 8    |
| 3.3.4 Use of virtual professional networks..... | 44.56     | 21   |
| 3.3.5 Collaboration within organisations.....   | 75.01     | 19   |
| 3.3.6 Collaboration across organisations.....   | 79.12     | 10   |

|                                      |           |     |
|--------------------------------------|-----------|-----|
| <b>4 RETAIN.....72.77</b>            | <b>24</b> |     |
| 4.1 Sustainability.....              | 81.55     | 14  |
| 4.1.1 Pension system.....            | n/a       | n/a |
| 4.1.2 Social protection.....         | 65.79     | 27  |
| 4.1.3 Brain retention.....           | 97.30     | 2   |
| 4.2 Lifestyle.....                   | 64.00     | 50  |
| 4.2.1 Environmental performance..... | 52.46     | 66  |
| 4.2.2 Personal safety.....           | 78.83     | 39  |
| 4.2.3 Physician density.....         | 24.69     | 73  |
| 4.2.4 Sanitation.....                | 100.00    | 1   |

|                                                         |          |     |
|---------------------------------------------------------|----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....70.59</b>      | <b>8</b> |     |
| 5.1 Mid-Level Skills.....                               | 59.89    | 21  |
| 5.1.1 Workforce with secondary education.....           | 37.25    | 71  |
| 5.1.2 Population with secondary education.....          | n/a      | n/a |
| 5.1.3 Technicians and associate professionals.....      | 42.41    | 50  |
| 5.1.4 Labour productivity per employee.....             | 100.00   | 1   |
| 5.2 Employability.....                                  | 81.30    | 10  |
| 5.2.1 Ease of finding skilled employees.....            | 94.28    | 5   |
| 5.2.2 Relevance of education system to the economy..... | 77.00    | 12  |
| 5.2.3 Skills matching with secondary education.....     | 73.51    | 12  |
| 5.2.4 Skills matching with tertiary education.....      | 80.42    | 16  |

|                                                     |           |     |
|-----------------------------------------------------|-----------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....30.53</b>          | <b>49</b> |     |
| 6.1 High-Level Skills.....                          | 43.81     | 32  |
| 6.1.1 Workforce with tertiary education.....        | 24.79     | 75  |
| 6.1.2 Population with tertiary education.....       | n/a       | n/a |
| 6.1.3 Professionals.....                            | 38.20     | 46  |
| 6.1.4 Researchers.....                              | 29.11     | 33  |
| 6.1.5 Senior officials and managers.....            | 44.05     | 23  |
| 6.1.6 Availability of scientists and engineers..... | 82.89     | 3   |
| 6.2 Talent Impact.....                              | 17.25     | 68  |
| 6.2.1 Innovation output.....                        | 34.54     | 53  |
| 6.2.2 High-value exports.....                       | 4.21      | 91  |
| 6.2.3 New product entrepreneurial activity.....     | 25.65     | 60  |
| 6.2.4 New business density.....                     | 12.58     | 40  |
| 6.2.5 Scientific journal articles.....              | 9.26      | 54  |



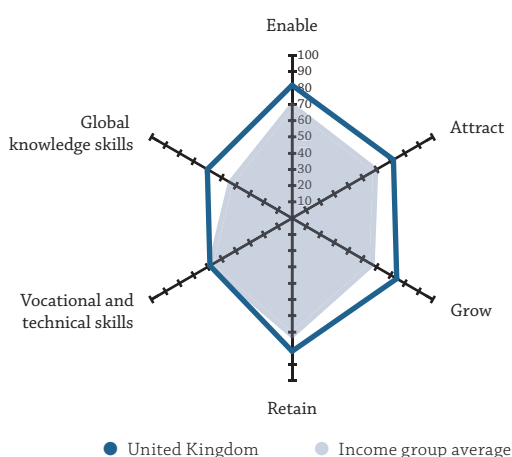
# UNITED KINGDOM

Key Indicators

|                            |                    |
|----------------------------|--------------------|
| Rank (out of 125).....     | <b>9</b>           |
| Income group.....          | <b>High income</b> |
| Regional group.....        | <b>Europe</b>      |
| Population (millions)..... | <b>66.02</b>       |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>43,876.60</b> |
| GDP (US\$ billions) .....               | <b>2,622.43</b>  |
| GTCI score.....                         | <b>71.44</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score    | Rank |
|------------------------------------------------|----------|------|
| <b>1 ENABLE.....81.84</b>                      | <b>9</b> |      |
| 1.1 Regulatory Landscape.....                  | 82.16    | 15   |
| 1.1.1 Government effectiveness .....           | 85.11    | 13   |
| 1.1.2 Business-government relations .....      | 71.96    | 25   |
| 1.1.3 Political stability .....                | 73.38    | 45   |
| 1.1.4 Regulatory quality.....                  | 89.95    | 9    |
| 1.1.5 Corruption .....                         | 90.41    | 8    |
| 1.2 Market Landscape.....                      | 81.51    | 9    |
| 1.2.1 Competition intensity.....               | 86.04    | 13   |
| 1.2.2 Ease of doing business .....             | 92.22    | 6    |
| 1.2.3 Cluster development .....                | 89.08    | 5    |
| 1.2.4 R&D expenditure .....                    | 39.55    | 20   |
| 1.2.5 ICT infrastructure.....                  | 95.04    | 3    |
| 1.2.6 Technology utilisation.....              | 87.10    | 13   |
| 1.3 Business and Labour Landscape.....         | 81.84    | 10   |
| Labour Market                                  |          |      |
| 1.3.1 Ease of hiring .....                     | 89.00    | 27   |
| 1.3.2 Ease of redundancy .....                 | 100.00   | 1    |
| 1.3.3 Active labour market policies.....       | 63.68    | 29   |
| 1.3.4 Labour-employer cooperation .....        | 71.62    | 17   |
| Management Practice                            |          |      |
| 1.3.5 Professional management.....             | 91.84    | 9    |
| 1.3.6 Relationship of pay to productivity..... | 74.93    | 16   |
| <b>2 ATTRACT.....72.01</b>                     | <b>9</b> |      |
| 2.1 External Openness .....                    | 80.18    | 6    |
| Attract Business                               |          |      |
| 2.1.1 FDI and technology transfer.....         | 85.65    | 7    |
| 2.1.2 Prevalence of foreign ownership .....    | 100.00   | 1    |
| Attract People                                 |          |      |
| 2.1.3 Migrant stock.....                       | 27.49    | 27   |
| 2.1.4 International students.....              | 93.15    | 6    |
| 2.1.5 Brain gain.....                          | 94.59    | 3    |
| 2.2 Internal Openness.....                     | 63.85    | 24   |
| Social Inclusion                               |          |      |
| 2.2.1 Tolerance of minorities.....             | 45.88    | 54   |
| 2.2.2 Tolerance of immigrants.....             | 85.14    | 12   |
| 2.2.3 Social mobility.....                     | 72.82    | 25   |
| Gender Equality                                |          |      |
| 2.2.4 Female graduates .....                   | 73.18    | 54   |
| 2.2.5 Gender earnings gap.....                 | 46.59    | 81   |
| 2.2.6 Leadership opportunities for women.....  | 59.48    | 32   |

|                                                 | Score    | Rank |
|-------------------------------------------------|----------|------|
| <b>3 GROW.....74.35</b>                         | <b>9</b> |      |
| 3.1 Formal Education.....                       | 62.03    | 7    |
| Enrolment                                       |          |      |
| 3.1.1 Vocational enrolment .....                | 61.64    | 17   |
| 3.1.2 Tertiary enrolment.....                   | 46.68    | 43   |
| Quality                                         |          |      |
| 3.1.3 Tertiary education expenditure.....       | 30.01    | 31   |
| 3.1.4 Reading, maths, and science .....         | 75.67    | 20   |
| 3.1.5 University ranking .....                  | 96.16    | 2    |
| 3.2 Lifelong Learning.....                      | 78.89    | 12   |
| 3.2.1 Quality of management schools.....        | 90.51    | 2    |
| 3.2.2 Prevalence of training in firms.....      | n/a      | n/a  |
| 3.2.3 Employee development.....                 | 67.26    | 24   |
| 3.3 Access to Growth Opportunities .....        | 82.13    | 9    |
| Empowerment                                     |          |      |
| 3.3.1 Delegation of authority.....              | 80.80    | 15   |
| 3.3.2 Personal rights.....                      | 91.38    | 15   |
| Collaboration                                   |          |      |
| 3.3.3 Use of virtual social networks.....       | 95.51    | 6    |
| 3.3.4 Use of virtual professional networks..... | 76.19    | 10   |
| 3.3.5 Collaboration within organisations .....  | 72.66    | 20   |
| 3.3.6 Collaboration across organisations .....  | 76.23    | 11   |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....81.84</b>            | <b>11</b> |    |
| 4.1 Sustainability .....             | 84.29     | 9  |
| 4.1.1 Pension system.....            | 92.86     | 8  |
| 4.1.2 Social protection .....        | 74.45     | 18 |
| 4.1.3 Brain retention .....          | 85.56     | 6  |
| 4.2 Lifestyle .....                  | 79.38     | 19 |
| 4.2.1 Environmental performance..... | 87.45     | 6  |
| 4.2.2 Personal safety .....          | 86.15     | 25 |
| 4.2.3 Physician density .....        | 45.01     | 40 |
| 4.2.4 Sanitation .....               | 98.92     | 21 |

|                                                          |           |    |
|----------------------------------------------------------|-----------|----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 58.38</b>      | <b>27</b> |    |
| 5.1 Mid-Level Skills .....                               | 50.02     | 40 |
| 5.1.1 Workforce with secondary education .....           | 53.64     | 43 |
| 5.1.2 Population with secondary education .....          | 42.23     | 46 |
| 5.1.3 Technicians and associate professionals .....      | 54.91     | 33 |
| 5.1.4 Labour productivity per employee.....              | 49.29     | 23 |
| 5.2 Employability.....                                   | 66.74     | 23 |
| 5.2.1 Ease of finding skilled employees .....            | 76.49     | 17 |
| 5.2.2 Relevance of education system to the economy ..... | 61.66     | 21 |
| 5.2.3 Skills matching with secondary education.....      | 59.21     | 30 |
| 5.2.4 Skills matching with tertiary education .....      | 69.58     | 25 |

|                                                      |              |          |
|------------------------------------------------------|--------------|----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>60.22</b> | <b>5</b> |
| 6.1 High-Level Skills .....                          | 62.13        | 10       |
| 6.1.1 Workforce with tertiary education .....        | 65.30        | 11       |
| 6.1.2 Population with tertiary education .....       | 53.14        | 17       |
| 6.1.3 Professionals.....                             | 68.54        | 8        |
| 6.1.4 Researchers.....                               | 53.65        | 18       |
| 6.1.5 Senior officials and managers .....            | 65.48        | 9        |
| 6.1.6 Availability of scientists and engineers ..... | 66.68        | 17       |
| 6.2 Talent Impact.....                               | 58.31        | 6        |
| 6.2.1 Innovation output.....                         | 75.08        | 6        |
| 6.2.2 High-value exports .....                       | 39.62        | 13       |
| 6.2.3 New product entrepreneurial activity .....     | 41.87        | 36       |
| 6.2.4 New business density .....                     | 75.81        | 5        |
| 6.2.5 Scientific journal articles.....               | 59.18        | 14       |



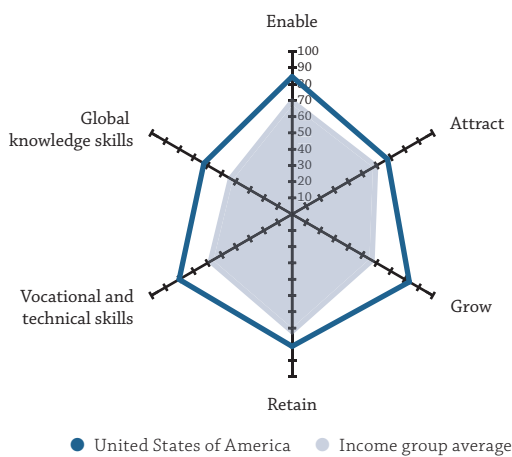
# UNITED STATES OF AMERICA

Key Indicators

|                            |                         |
|----------------------------|-------------------------|
| Rank (out of 125).....     | <b>3</b>                |
| Income group.....          | <b>High income</b>      |
| Regional group.....        | <b>Northern America</b> |
| Population (millions)..... | <b>325.72</b>           |

|                                         |                  |
|-----------------------------------------|------------------|
| GDP per capita (PPP US\$) .....         | <b>59,531.66</b> |
| GDP (US\$ billions) .....               | <b>19,390.60</b> |
| GTCI score.....                         | <b>76.64</b>     |
| GTCI score (income group average) ..... | <b>59.93</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score     | Rank |
|------------------------------------------------|-----------|------|
| <b>1 ENABLE.....84.61</b>                      | <b>4</b>  |      |
| 1.1 Regulatory Landscape.....                  | 74.51     | 21   |
| 1.1.1 Government effectiveness .....           | 81.89     | 16   |
| 1.1.2 Business-government relations .....      | 53.42     | 74   |
| 1.1.3 Political stability .....                | 72.69     | 46   |
| 1.1.4 Regulatory quality.....                  | 83.73     | 16   |
| 1.1.5 Corruption .....                         | 80.82     | 15   |
| 1.2 Market Landscape.....                      | 89.11     | 1    |
| 1.2.1 Competition intensity .....              | 93.95     | 4    |
| 1.2.2 Ease of doing business .....             | 92.80     | 5    |
| 1.2.3 Cluster development .....                | 100.00    | 1    |
| 1.2.4 R&D expenditure .....                    | 64.43     | 10   |
| 1.2.5 ICT infrastructure.....                  | 83.84     | 16   |
| 1.2.6 Technology utilisation.....              | 99.65     | 2    |
| 1.3 Business and Labour Landscape.....         | 90.21     | 4    |
| Labour Market                                  |           |      |
| 1.3.1 Ease of hiring .....                     | 94.50     | 26   |
| 1.3.2 Ease of redundancy .....                 | 100.00    | 1    |
| 1.3.3 Active labour market policies.....       | 84.48     | 9    |
| 1.3.4 Labour-employer cooperation .....        | 76.04     | 13   |
| Management Practice                            |           |      |
| 1.3.5 Professional management.....             | 88.69     | 13   |
| 1.3.6 Relationship of pay to productivity..... | 97.52     | 3    |
| <b>2 ATTRACT.....67.78</b>                     | <b>14</b> |      |
| 2.1 External Openness .....                    | 63.07     | 13   |
| Attract Business                               |           |      |
| 2.1.1 FDI and technology transfer.....         | 86.90     | 5    |
| 2.1.2 Prevalence of foreign ownership .....    | 81.61     | 21   |
| Attract People                                 |           |      |
| 2.1.3 Migrant stock.....                       | 31.59     | 22   |
| 2.1.4 International students.....              | 23.31     | 40   |
| 2.1.5 Brain gain.....                          | 91.93     | 5    |
| 2.2 Internal Openness.....                     | 72.50     | 13   |
| Social Inclusion                               |           |      |
| 2.2.1 Tolerance of minorities .....            | 55.29     | 42   |
| 2.2.2 Tolerance of immigrants.....             | 83.78     | 18   |
| 2.2.3 Social mobility.....                     | 84.53     | 13   |
| Gender Equality                                |           |      |
| 2.2.4 Female graduates .....                   | 76.25     | 50   |
| 2.2.5 Gender earnings gap .....                | 57.95     | 46   |
| 2.2.6 Leadership opportunities for women.....  | 77.20     | 13   |

|                                                 | Score    | Rank |
|-------------------------------------------------|----------|------|
| <b>3 GROW.....83.28</b>                         | <b>1</b> |      |
| 3.1 Formal Education.....                       | 67.34    | 3    |
| Enrolment                                       |          |      |
| 3.1.1 Vocational enrolment .....                | n/a      | n/a  |
| 3.1.2 Tertiary enrolment.....                   | n/a      | n/a  |
| Quality                                         |          |      |
| 3.1.3 Tertiary education expenditure.....       | 32.14    | 26   |
| 3.1.4 Reading, maths, and science .....         | 69.89    | 28   |
| 3.1.5 University ranking .....                  | 100.00   | 1    |
| 3.2 Lifelong Learning.....                      | 88.52    | 2    |
| 3.2.1 Quality of management schools.....        | 85.60    | 6    |
| 3.2.2 Prevalence of training in firms.....      | n/a      | n/a  |
| 3.2.3 Employee development.....                 | 91.44    | 2    |
| 3.3 Access to Growth Opportunities .....        | 93.99    | 1    |
| Empowerment                                     |          |      |
| 3.3.1 Delegation of authority.....              | 86.22    | 8    |
| 3.3.2 Personal rights.....                      | 89.22    | 20   |
| Collaboration                                   |          |      |
| 3.3.3 Use of virtual social networks.....       | 92.31    | 8    |
| 3.3.4 Use of virtual professional networks..... | 100.00   | 1    |
| 3.3.5 Collaboration within organisations .....  | 96.21    | 3    |
| 3.3.6 Collaboration across organisations .....  | 100.00   | 1    |

|                                      |           |    |
|--------------------------------------|-----------|----|
| <b>4 RETAIN.....81.28</b>            | <b>13</b> |    |
| 4.1 Sustainability .....             | 87.04     | 6  |
| 4.1.1 Pension system.....            | 91.84     | 12 |
| 4.1.2 Social protection .....        | 74.36     | 19 |
| 4.1.3 Brain retention .....          | 94.94     | 3  |
| 4.2 Lifestyle.....                   | 75.52     | 29 |
| 4.2.1 Environmental performance..... | 72.95     | 26 |
| 4.2.2 Personal safety .....          | 88.27     | 23 |
| 4.2.3 Physician density .....        | 40.89     | 45 |
| 4.2.4 Sanitation .....               | 100.00    | 1  |

|                                                          |          |     |
|----------------------------------------------------------|----------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....80.22</b>       | <b>2</b> |     |
| 5.1 Mid-Level Skills .....                               | 70.05    | 7   |
| 5.1.1 Workforce with secondary education .....           | 75.72    | 17  |
| 5.1.2 Population with secondary education .....          | 65.62    | 20  |
| 5.1.3 Technicians and associate professionals .....      | n/a      | n/a |
| 5.1.4 Labour productivity per employee.....              | 68.83    | 9   |
| 5.2 Employability.....                                   | 90.39    | 2   |
| 5.2.1 Ease of finding skilled employees .....            | 100.00   | 1   |
| 5.2.2 Relevance of education system to the economy ..... | 85.63    | 4   |
| 5.2.3 Skills matching with secondary education.....      | 85.38    | 3   |
| 5.2.4 Skills matching with tertiary education .....      | 90.56    | 3   |

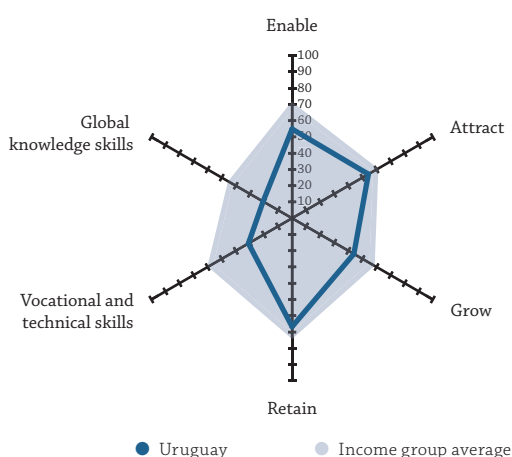
|                                                      |              |          |
|------------------------------------------------------|--------------|----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS .....</b>               | <b>62.66</b> | <b>3</b> |
| 6.1 High-Level Skills.....                           | 70.41        | 3        |
| 6.1.1 Workforce with tertiary education .....        | 54.97        | 22       |
| 6.1.2 Population with tertiary education .....       | 69.95        | 6        |
| 6.1.3 Professionals.....                             | 60.67        | 14       |
| 6.1.4 Researchers.....                               | 52.24        | 20       |
| 6.1.5 Senior officials and managers .....            | 92.86        | 3        |
| 6.1.6 Availability of scientists and engineers ..... | 91.76        | 2        |
| 6.2 Talent Impact.....                               | 54.92        | 10       |
| 6.2.1 Innovation output.....                         | 74.13        | 7        |
| 6.2.2 High-value exports .....                       | 36.22        | 16       |
| 6.2.3 New product entrepreneurial activity .....     | 59.02        | 12       |
| 6.2.4 New business density .....                     | n/a          | n/a      |
| 6.2.5 Scientific journal articles.....               | 50.29        | 21       |

# URUGUAY

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>46</b>                              |
| Income group.....          | <b>High income</b>                     |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>3.46</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                | Score        | Rank      |
|------------------------------------------------|--------------|-----------|
| <b>1 ENABLE.....</b>                           | <b>54.89</b> | <b>46</b> |
| 1.1 Regulatory Landscape.....                  | 66.55        | 32        |
| 1.1.1 Government effectiveness.....            | 58.81        | 40        |
| 1.1.2 Business-government relations.....       | 50.33        | 80        |
| 1.1.3 Political stability.....                 | 90.05        | 9         |
| 1.1.4 Regulatory quality.....                  | 59.57        | 49        |
| 1.1.5 Corruption.....                          | 73.97        | 22        |
| 1.2 Market Landscape.....                      | 43.36        | 78        |
| 1.2.1 Competition intensity.....               | 53.14        | 104       |
| 1.2.2 Ease of doing business.....              | 55.89        | 81        |
| 1.2.3 Cluster development.....                 | 22.89        | 97        |
| 1.2.4 R&D expenditure.....                     | 8.25         | 70        |
| 1.2.5 ICT infrastructure.....                  | 71.25        | 42        |
| 1.2.6 Technology utilisation.....              | 48.74        | 63        |
| 1.3 Business and Labour Landscape.....         | 54.77        | 54        |
| Labour Market                                  |              |           |
| 1.3.1 Ease of hiring.....                      | 89.00        | 27        |
| 1.3.2 Ease of redundancy.....                  | 100.00       | 1         |
| 1.3.3 Active labour market policies.....       | 50.97        | 47        |
| 1.3.4 Labour-employer cooperation.....         | 12.56        | 121       |
| Management Practice                            |              |           |
| 1.3.5 Professional management.....             | 49.32        | 61        |
| 1.3.6 Relationship of pay to productivity..... | 26.79        | 113       |
| <b>2 ATTRACT.....</b>                          | <b>54.21</b> | <b>34</b> |
| 2.1 External Openness.....                     | 43.56        | 44        |
| Attract Business                               |              |           |
| 2.1.1 FDI and technology transfer.....         | 68.09        | 36        |
| 2.1.2 Prevalence of foreign ownership.....     | 71.24        | 37        |
| Attract People                                 |              |           |
| 2.1.3 Migrant stock.....                       | 4.62         | 76        |
| 2.1.4 International students.....              | n/a          | n/a       |
| 2.1.5 Brain gain.....                          | 30.28        | 91        |
| 2.2 Internal Openness.....                     | 64.85        | 23        |
| Social Inclusion                               |              |           |
| 2.2.1 Tolerance of minorities.....             | 83.53        | 5         |
| 2.2.2 Tolerance of immigrants.....             | 75.68        | 26        |
| 2.2.3 Social mobility.....                     | 59.10        | 35        |
| Gender Equality                                |              |           |
| 2.2.4 Female graduates.....                    | 90.88        | 13        |
| 2.2.5 Gender earnings gap.....                 | 51.25        | 70        |
| 2.2.6 Leadership opportunities for women.....  | 28.66        | 89        |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>22,562.46</b> |
| GDP (US\$ billions).....               | <b>56.16</b>     |
| GTCI score.....                        | <b>45.22</b>     |
| GTCI score (income group average)..... | <b>59.93</b>     |

|                                                 | Score        | Rank      |
|-------------------------------------------------|--------------|-----------|
| <b>3 GROW.....</b>                              | <b>43.89</b> | <b>38</b> |
| 3.1 Formal Education.....                       | 35.89        | 48        |
| Enrolment                                       |              |           |
| 3.1.1 Vocational enrolment.....                 | 46.16        | 29        |
| 3.1.2 Tertiary enrolment.....                   | 45.25        | 45        |
| Quality                                         |              |           |
| 3.1.3 Tertiary education expenditure.....       | 27.15        | 40        |
| 3.1.4 Reading, maths, and science.....          | 42.78        | 47        |
| 3.1.5 University ranking.....                   | 18.13        | 56        |
| 3.2 Lifelong Learning.....                      | 46.88        | 48        |
| 3.2.1 Quality of management schools.....        | 45.15        | 53        |
| 3.2.2 Prevalence of training in firms.....      | 65.83        | 17        |
| 3.2.3 Employee development.....                 | 29.65        | 85        |
| 3.3 Access to Growth Opportunities.....         | 48.90        | 39        |
| Empowerment                                     |              |           |
| 3.3.1 Delegation of authority.....              | 42.59        | 72        |
| 3.3.2 Personal rights.....                      | 89.90        | 18        |
| Collaboration                                   |              |           |
| 3.3.3 Use of virtual social networks.....       | 76.52        | 47        |
| 3.3.4 Use of virtual professional networks..... | 34.20        | 27        |
| 3.3.5 Collaboration within organisations.....   | 25.32        | 93        |
| 3.3.6 Collaboration across organisations.....   | 24.89        | 84        |

|                                      |              |           |
|--------------------------------------|--------------|-----------|
| <b>4 RETAIN.....</b>                 | <b>66.70</b> | <b>29</b> |
| 4.1 Sustainability.....              | 61.32        | 30        |
| 4.1.1 Pension system.....            | 77.55        | 32        |
| 4.1.2 Social protection.....         | 69.85        | 23        |
| 4.1.3 Brain retention.....           | 36.57        | 80        |
| 4.2 Lifestyle.....                   | 72.07        | 37        |
| 4.2.1 Environmental performance..... | 62.04        | 42        |
| 4.2.2 Personal safety.....           | 67.68        | 56        |
| 4.2.3 Physician density.....         | 62.85        | 13        |
| 4.2.4 Sanitation.....                | 95.70        | 48        |

|                                                         |              |           |
|---------------------------------------------------------|--------------|-----------|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....</b>           | <b>31.02</b> | <b>86</b> |
| 5.1 Mid-Level Skills.....                               | 23.67        | 91        |
| 5.1.1 Workforce with secondary education.....           | 14.17        | 102       |
| 5.1.2 Population with secondary education.....          | 23.11        | 79        |
| 5.1.3 Technicians and associate professionals.....      | 32.14        | 66        |
| 5.1.4 Labour productivity per employee.....             | 25.27        | 54        |
| 5.2 Employability.....                                  | 38.36        | 73        |
| 5.2.1 Ease of finding skilled employees.....            | 43.34        | 71        |
| 5.2.2 Relevance of education system to the economy..... | 11.82        | 114       |
| 5.2.3 Skills matching with secondary education.....     | 35.78        | 79        |
| 5.2.4 Skills matching with tertiary education.....      | 62.52        | 33        |

|                                                     |              |           |
|-----------------------------------------------------|--------------|-----------|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....</b>               | <b>20.61</b> | <b>73</b> |
| 6.1 High-Level Skills.....                          | 19.40        | 85        |
| 6.1.1 Workforce with tertiary education.....        | 19.09        | 84        |
| 6.1.2 Population with tertiary education.....       | 19.19        | 75        |
| 6.1.3 Professionals.....                            | 30.62        | 55        |
| 6.1.4 Researchers.....                              | 7.74         | 59        |
| 6.1.5 Senior officials and managers.....            | 13.69        | 74        |
| 6.1.6 Availability of scientists and engineers..... | 26.11        | 98        |
| 6.2 Talent Impact.....                              | 21.81        | 58        |
| 6.2.1 Innovation output.....                        | 31.86        | 58        |
| 6.2.2 High-value exports.....                       | 17.61        | 48        |
| 6.2.3 New product entrepreneurial activity.....     | 40.31        | 40        |
| 6.2.4 New business density.....                     | 9.93         | 48        |
| 6.2.5 Scientific journal articles.....              | 9.34         | 53        |

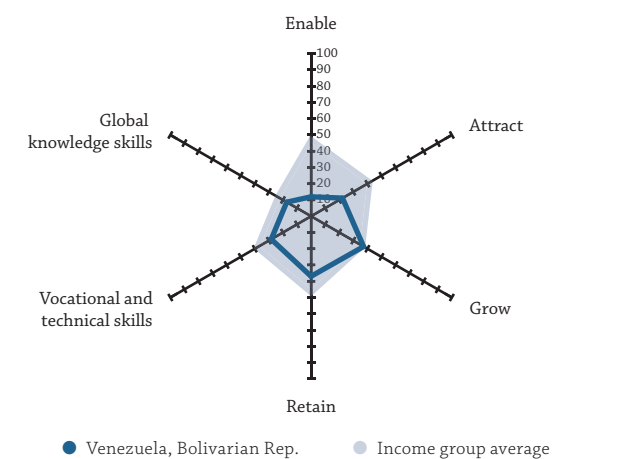
# VENEZUELA, BOLIVARIAN REP.

Key Indicators

|                            |                                        |
|----------------------------|----------------------------------------|
| Rank (out of 125).....     | <b>112</b>                             |
| Income group.....          | <b>Upper-middle income</b>             |
| Regional group.....        | <b>Latin America and the Caribbean</b> |
| Population (millions)..... | <b>31.98</b>                           |

|                                        |                  |
|----------------------------------------|------------------|
| GDP per capita (PPP US\$).....         | <b>17,639.89</b> |
| GDP (US\$ billions).....               | <b>482.36</b>    |
| GTCI score.....                        | <b>25.70</b>     |
| GTCI score (income group average)..... | <b>39.16</b>     |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE.....11.97 125</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 11.33 | 123  |
| 1.1.1 Government effectiveness.....            | 13.15 | 121  |
| 1.1.2 Business-government relations.....       | 0.00  | 124  |
| 1.1.3 Political stability.....                 | 40.74 | 109  |
| 1.1.4 Regulatory quality.....                  | 0.00  | 125  |
| 1.1.5 Corruption.....                          | 2.74  | 124  |
| 1.2 Market Landscape.....                      | 12.35 | 125  |
| 1.2.1 Competition intensity.....               | 0.00  | 125  |
| 1.2.2 Ease of doing business.....              | 0.00  | 125  |
| 1.2.3 Cluster development.....                 | 0.00  | 125  |
| 1.2.4 R&D expenditure.....                     | 5.45  | 83   |
| 1.2.5 ICT infrastructure.....                  | 44.15 | 77   |
| 1.2.6 Technology utilisation.....              | 24.51 | 116  |
| 1.3 Business and Labour Landscape.....         | 12.25 | 125  |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring.....                      | 0.00  | 121  |
| 1.3.2 Ease of redundancy.....                  | 0.00  | 122  |
| 1.3.3 Active labour market policies.....       | 9.43  | 122  |
| 1.3.4 Labour-employer cooperation.....         | 16.31 | 117  |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 47.75 | 64   |
| 1.3.6 Relationship of pay to productivity..... | 0.00  | 125  |
| <b>2 ATTRACT.....22.32 124</b>                 |       |      |
| 2.1 External Openness.....                     | 7.71  | 125  |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 4.89  | 124  |
| 2.1.2 Prevalence of foreign ownership.....     | 24.27 | 120  |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 9.08  | 57   |
| 2.1.4 International students.....              | 0.32  | 102  |
| 2.1.5 Brain gain.....                          | 0.00  | 125  |
| 2.2 Internal Openness.....                     | 36.93 | 111  |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities.....             | 28.24 | 84   |
| 2.2.2 Tolerance of immigrants.....             | 62.16 | 52   |
| 2.2.3 Social mobility.....                     | 0.00  | 125  |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates.....                    | n/a   | n/a  |
| 2.2.5 Gender earnings gap.....                 | 54.60 | 58   |
| 2.2.6 Leadership opportunities for women.....  | 39.67 | 64   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW.....37.30 60</b>                      |       |      |
| 3.1 Formal Education.....                       | 30.64 | 59   |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment.....                 | 9.18  | 89   |
| 3.1.2 Tertiary enrolment.....                   | 62.95 | 18   |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | 36.58 | 18   |
| 3.1.4 Reading, maths, and science.....          | n/a   | n/a  |
| 3.1.5 University ranking.....                   | 13.87 | 65   |
| 3.2 Lifelong Learning.....                      | 45.45 | 55   |
| 3.2.1 Quality of management schools.....        | 41.57 | 64   |
| 3.2.2 Prevalence of training in firms.....      | 69.39 | 11   |
| 3.2.3 Employee development.....                 | 25.39 | 95   |
| 3.3 Access to Growth Opportunities.....         | 35.81 | 83   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 46.64 | 62   |
| 3.3.2 Personal rights.....                      | 18.49 | 106  |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 69.92 | 68   |
| 3.3.4 Use of virtual professional networks..... | 18.63 | 54   |
| 3.3.5 Collaboration within organisations.....   | 27.23 | 86   |
| 3.3.6 Collaboration across organisations.....   | 33.91 | 58   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN.....36.96 95</b>         |       |     |
| 4.1 Sustainability.....              | 11.93 | 123 |
| 4.1.1 Pension system.....            | 32.65 | 61  |
| 4.1.2 Social protection.....         | 3.14  | 122 |
| 4.1.3 Brain retention.....           | 0.00  | 125 |
| 4.2 Lifestyle.....                   | 61.99 | 56  |
| 4.2.1 Environmental performance..... | 60.78 | 46  |
| 4.2.2 Personal safety.....           | n/a   | n/a |
| 4.2.3 Physician density.....         | 30.58 | 59  |
| 4.2.4 Sanitation.....                | 94.62 | 53  |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS.....28.33 96</b>   |       |     |
| 5.1 Mid-Level Skills.....                               | 28.73 | 81  |
| 5.1.1 Workforce with secondary education.....           | 32.70 | 78  |
| 5.1.2 Population with secondary education.....          | 35.38 | 58  |
| 5.1.3 Technicians and associate professionals.....      | 31.70 | 68  |
| 5.1.4 Labour productivity per employee.....             | 15.14 | 72  |
| 5.2 Employability.....                                  | 27.93 | 104 |
| 5.2.1 Ease of finding skilled employees.....            | 25.37 | 110 |
| 5.2.2 Relevance of education system to the economy..... | 8.27  | 118 |
| 5.2.3 Skills matching with secondary education.....     | 29.13 | 99  |
| 5.2.4 Skills matching with tertiary education.....      | 48.95 | 61  |

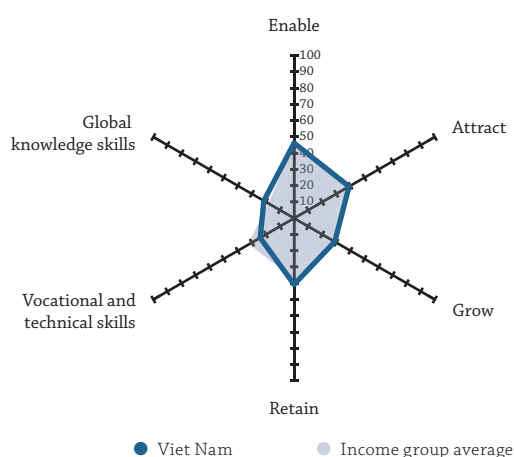
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|-----------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS.....17.33 84</b>       |       |     |
| 6.1 High-Level Skills.....                          | 28.46 | 62  |
| 6.1.1 Workforce with tertiary education.....        | 46.06 | 37  |
| 6.1.2 Population with tertiary education.....       | 48.39 | 28  |
| 6.1.3 Professionals.....                            | 40.45 | 42  |
| 6.1.4 Researchers.....                              | 2.83  | 72  |
| 6.1.5 Senior officials and managers.....            | 23.81 | 57  |
| 6.1.6 Availability of scientists and engineers..... | 9.20  | 120 |
| 6.2 Talent Impact.....                              | 6.21  | 111 |
| 6.2.1 Innovation output.....                        | n/a   | n/a |
| 6.2.2 High-value exports.....                       | 2.05  | 106 |
| 6.2.3 New product entrepreneurial activity.....     | 15.54 | 75  |
| 6.2.4 New business density.....                     | n/a   | n/a |
| 6.2.5 Scientific journal articles.....              | 1.03  | 93  |

# VIET NAM

Key Indicators

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Rank (out of 125).....     | <b>92</b>                                     |
| Income group.....          | <b>Lower-middle income</b>                    |
| Regional group.....        | <b>Eastern, Southeastern Asia and Oceania</b> |
| Population (millions)..... | <b>95.54</b>                                  |

GTCI 2019 Country Profile by Pillar



|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>1 ENABLE..... 46.23 80</b>                           |       |      |
| 1.1 Regulatory Landscape..... 46.97 72                  |       |      |
| 1.1.1 Government effectiveness..... 45.41 68            |       |      |
| 1.1.2 Business-government relations..... 57.84 65       |       |      |
| 1.1.3 Political stability..... 68.52 56                 |       |      |
| 1.1.4 Regulatory quality..... 37.08 95                  |       |      |
| 1.1.5 Corruption..... 26.03 83                          |       |      |
| 1.2 Market Landscape..... 41.89 81                      |       |      |
| 1.2.1 Competition intensity..... 54.44 101              |       |      |
| 1.2.2 Ease of doing business..... 66.56 62              |       |      |
| 1.2.3 Cluster development..... 38.63 64                 |       |      |
| 1.2.4 R&D expenditure..... 10.06 65                     |       |      |
| 1.2.5 ICT infrastructure..... 39.06 86                  |       |      |
| 1.2.6 Technology utilisation..... 42.56 87              |       |      |
| 1.3 Business and Labour Landscape..... 49.82 71         |       |      |
| Labour Market                                           |       |      |
| 1.3.1 Ease of hiring..... 77.67 46                      |       |      |
| 1.3.2 Ease of redundancy..... 62.50 64                  |       |      |
| 1.3.3 Active labour market policies..... 42.61 60       |       |      |
| 1.3.4 Labour-employer cooperation..... 36.00 79         |       |      |
| Management Practice                                     |       |      |
| 1.3.5 Professional management..... 29.95 103            |       |      |
| 1.3.6 Relationship of pay to productivity..... 50.17 62 |       |      |
| <b>2 ATTRACT..... 39.06 91</b>                          |       |      |
| 2.1 External Openness..... 29.12 98                     |       |      |
| Attract Business                                        |       |      |
| 2.1.1 FDI and technology transfer..... 50.23 83         |       |      |
| 2.1.2 Prevalence of foreign ownership..... 49.91 89     |       |      |
| Attract People                                          |       |      |
| 2.1.3 Migrant stock..... 0.02 124                       |       |      |
| 2.1.4 International students..... 1.09 95               |       |      |
| 2.1.5 Brain gain..... 44.34 58                          |       |      |
| 2.2 Internal Openness..... 49.00 66                     |       |      |
| Social Inclusion                                        |       |      |
| 2.2.1 Tolerance of minorities..... 42.35 63             |       |      |
| 2.2.2 Tolerance of immigrants..... 37.84 91             |       |      |
| 2.2.3 Social mobility..... 40.29 90                     |       |      |
| Gender Equality                                         |       |      |
| 2.2.4 Female graduates..... 64.78 73                    |       |      |
| 2.2.5 Gender earnings gap..... 78.61 8                  |       |      |
| 2.2.6 Leadership opportunities for women..... 30.13 85  |       |      |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>6,775.83</b> |
| GDP (US\$ billions).....               | <b>223.86</b>   |
| GTCI score.....                        | <b>33.41</b>    |
| GTCI score (income group average)..... | <b>31.64</b>    |

|                                                          | Score | Rank |
|----------------------------------------------------------|-------|------|
| <b>3 GROW..... 28.89 89</b>                              |       |      |
| 3.1 Formal Education..... 33.43 52                       |       |      |
| Enrolment                                                |       |      |
| 3.1.1 Vocational enrolment..... n/a n/a                  |       |      |
| 3.1.2 Tertiary enrolment..... 22.70 79                   |       |      |
| Quality                                                  |       |      |
| 3.1.3 Tertiary education expenditure..... 19.31 66       |       |      |
| 3.1.4 Reading, maths, and science..... 76.65 19          |       |      |
| 3.1.5 University ranking..... 15.05 60                   |       |      |
| 3.2 Lifelong Learning..... 26.53 110                     |       |      |
| 3.2.1 Quality of management schools..... 17.52 114       |       |      |
| 3.2.2 Prevalence of training in firms..... 24.80 68      |       |      |
| 3.2.3 Employee development..... 37.27 65                 |       |      |
| 3.3 Access to Growth Opportunities..... 26.70 112        |       |      |
| Empowerment                                              |       |      |
| 3.3.1 Delegation of authority..... 35.64 89              |       |      |
| 3.3.2 Personal rights..... 10.28 118                     |       |      |
| Collaboration                                            |       |      |
| 3.3.3 Use of virtual social networks..... 64.77 83       |       |      |
| 3.3.4 Use of virtual professional networks..... 1.70 107 |       |      |
| 3.3.5 Collaboration within organisations..... 19.85 103  |       |      |
| 3.3.6 Collaboration across organisations..... 27.99 74   |       |      |

|                                                |  |  |
|------------------------------------------------|--|--|
| <b>4 RETAIN..... 40.73 85</b>                  |  |  |
| 4.1 Sustainability..... 33.70 76               |  |  |
| 4.1.1 Pension system..... 17.35 81             |  |  |
| 4.1.2 Social protection..... 40.34 60          |  |  |
| 4.1.3 Brain retention..... 43.40 58            |  |  |
| 4.2 Lifestyle..... 47.77 89                    |  |  |
| 4.2.1 Environmental performance..... 32.56 102 |  |  |
| 4.2.2 Personal safety..... 69.31 53            |  |  |
| 4.2.3 Physician density..... 12.87 90          |  |  |
| 4.2.4 Sanitation..... 76.34 85                 |  |  |

|                                                                  |  |  |
|------------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 24.09 109</b>          |  |  |
| 5.1 Mid-Level Skills..... 15.57 103                              |  |  |
| 5.1.1 Workforce with secondary education..... 24.60 88           |  |  |
| 5.1.2 Population with secondary education..... 19.26 85          |  |  |
| 5.1.3 Technicians and associate professionals..... 12.95 97      |  |  |
| 5.1.4 Labour productivity per employee..... 5.46 88              |  |  |
| 5.2 Employability..... 32.61 86                                  |  |  |
| 5.2.1 Ease of finding skilled employees..... 36.64 87            |  |  |
| 5.2.2 Relevance of education system to the economy..... 35.32 66 |  |  |
| 5.2.3 Skills matching with secondary education..... 30.48 97     |  |  |
| 5.2.4 Skills matching with tertiary education..... 28.00 103     |  |  |

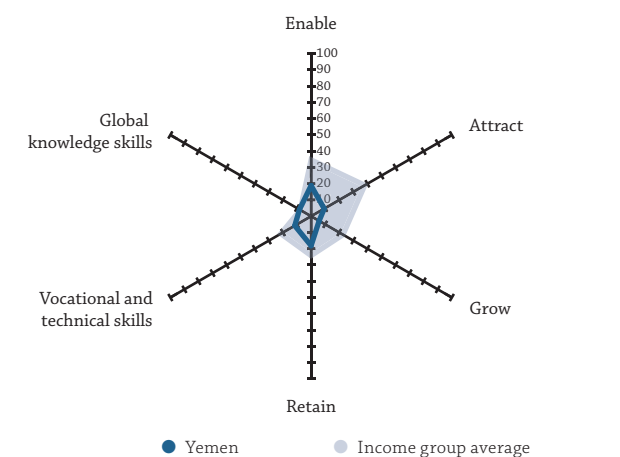
|                                                              |  |  |
|--------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 21.46 69</b>               |  |  |
| 6.1 High-Level Skills..... 15.43 96                          |  |  |
| 6.1.1 Workforce with tertiary education..... 17.69 88        |  |  |
| 6.1.2 Population with tertiary education..... 9.51 92        |  |  |
| 6.1.3 Professionals..... 17.70 83                            |  |  |
| 6.1.4 Researchers..... 8.07 57                               |  |  |
| 6.1.5 Senior officials and managers..... 4.76 106            |  |  |
| 6.1.6 Availability of scientists and engineers..... 34.87 76 |  |  |
| 6.2 Talent Impact..... 27.50 46                              |  |  |
| 6.2.1 Innovation output..... 43.56 40                        |  |  |
| 6.2.2 High-value exports..... 48.87 8                        |  |  |
| 6.2.3 New product entrepreneurial activity..... 16.35 73     |  |  |
| 6.2.4 New business density..... n/a n/a                      |  |  |
| 6.2.5 Scientific journal articles..... 1.20 90               |  |  |

# YEMEN

Key Indicators

|                            |                                         |
|----------------------------|-----------------------------------------|
| Rank (out of 125).....     | <b>125</b>                              |
| Income group.....          | <b>Low income</b>                       |
| Regional group.....        | <b>Northern Africa and Western Asia</b> |
| Population (millions)..... | <b>28.25</b>                            |

GTCI 2019 Country Profile by Pillar



|                                                          | Score | Rank |
|----------------------------------------------------------|-------|------|
| <b>1 ENABLE..... 18.86 123</b>                           |       |      |
| 1.1 Regulatory Landscape..... 8.98 125                   |       |      |
| 1.1.1 Government effectiveness..... 0.00 125             |       |      |
| 1.1.2 Business-government relations..... 32.45 115       |       |      |
| 1.1.3 Political stability..... 0.00 125                  |       |      |
| 1.1.4 Regulatory quality..... 12.44 123                  |       |      |
| 1.1.5 Corruption..... 0.00 125                           |       |      |
| 1.2 Market Landscape..... 13.68 124                      |       |      |
| 1.2.1 Competition intensity..... 37.95 121               |       |      |
| 1.2.2 Ease of doing business..... 3.83 124               |       |      |
| 1.2.3 Cluster development..... 12.03 119                 |       |      |
| 1.2.4 R&D expenditure..... n/a n/a                       |       |      |
| 1.2.5 ICT infrastructure..... n/a n/a                    |       |      |
| 1.2.6 Technology utilisation..... 0.93 124               |       |      |
| 1.3 Business and Labour Landscape..... 33.92 114         |       |      |
| Labour Market                                            |       |      |
| 1.3.1 Ease of hiring..... 89.00 27                       |       |      |
| 1.3.2 Ease of redundancy..... 62.50 64                   |       |      |
| 1.3.3 Active labour market policies..... 6.07 123        |       |      |
| 1.3.4 Labour-employer cooperation..... 21.99 107         |       |      |
| Management Practice                                      |       |      |
| 1.3.5 Professional management..... 0.00 125              |       |      |
| 1.3.6 Relationship of pay to productivity..... 23.99 117 |       |      |
| <b>2 ATTRACT..... 9.31 125</b>                           |       |      |
| 2.1 External Openness..... 8.07 124                      |       |      |
| Attract Business                                         |       |      |
| 2.1.1 FDI and technology transfer..... 0.00 125          |       |      |
| 2.1.2 Prevalence of foreign ownership..... 0.00 125      |       |      |
| Attract People                                           |       |      |
| 2.1.3 Migrant stock..... 2.67 93                         |       |      |
| 2.1.4 International students..... 21.36 43               |       |      |
| 2.1.5 Brain gain..... 16.35 117                          |       |      |
| 2.2 Internal Openness..... 10.55 125                     |       |      |
| Social Inclusion                                         |       |      |
| 2.2.1 Tolerance of minorities..... 3.53 120              |       |      |
| 2.2.2 Tolerance of immigrants..... 16.22 112             |       |      |
| 2.2.3 Social mobility..... 18.62 124                     |       |      |
| Gender Equality                                          |       |      |
| 2.2.4 Female graduates..... 12.78 103                    |       |      |
| 2.2.5 Gender earnings gap..... 12.19 112                 |       |      |
| 2.2.6 Leadership opportunities for women..... 0.00 125   |       |      |

|                                        |                 |
|----------------------------------------|-----------------|
| GDP per capita (PPP US\$).....         | <b>2,507.47</b> |
| GDP (US\$ billions).....               | <b>27.32</b>    |
| GTCI score.....                        | <b>11.97</b>    |
| GTCI score (income group average)..... | <b>24.81</b>    |

|                                                          | Score | Rank |
|----------------------------------------------------------|-------|------|
| <b>3 GROW..... 5.71 125</b>                              |       |      |
| 3.1 Formal Education..... 2.68 124                       |       |      |
| Enrolment                                                |       |      |
| 3.1.1 Vocational enrolment..... 0.44 111                 |       |      |
| 3.1.2 Tertiary enrolment..... 7.60 101                   |       |      |
| Quality                                                  |       |      |
| 3.1.3 Tertiary education expenditure..... n/a n/a        |       |      |
| 3.1.4 Reading, maths, and science..... n/a n/a           |       |      |
| 3.1.5 University ranking..... 0.00 78                    |       |      |
| 3.2 Lifelong Learning..... 4.79 125                      |       |      |
| 3.2.1 Quality of management schools..... 0.00 125        |       |      |
| 3.2.2 Prevalence of training in firms..... 14.38 83      |       |      |
| 3.2.3 Employee development..... 0.00 125                 |       |      |
| 3.3 Access to Growth Opportunities..... 9.66 125         |       |      |
| Empowerment                                              |       |      |
| 3.3.1 Delegation of authority..... 0.00 125              |       |      |
| 3.3.2 Personal rights..... 13.82 113                     |       |      |
| Collaboration                                            |       |      |
| 3.3.3 Use of virtual social networks..... 43.16 114      |       |      |
| 3.3.4 Use of virtual professional networks..... 1.00 112 |       |      |
| 3.3.5 Collaboration within organisations..... 0.00 125   |       |      |
| 3.3.6 Collaboration across organisations..... 0.00 125   |       |      |

|                                              |  |  |
|----------------------------------------------|--|--|
| <b>4 RETAIN..... 18.11 122</b>               |  |  |
| 4.1 Sustainability..... 6.46 125             |  |  |
| 4.1.1 Pension system..... 8.16 88            |  |  |
| 4.1.2 Social protection..... 0.00 125        |  |  |
| 4.1.3 Brain retention..... 11.20 119         |  |  |
| 4.2 Lifestyle..... 29.76 107                 |  |  |
| 4.2.1 Environmental performance..... n/a n/a |  |  |
| 4.2.2 Personal safety..... 27.60 114         |  |  |
| 4.2.3 Physician density..... 4.70 104        |  |  |
| 4.2.4 Sanitation..... 56.99 98               |  |  |

|                                                                  |  |  |
|------------------------------------------------------------------|--|--|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 11.60 124</b>          |  |  |
| 5.1 Mid-Level Skills..... 16.51 99                               |  |  |
| 5.1.1 Workforce with secondary education..... 29.11 80           |  |  |
| 5.1.2 Population with secondary education..... n/a n/a           |  |  |
| 5.1.3 Technicians and associate professionals..... 14.73 94      |  |  |
| 5.1.4 Labour productivity per employee..... 5.69 87              |  |  |
| 5.2 Employability..... 6.70 125                                  |  |  |
| 5.2.1 Ease of finding skilled employees..... 23.48 114           |  |  |
| 5.2.2 Relevance of education system to the economy..... 1.21 123 |  |  |
| 5.2.3 Skills matching with secondary education..... 0.00 125     |  |  |
| 5.2.4 Skills matching with tertiary education..... 2.10 124      |  |  |

|                                                               |  |  |
|---------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 8.25 112</b>                |  |  |
| 6.1 High-Level Skills..... 13.62 99                           |  |  |
| 6.1.1 Workforce with tertiary education..... 11.28 98         |  |  |
| 6.1.2 Population with tertiary education..... n/a n/a         |  |  |
| 6.1.3 Professionals..... 18.82 81                             |  |  |
| 6.1.4 Researchers..... n/a n/a                                |  |  |
| 6.1.5 Senior officials and managers..... 8.33 94              |  |  |
| 6.1.6 Availability of scientists and engineers..... 16.03 114 |  |  |
| 6.2 Talent Impact..... 2.88 119                               |  |  |
| 6.2.1 Innovation output..... 0.00 115                         |  |  |
| 6.2.2 High-value exports..... 8.52 74                         |  |  |
| 6.2.3 New product entrepreneurial activity..... n/a n/a       |  |  |
| 6.2.4 New business density..... n/a n/a                       |  |  |
| 6.2.5 Scientific journal articles..... 0.12 119               |  |  |

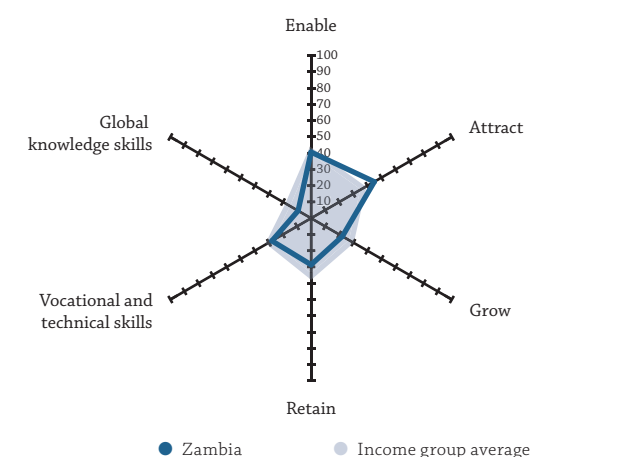
# ZAMBIA

Key Indicators

|                            |                            |
|----------------------------|----------------------------|
| Rank (out of 125).....     | <b>104</b>                 |
| Income group.....          | <b>Lower-middle income</b> |
| Regional group.....        | <b>Sub-Saharan Africa</b>  |
| Population (millions)..... | <b>17.09</b>               |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>4,050.26</b> |
| GDP (US\$ billions) .....               | <b>25.81</b>    |
| GTCI score.....                         | <b>28.91</b>    |
| GTCI score (income group average) ..... | <b>31.64</b>    |

GTCI 2019 Country Profile by Pillar



|                                                | Score | Rank |
|------------------------------------------------|-------|------|
| <b>1 ENABLE..... 40.66 93</b>                  |       |      |
| 1.1 Regulatory Landscape.....                  | 46.62 | 76   |
| 1.1.1 Government effectiveness .....           | 28.78 | 102  |
| 1.1.2 Business-government relations .....      | 70.42 | 28   |
| 1.1.3 Political stability .....                | 68.75 | 54   |
| 1.1.4 Regulatory quality .....                 | 36.36 | 99   |
| 1.1.5 Corruption .....                         | 28.77 | 73   |
| 1.2 Market Landscape.....                      | 34.59 | 103  |
| 1.2.1 Competition intensity .....              | 61.88 | 77   |
| 1.2.2 Ease of doing business .....             | 60.40 | 77   |
| 1.2.3 Cluster development .....                | 31.27 | 83   |
| 1.2.4 R&D expenditure .....                    | 6.21  | 78   |
| 1.2.5 ICT infrastructure .....                 | 14.89 | 112  |
| 1.2.6 Technology utilisation .....             | 32.90 | 107  |
| 1.3 Business and Labour Landscape.....         | 40.78 | 97   |
| Labour Market                                  |       |      |
| 1.3.1 Ease of hiring .....                     | 33.33 | 107  |
| 1.3.2 Ease of redundancy .....                 | 75.00 | 45   |
| 1.3.3 Active labour market policies.....       | 26.56 | 95   |
| 1.3.4 Labour-employer cooperation .....        | 30.77 | 90   |
| Management Practice                            |       |      |
| 1.3.5 Professional management.....             | 41.08 | 74   |
| 1.3.6 Relationship of pay to productivity..... | 37.91 | 87   |
| <b>2 ATTRACT..... 44.91 57</b>                 |       |      |
| 2.1 External Openness .....                    | 43.15 | 45   |
| Attract Business                               |       |      |
| 2.1.1 FDI and technology transfer.....         | 46.30 | 90   |
| 2.1.2 Prevalence of foreign ownership .....    | 79.50 | 23   |
| Attract People                                 |       |      |
| 2.1.3 Migrant stock.....                       | 1.75  | 99   |
| 2.1.4 International students.....              | n/a   | n/a  |
| 2.1.5 Brain gain.....                          | 45.04 | 56   |
| 2.2 Internal Openness.....                     | 46.67 | 75   |
| Social Inclusion                               |       |      |
| 2.2.1 Tolerance of minorities .....            | 51.76 | 49   |
| 2.2.2 Tolerance of immigrants.....             | 52.70 | 67   |
| 2.2.3 Social mobility.....                     | 44.95 | 78   |
| Gender Equality                                |       |      |
| 2.2.4 Female graduates .....                   | n/a   | n/a  |
| 2.2.5 Gender earnings gap .....                | n/a   | n/a  |
| 2.2.6 Leadership opportunities for women.....  | 37.25 | 72   |

|                                                 | Score | Rank |
|-------------------------------------------------|-------|------|
| <b>3 GROW..... 22.24 112</b>                    |       |      |
| 3.1 Formal Education.....                       | 1.34  | 125  |
| Enrolment                                       |       |      |
| 3.1.1 Vocational enrolment .....                | n/a   | n/a  |
| 3.1.2 Tertiary enrolment.....                   | 2.68  | 115  |
| Quality                                         |       |      |
| 3.1.3 Tertiary education expenditure.....       | n/a   | n/a  |
| 3.1.4 Reading, maths, and science .....         | n/a   | n/a  |
| 3.1.5 University ranking .....                  | 0.00  | 78   |
| 3.2 Lifelong Learning.....                      | 31.27 | 90   |
| 3.2.1 Quality of management schools.....        | 30.96 | 90   |
| 3.2.2 Prevalence of training in firms .....     | 32.72 | 53   |
| 3.2.3 Employee development.....                 | 30.12 | 84   |
| 3.3 Access to Growth Opportunities .....        | 34.13 | 92   |
| Empowerment                                     |       |      |
| 3.3.1 Delegation of authority.....              | 49.88 | 52   |
| 3.3.2 Personal rights.....                      | 41.63 | 86   |
| Collaboration                                   |       |      |
| 3.3.3 Use of virtual social networks.....       | 56.64 | 97   |
| 3.3.4 Use of virtual professional networks..... | 3.41  | 99   |
| 3.3.5 Collaboration within organisations .....  | 26.64 | 89   |
| 3.3.6 Collaboration across organisations .....  | 26.55 | 79   |

|                                      |       |     |
|--------------------------------------|-------|-----|
| <b>4 RETAIN..... 28.61 107</b>       |       |     |
| 4.1 Sustainability .....             | 27.28 | 99  |
| 4.1.1 Pension system.....            | 9.18  | 87  |
| 4.1.2 Social protection .....        | 35.27 | 73  |
| 4.1.3 Brain retention .....          | 37.40 | 75  |
| 4.2 Lifestyle .....                  | 29.93 | 105 |
| 4.2.1 Environmental performance..... | 39.24 | 92  |
| 4.2.2 Personal safety .....          | 53.51 | 81  |
| 4.2.3 Physician density .....        | 1.17  | 112 |
| 4.2.4 Sanitation .....               | 25.81 | 115 |

|                                                          |       |     |
|----------------------------------------------------------|-------|-----|
| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 27.84 99</b>   |       |     |
| 5.1 Mid-Level Skills .....                               | 7.06  | 114 |
| 5.1.1 Workforce with secondary education .....           | n/a   | n/a |
| 5.1.2 Population with secondary education .....          | n/a   | n/a |
| 5.1.3 Technicians and associate professionals .....      | 7.59  | 106 |
| 5.1.4 Labour productivity per employee.....              | 6.53  | 86  |
| 5.2 Employability.....                                   | 48.62 | 49  |
| 5.2.1 Ease of finding skilled employees .....            | 64.88 | 34  |
| 5.2.2 Relevance of education system to the economy ..... | 38.31 | 58  |
| 5.2.3 Skills matching with secondary education.....      | 39.39 | 70  |
| 5.2.4 Skills matching with tertiary education .....      | 51.88 | 49  |

|                                                      |       |     |
|------------------------------------------------------|-------|-----|
| <b>6 GLOBAL KNOWLEDGE SKILLS ..... 9.22 109</b>      |       |     |
| 6.1 High-Level Skills .....                          | 12.78 | 104 |
| 6.1.1 Workforce with tertiary education .....        | n/a   | n/a |
| 6.1.2 Population with tertiary education .....       | n/a   | n/a |
| 6.1.3 Professionals.....                             | 10.96 | 100 |
| 6.1.4 Researchers.....                               | 0.41  | 90  |
| 6.1.5 Senior officials and managers .....            | 4.76  | 106 |
| 6.1.6 Availability of scientists and engineers ..... | 34.99 | 75  |
| 6.2 Talent Impact.....                               | 5.65  | 114 |
| 6.2.1 Innovation output.....                         | 8.22  | 113 |
| 6.2.2 High-value exports .....                       | 9.56  | 71  |
| 6.2.3 New product entrepreneurial activity .....     | 4.76  | 83  |
| 6.2.4 New business density .....                     | 5.35  | 66  |
| 6.2.5 Scientific journal articles.....               | 0.38  | 108 |



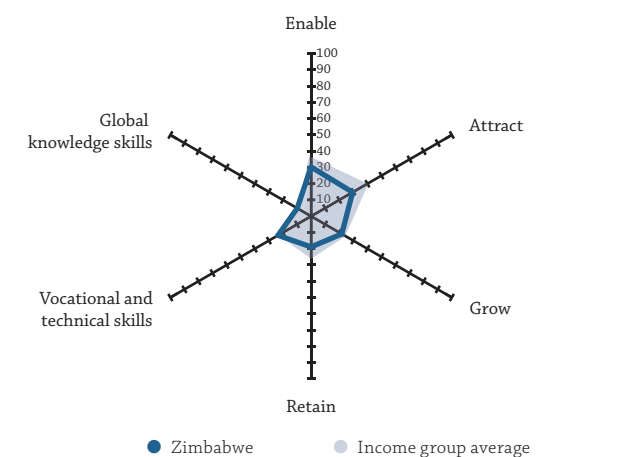
# ZIMBABWE

Key Indicators

|                            |                           |
|----------------------------|---------------------------|
| Rank (out of 125).....     | <b>121</b>                |
| Income group.....          | <b>Low income</b>         |
| Regional group.....        | <b>Sub-Saharan Africa</b> |
| Population (millions)..... | <b>16.53</b>              |

|                                         |                 |
|-----------------------------------------|-----------------|
| GDP per capita (PPP US\$) .....         | <b>2,085.68</b> |
| GDP (US\$ billions) .....               | <b>17.85</b>    |
| GTCI score.....                         | <b>22.31</b>    |
| GTCI score (income group average) ..... | <b>24.81</b>    |

GTCI 2019 Country Profile by Pillar



|                                                          | Score | Rank |
|----------------------------------------------------------|-------|------|
| <b>1 ENABLE..... 30.29 118</b>                           |       |      |
| 1.1 Regulatory Landscape..... 23.15 121                  |       |      |
| 1.1.1 Government effectiveness..... 16.38 119            |       |      |
| 1.1.2 Business-government relations..... 34.00 113       |       |      |
| 1.1.3 Political stability..... 50.46 93                  |       |      |
| 1.1.4 Regulatory quality..... 6.70 124                   |       |      |
| 1.1.5 Corruption..... 8.22 119                           |       |      |
| 1.2 Market Landscape..... 27.89 116                      |       |      |
| 1.2.1 Competition intensity..... 55.15 96                |       |      |
| 1.2.2 Ease of doing business..... 31.61 115              |       |      |
| 1.2.3 Cluster development..... 2.73 123                  |       |      |
| 1.2.4 R&D expenditure..... n/a n/a                       |       |      |
| 1.2.5 ICT infrastructure..... 21.88 107                  |       |      |
| 1.2.6 Technology utilisation..... 28.10 114              |       |      |
| 1.3 Business and Labour Landscape..... 39.81 99          |       |      |
| Labour Market                                            |       |      |
| 1.3.1 Ease of hiring..... 66.67 58                       |       |      |
| 1.3.2 Ease of redundancy..... 62.50 64                   |       |      |
| 1.3.3 Active labour market policies..... 1.09 124        |       |      |
| 1.3.4 Labour-employer cooperation..... 26.32 102         |       |      |
| Management Practice                                      |       |      |
| 1.3.5 Professional management..... 56.22 38              |       |      |
| 1.3.6 Relationship of pay to productivity..... 26.09 115 |       |      |
| <b>2 ATTRACT..... 29.51 119</b>                          |       |      |
| 2.1 External Openness..... 17.62 121                     |       |      |
| Attract Business                                         |       |      |
| 2.1.1 FDI and technology transfer..... 19.06 123         |       |      |
| 2.1.2 Prevalence of foreign ownership..... 42.41 100     |       |      |
| Attract People                                           |       |      |
| 2.1.3 Migrant stock..... 4.91 73                         |       |      |
| 2.1.4 International students..... 2.22 84                |       |      |
| 2.1.5 Brain gain..... 19.53 115                          |       |      |
| 2.2 Internal Openness..... 41.39 101                     |       |      |
| Social Inclusion                                         |       |      |
| 2.2.1 Tolerance of minorities..... 27.06 86              |       |      |
| 2.2.2 Tolerance of immigrants..... 54.05 64              |       |      |
| 2.2.3 Social mobility..... 33.67 110                     |       |      |
| Gender Equality                                          |       |      |
| 2.2.4 Female graduates..... 33.57 95                     |       |      |
| 2.2.5 Gender earnings gap..... 60.45 36                  |       |      |
| 2.2.6 Leadership opportunities for women..... 39.50 66   |       |      |

|                                                         | Score | Rank |
|---------------------------------------------------------|-------|------|
| <b>3 GROW..... 21.81 113</b>                            |       |      |
| 3.1 Formal Education..... 11.98 102                     |       |      |
| Enrolment                                               |       |      |
| 3.1.1 Vocational enrolment..... n/a n/a                 |       |      |
| 3.1.2 Tertiary enrolment..... 6.37 105                  |       |      |
| Quality                                                 |       |      |
| 3.1.3 Tertiary education expenditure..... 29.58 33      |       |      |
| 3.1.4 Reading, maths, and science..... n/a n/a          |       |      |
| 3.1.5 University ranking..... 0.00 78                   |       |      |
| 3.2 Lifelong Learning..... 30.33 95                     |       |      |
| 3.2.1 Quality of management schools..... 30.42 93       |       |      |
| 3.2.2 Prevalence of training in firms..... 30.34 56     |       |      |
| 3.2.3 Employee development..... 30.22 82                |       |      |
| 3.3 Access to Growth Opportunities..... 23.13 116       |       |      |
| Empowerment                                             |       |      |
| 3.3.1 Delegation of authority..... 48.76 57             |       |      |
| 3.3.2 Personal rights..... 13.16 114                    |       |      |
| Collaboration                                           |       |      |
| 3.3.3 Use of virtual social networks..... 51.97 105     |       |      |
| 3.3.4 Use of virtual professional networks..... 4.46 92 |       |      |
| 3.3.5 Collaboration within organisations..... 20.18 102 |       |      |
| 3.3.6 Collaboration across organisations..... 0.28 124  |       |      |

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| <b>4 RETAIN..... 18.90 121</b>                 |  |  |
| 4.1 Sustainability..... 13.36 121              |  |  |
| 4.1.1 Pension system..... 18.37 78             |  |  |
| 4.1.2 Social protection..... 2.74 123          |  |  |
| 4.1.3 Brain retention..... 18.97 114           |  |  |
| 4.2 Lifestyle..... 24.44 114                   |  |  |
| 4.2.1 Environmental performance..... 26.64 110 |  |  |
| 4.2.2 Personal safety..... 35.78 110           |  |  |
| 4.2.3 Physician density..... 0.95 116          |  |  |
| 4.2.4 Sanitation..... 34.41 111                |  |  |

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| <b>5 VOCATIONAL AND TECHNICAL SKILLS..... 23.49 111</b>          |  |  |
| 5.1 Mid-Level Skills..... 2.57 125                               |  |  |
| 5.1.1 Workforce with secondary education..... 0.00 116           |  |  |
| 5.1.2 Population with secondary education..... 2.85 101          |  |  |
| 5.1.3 Technicians and associate professionals..... 6.25 110      |  |  |
| 5.1.4 Labour productivity per employee..... 1.16 100             |  |  |
| 5.2 Employability..... 44.42 60                                  |  |  |
| 5.2.1 Ease of finding skilled employees..... 54.06 55            |  |  |
| 5.2.2 Relevance of education system to the economy..... 45.77 48 |  |  |
| 5.2.3 Skills matching with secondary education..... 40.06 68     |  |  |
| 5.2.4 Skills matching with tertiary education..... 37.79 82      |  |  |

|                                                               |  |  |
|---------------------------------------------------------------|--|--|
| <b>6 GLOBAL KNOWLEDGE SKILLS..... 9.86 104</b>                |  |  |
| 6.1 High-Level Skills..... 11.02 109                          |  |  |
| 6.1.1 Workforce with tertiary education..... 16.60 89         |  |  |
| 6.1.2 Population with tertiary education..... 20.20 73        |  |  |
| 6.1.3 Professionals..... 8.15 107                             |  |  |
| 6.1.4 Researchers..... 0.99 85                                |  |  |
| 6.1.5 Senior officials and managers..... 5.36 104             |  |  |
| 6.1.6 Availability of scientists and engineers..... 14.84 115 |  |  |
| 6.2 Talent Impact..... 8.70 101                               |  |  |
| 6.2.1 Innovation output..... 15.97 96                         |  |  |
| 6.2.2 High-value exports..... 9.44 72                         |  |  |
| 6.2.3 New product entrepreneurial activity..... n/a n/a       |  |  |
| 6.2.4 New business density..... n/a n/a                       |  |  |
| 6.2.5 Scientific journal articles..... 0.68 99                |  |  |





# Data Tables



# How to Read the Data Tables

| DATA TABLES                                                                                                                                                                                                                                                                                                            |                            |       |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------|--------|
| <b>1 1.2.3 Cluster development</b>                                                                                                                                                                                                                                                                                     |                            |       |        |
| <b>2 Average answer to the question: In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)? [1 = nonexistent; 7 = widespread in many fields]   2017</b> |                            |       |        |
| <b>3</b>                                                                                                                                                                                                                                                                                                               |                            |       |        |
| Rank                                                                                                                                                                                                                                                                                                                   | Country                    | Value | Score  |
| 1                                                                                                                                                                                                                                                                                                                      | United States of America   | 5.70  | 100.00 |
| 2                                                                                                                                                                                                                                                                                                                      | United Arab Emirates       | 5.44  | 91.65  |
| 3                                                                                                                                                                                                                                                                                                                      | Germany                    | 5.43  | 91.40  |
| 4                                                                                                                                                                                                                                                                                                                      | Netherlands                | 5.40  | 90.54  |
| 5                                                                                                                                                                                                                                                                                                                      | United Kingdom             | 5.36  | 89.08  |
| 6                                                                                                                                                                                                                                                                                                                      | Italy                      | 5.34  | 88.51  |
| 7                                                                                                                                                                                                                                                                                                                      | Qatar                      | 5.21  | 84.25  |
| 8                                                                                                                                                                                                                                                                                                                      | Singapore                  | 5.18  | 83.37  |
| 9                                                                                                                                                                                                                                                                                                                      | Japan                      | 5.15  | 82.35  |
| 10                                                                                                                                                                                                                                                                                                                     | Switzerland                | 5.12  | 81.43  |
| 11                                                                                                                                                                                                                                                                                                                     | Malaysia                   | 5.09  | 80.44  |
| 12                                                                                                                                                                                                                                                                                                                     | Luxembourg                 | 5.05  | 79.21  |
| 13                                                                                                                                                                                                                                                                                                                     | Norway                     | 5.04  | 79.08  |
| 14                                                                                                                                                                                                                                                                                                                     | Sweden                     | 5.04  | 79.05  |
| 15                                                                                                                                                                                                                                                                                                                     | Finland                    | 5.02  | 78.32  |
| 16                                                                                                                                                                                                                                                                                                                     | Austria                    | 4.94  | 75.87  |
| 17                                                                                                                                                                                                                                                                                                                     | Belgium                    | 4.82  | 72.00  |
| 18                                                                                                                                                                                                                                                                                                                     | Ireland                    | 4.76  | 70.13  |
| 19                                                                                                                                                                                                                                                                                                                     | France                     | 4.69  | 67.71  |
| 20                                                                                                                                                                                                                                                                                                                     | Saudi Arabia               | 4.68  | 67.52  |
| 21                                                                                                                                                                                                                                                                                                                     | Denmark                    | 4.68  | 67.49  |
| 22                                                                                                                                                                                                                                                                                                                     | Canada                     | 4.62  | 65.68  |
| 23                                                                                                                                                                                                                                                                                                                     | Bahrain                    | 4.62  | 65.65  |
| 24                                                                                                                                                                                                                                                                                                                     | Indonesia                  | 4.59  | 64.83  |
| 25                                                                                                                                                                                                                                                                                                                     | China                      | 4.58  | 64.32  |
| 26                                                                                                                                                                                                                                                                                                                     | Korea, Rep.                | 4.58  | 64.32  |
| 27                                                                                                                                                                                                                                                                                                                     | South Africa               | 4.50  | 61.75  |
| 28                                                                                                                                                                                                                                                                                                                     | Jordan                     | 4.44  | 59.94  |
| 29                                                                                                                                                                                                                                                                                                                     | India                      | 4.43  | 59.49  |
| 30                                                                                                                                                                                                                                                                                                                     | Israel                     | 4.42  | 59.24  |
| 31                                                                                                                                                                                                                                                                                                                     | Mauritius                  | 4.35  | 57.14  |
| 32                                                                                                                                                                                                                                                                                                                     | Malta                      | 4.34  | 56.89  |
| 33                                                                                                                                                                                                                                                                                                                     | Azerbaijan                 | 4.34  | 56.79  |
| 34                                                                                                                                                                                                                                                                                                                     | Spain                      | 4.31  | 55.65  |
| 35                                                                                                                                                                                                                                                                                                                     | Kenya                      | 4.34  | 53.71  |
| 36                                                                                                                                                                                                                                                                                                                     | Mexico                     | 4.21  | 52.51  |
| 37                                                                                                                                                                                                                                                                                                                     | Portugal                   | 4.19  | 51.84  |
| 38                                                                                                                                                                                                                                                                                                                     | Ghana                      | 4.17  | 51.33  |
| 39                                                                                                                                                                                                                                                                                                                     | Brazil                     | 4.14  | 50.25  |
| 40                                                                                                                                                                                                                                                                                                                     | Rwanda                     | 4.13  | 49.94  |
| 41                                                                                                                                                                                                                                                                                                                     | Iceland                    | 4.10  | 49.05  |
| 42                                                                                                                                                                                                                                                                                                                     | New Zealand                | 4.09  | 48.67  |
| 43                                                                                                                                                                                                                                                                                                                     | Costa Rica                 | 4.07  | 48.10  |
| 44                                                                                                                                                                                                                                                                                                                     | Panama                     | 4.07  | 48.03  |
| 45                                                                                                                                                                                                                                                                                                                     | Kuwait                     | 4.06  | 47.97  |
| 46                                                                                                                                                                                                                                                                                                                     | Cambodia                   | 4.03  | 46.95  |
| 47                                                                                                                                                                                                                                                                                                                     | Gambia                     | 3.99  | 45.71  |
| 48                                                                                                                                                                                                                                                                                                                     | Australia                  | 3.98  | 45.40  |
| 49                                                                                                                                                                                                                                                                                                                     | Czech Republic             | 3.94  | 44.03  |
| 50                                                                                                                                                                                                                                                                                                                     | Laos                       | 3.93  | 43.84  |
| 51                                                                                                                                                                                                                                                                                                                     | Sri Lanka                  | 3.93  | 43.75  |
| 52                                                                                                                                                                                                                                                                                                                     | Pakistan                   | 3.88  | 42.16  |
| 53                                                                                                                                                                                                                                                                                                                     | Egypt                      | 3.86  | 41.59  |
| 54                                                                                                                                                                                                                                                                                                                     | Slovakia                   | 3.84  | 41.02  |
| 55                                                                                                                                                                                                                                                                                                                     | Tanzania, United Rep.      | 3.84  | 40.76  |
| 56                                                                                                                                                                                                                                                                                                                     | Turkey                     | 3.82  | 40.25  |
| 57                                                                                                                                                                                                                                                                                                                     | Morocco                    | 3.82  | 40.10  |
| 58                                                                                                                                                                                                                                                                                                                     | Lebanon                    | 3.80  | 39.68  |
| 59                                                                                                                                                                                                                                                                                                                     | Philippines                | 3.80  | 39.46  |
| 60                                                                                                                                                                                                                                                                                                                     | Dominican Republic         | 3.79  | 39.33  |
| 61                                                                                                                                                                                                                                                                                                                     | Poland                     | 3.79  | 39.33  |
| 62                                                                                                                                                                                                                                                                                                                     | Bangladesh                 | 3.79  | 39.30  |
| 63                                                                                                                                                                                                                                                                                                                     | Thailand                   | 3.77  | 38.67  |
| 64                                                                                                                                                                                                                                                                                                                     | Viet Nam                   | 3.77  | 38.63  |
| 65                                                                                                                                                                                                                                                                                                                     | Bulgaria                   | 3.75  | 37.87  |
| 66                                                                                                                                                                                                                                                                                                                     | Oman                       | 3.74  | 37.84  |
| 67                                                                                                                                                                                                                                                                                                                     | Estonia                    | 3.73  | 37.37  |
| 68                                                                                                                                                                                                                                                                                                                     | Kazakhstan                 | 3.73  | 37.30  |
| 69                                                                                                                                                                                                                                                                                                                     | Guatemala                  | 3.72  | 37.11  |
| 70                                                                                                                                                                                                                                                                                                                     | Brunei Darussalam          | 3.68  | 35.94  |
| 71                                                                                                                                                                                                                                                                                                                     | Slovenia                   | 3.68  | 35.65  |
| 72                                                                                                                                                                                                                                                                                                                     | Bhutan                     | 3.65  | 34.95  |
| 73                                                                                                                                                                                                                                                                                                                     | Colombia                   | 3.65  | 34.89  |
| 74                                                                                                                                                                                                                                                                                                                     | Honduras                   | 3.65  | 34.86  |
| 75                                                                                                                                                                                                                                                                                                                     | Mali                       | 3.63  | 34.13  |
| 76                                                                                                                                                                                                                                                                                                                     | Cyprus                     | 3.62  | 33.97  |
| 77                                                                                                                                                                                                                                                                                                                     | Trinidad and Tobago        | 3.61  | 33.62  |
| 78                                                                                                                                                                                                                                                                                                                     | Uganda                     | 3.60  | 33.11  |
| 79                                                                                                                                                                                                                                                                                                                     | Liberia                    | 3.57  | 32.25  |
| 80                                                                                                                                                                                                                                                                                                                     | Ethiopia                   | 3.56  | 31.97  |
| 81                                                                                                                                                                                                                                                                                                                     | Lesotho                    | 3.54  | 31.46  |
| 82                                                                                                                                                                                                                                                                                                                     | Russian Federation         | 3.54  | 31.37  |
| 83                                                                                                                                                                                                                                                                                                                     | Zambia                     | 3.54  | 31.27  |
| 84                                                                                                                                                                                                                                                                                                                     | Hungary                    | 3.53  | 30.98  |
| 85                                                                                                                                                                                                                                                                                                                     | Namibia                    | 3.46  | 28.95  |
| 86                                                                                                                                                                                                                                                                                                                     | Bosnia and Herzegovina     | 3.46  | 28.89  |
| 87                                                                                                                                                                                                                                                                                                                     | Senegal                    | 3.45  | 28.63  |
| 88                                                                                                                                                                                                                                                                                                                     | Lithuania                  | 3.44  | 28.22  |
| 89                                                                                                                                                                                                                                                                                                                     | Armenia                    | 3.44  | 28.19  |
| 90                                                                                                                                                                                                                                                                                                                     | Chile                      | 3.42  | 27.65  |
| 91                                                                                                                                                                                                                                                                                                                     | Nigeria                    | 3.41  | 27.37  |
| 92                                                                                                                                                                                                                                                                                                                     | Latvia                     | 3.41  | 27.33  |
| 93                                                                                                                                                                                                                                                                                                                     | Senegal                    | 3.37  | 25.97  |
| 94                                                                                                                                                                                                                                                                                                                     | Nepal                      | 3.37  | 25.94  |
| 95                                                                                                                                                                                                                                                                                                                     | Botswana                   | 3.35  | 25.34  |
| 96                                                                                                                                                                                                                                                                                                                     | Argentina                  | 3.28  | 22.95  |
| 97                                                                                                                                                                                                                                                                                                                     | Uruguay                    | 3.27  | 22.89  |
| 98                                                                                                                                                                                                                                                                                                                     | Piru                       | 3.22  | 21.05  |
| 99                                                                                                                                                                                                                                                                                                                     | Cameroon                   | 3.16  | 19.37  |
| 100                                                                                                                                                                                                                                                                                                                    | Algeria                    | 3.15  | 18.83  |
| 101                                                                                                                                                                                                                                                                                                                    | Ukraine                    | 3.13  | 18.41  |
| 102                                                                                                                                                                                                                                                                                                                    | Montenegro                 | 3.13  | 18.22  |
| 103                                                                                                                                                                                                                                                                                                                    | Burundi                    | 3.11  | 17.59  |
| 104                                                                                                                                                                                                                                                                                                                    | Congo, Dem. Rep.           | 3.10  | 17.43  |
| 105                                                                                                                                                                                                                                                                                                                    | Paraguay                   | 3.10  | 17.33  |
| 106                                                                                                                                                                                                                                                                                                                    | Ecuador                    | 3.09  | 17.21  |
| 107                                                                                                                                                                                                                                                                                                                    | Mozambique                 | 3.08  | 16.67  |
| 108                                                                                                                                                                                                                                                                                                                    | Albania                    | 3.08  | 16.60  |
| 109                                                                                                                                                                                                                                                                                                                    | Madagascar                 | 3.03  | 15.30  |
| 110                                                                                                                                                                                                                                                                                                                    | Tunisia                    | 3.03  | 15.34  |
| 111                                                                                                                                                                                                                                                                                                                    | Romania                    | 3.02  | 14.79  |
| 112                                                                                                                                                                                                                                                                                                                    | Yugoslavia                 | 3.01  | 14.63  |
| 113                                                                                                                                                                                                                                                                                                                    | Greece                     | 3.00  | 14.10  |
| 114                                                                                                                                                                                                                                                                                                                    | El Salvador                | 2.96  | 12.86  |
| 115                                                                                                                                                                                                                                                                                                                    | Nicaragua                  | 2.96  | 12.86  |
| 116                                                                                                                                                                                                                                                                                                                    | Kazakhstan                 | 2.95  | 12.67  |
| 117                                                                                                                                                                                                                                                                                                                    | Georgia                    | 2.95  | 12.57  |
| 118                                                                                                                                                                                                                                                                                                                    | Malawi                     | 2.94  | 12.35  |
| 119                                                                                                                                                                                                                                                                                                                    | Yemen                      | 2.93  | 12.03  |
| 120                                                                                                                                                                                                                                                                                                                    | Croatia                    | 2.92  | 11.71  |
| 121                                                                                                                                                                                                                                                                                                                    | Kirgizstan                 | 2.80  | 7.78   |
| 122                                                                                                                                                                                                                                                                                                                    | Mongolia                   | 2.78  | 7.14   |
| 123                                                                                                                                                                                                                                                                                                                    | Moldova, Rep.              | 2.64  | 2.73   |
| 124                                                                                                                                                                                                                                                                                                                    | Zimbabwe                   | 2.64  | 2.73   |
| 125                                                                                                                                                                                                                                                                                                                    | Venezuela, Bolivarian Rep. | 2.55  | 0.00   |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org/>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

THE GLOBAL TALENT COMPETITIVENESS INDEX 2019 291

This appendix provides the rankings and scores for each of the 68 variables that make up the GTCI 2019.

Each data table consists of four parts:

- 1 the variable name,
- 2 the description or technical name and the latest year for which data are available,
- 3 the ranking, and
- 4 the source.

**1** The first section provides the variable number that represents its position in the overall structure of the GTCI. The first digit refers to the pillar, the second digit refers to the sub-pillar within that pillar, and the third digit refers to the position of the variable in that sub-pillar. For instance, the variable *1.2.3 Cluster development* is positioned in the first pillar (shown by the first digit, 1); the second sub-pillar (denoted by the second digit, 2); and is the third variable within this sub-pillar (shown by the third digit, 3).

**2** The second section spells out the description or technical name of the variable, along with the latest year for which the data are available. For some countries, the year of the data differs from the most frequent year; in these cases, the most recent year available is used. For qualitative variables derived from survey responses, the question asked in the survey is shown as the exact technical name. This applies to all variables taken from the World Economic Forum's Executive Opinion Survey, for instance.

**3** The ranking of the countries within the data table follows their normalised scores. There are three parts to the information in the ranking: the rank of the country, the raw value, and the normalised score. Because of the way outliers are treated, in some variables several countries have the same score. For variables in which two or more countries happen to have the same raw value (and thus the same normalised score), there is a tie in ranking; in this case the relevant countries are sorted alphabetically. For more information about normalisation methods and variable names, please refer to the Technical Notes and Sources and Definitions sections in the Appendices.

**4** The final section presents all sources and a link to the data source as well as the cut-off year.



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# Pillar 1

Enable

## 1.1.1 Government effectiveness

### Government effectiveness indicator | 2016

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score  |
|------|--------------------------|-------|--------|------|----------------------------|-------|--------|
| 1    | Singapore                | 2.21  | 100.00 | 63   | Montenegro                 | 0.10  | 47.64  |
| 2    | Switzerland              | 2.03  | 95.53  | 65   | Serbia                     | 0.09  | 47.39  |
| 3    | Denmark                  | 1.89  | 92.06  | 66   | Turkey                     | 0.05  | 46.40  |
| 4    | Norway                   | 1.88  | 91.81  | 67   | Colombia                   | 0.02  | 45.66  |
| 5    | New Zealand              | 1.86  | 91.32  | 68   | Indonesia                  | 0.01  | 45.41  |
| 6    | Finland                  | 1.85  | 91.07  | 68   | Viet Nam                   | 0.01  | 45.41  |
| 7    | Netherlands              | 1.84  | 90.82  | 70   | Albania                    | 0.00  | 45.16  |
| 8    | Japan                    | 1.83  | 90.57  | 71   | Philippines                | -0.01 | 44.91  |
| 9    | Canada                   | 1.80  | 89.83  | 72   | Kazakhstan                 | -0.06 | 43.67  |
| 10   | Sweden                   | 1.79  | 89.58  | 73   | Morocco                    | -0.10 | 42.68  |
| 11   | Germany                  | 1.74  | 88.34  | 74   | Mongolia                   | -0.11 | 42.43  |
| 12   | Luxembourg               | 1.69  | 87.10  | 75   | Armenia                    | -0.15 | 41.44  |
| 13   | United Kingdom           | 1.61  | 85.11  | 76   | Azerbaijan                 | -0.16 | 41.19w |
| 14   | Australia                | 1.58  | 84.37  | 77   | Peru                       | -0.17 | 40.94  |
| 15   | Austria                  | 1.51  | 82.63  | 77   | Romania                    | -0.17 | 40.94  |
| 16   | United States of America | 1.48  | 81.89  | 79   | Brazil                     | -0.18 | 40.69  |
| 17   | France                   | 1.41  | 80.15  | 79   | Kuwait                     | -0.18 | 40.69  |
| 17   | Iceland                  | 1.41  | 80.15  | 81   | Ghana                      | -0.20 | 40.20  |
| 17   | United Arab Emirates     | 1.41  | 80.15  | 81   | Iran, Islamic Rep.         | -0.20 | 40.20  |
| 20   | Ireland                  | 1.35  | 78.66  | 83   | Sri Lanka                  | -0.21 | 39.95  |
| 20   | Israel                   | 1.35  | 78.66  | 83   | Tunisia                    | -0.21 | 39.95  |
| 22   | Belgium                  | 1.33  | 78.16  | 85   | Russian Federation         | -0.22 | 39.70  |
| 23   | Portugal                 | 1.22  | 75.43  | 86   | Dominican Republic         | -0.25 | 38.96  |
| 24   | Estonia                  | 1.12  | 72.95  | 87   | El Salvador                | -0.28 | 38.21  |
| 24   | Slovenia                 | 1.12  | 72.95  | 88   | Kenya                      | -0.31 | 37.47  |
| 24   | Spain                    | 1.12  | 72.95  | 89   | Laos                       | -0.39 | 35.48  |
| 27   | Lithuania                | 1.09  | 72.21  | 90   | Bosnia and Herzegovina     | -0.43 | 34.49  |
| 28   | Brunei Darussalam        | 1.07  | 71.71  | 90   | Ecuador                    | -0.43 | 34.49  |
| 28   | Korea, Rep.              | 1.07  | 71.71  | 92   | Senegal                    | -0.47 | 33.50  |
| 30   | Czech Republic           | 1.06  | 71.46  | 93   | Lebanon                    | -0.53 | 32.01  |
| 31   | Chile                    | 1.02  | 70.47  | 94   | Algeria                    | -0.54 | 31.76  |
| 32   | Latvia                   | 1.00  | 69.98  | 95   | Tanzania, United Rep.      | -0.55 | 31.51  |
| 33   | Cyprus                   | 0.98  | 69.48  | 96   | Uganda                     | -0.57 | 31.02  |
| 34   | Mauritius                | 0.96  | 68.98  | 97   | Ukraine                    | -0.58 | 30.77  |
| 35   | Malta                    | 0.95  | 68.73  | 98   | Guatemala                  | -0.60 | 30.27  |
| 36   | Slovakia                 | 0.89  | 67.25  | 99   | Moldova, Rep.              | -0.62 | 29.78  |
| 37   | Malaysia                 | 0.88  | 67.00  | 100  | Ethiopia                   | -0.64 | 29.28  |
| 38   | Qatar                    | 0.75  | 63.77  | 100  | Pakistan                   | -0.64 | 29.28  |
| 39   | Poland                   | 0.69  | 62.28  | 102  | Egypt                      | -0.66 | 28.78  |
| 40   | Uruguay                  | 0.55  | 58.81  | 102  | Zambia                     | -0.66 | 28.78  |
| 41   | Italy                    | 0.52  | 58.06  | 104  | Bangladesh                 | -0.69 | 28.04  |
| 42   | Botswana                 | 0.51  | 57.82  | 104  | Cambodia                   | -0.69 | 28.04  |
| 42   | Georgia                  | 0.51  | 57.82  | 106  | Nicaragua                  | -0.70 | 27.79  |
| 44   | Bhutan                   | 0.49  | 57.32  | 107  | Honduras                   | -0.73 | 27.05  |
| 44   | Croatia                  | 0.49  | 57.32  | 107  | Malawi                     | -0.73 | 27.05  |
| 46   | Hungary                  | 0.45  | 56.33  | 109  | Cameroon                   | -0.76 | 26.30  |
| 47   | China                    | 0.36  | 54.09  | 110  | Paraguay                   | -0.77 | 26.05  |
| 47   | Costa Rica               | 0.36  | 54.09  | 111  | Lesotho                    | -0.80 | 25.31  |
| 49   | Thailand                 | 0.34  | 53.60  | 112  | Nepal                      | -0.81 | 25.06  |
| 50   | Bahrain                  | 0.32  | 53.10  | 113  | Gambia                     | -0.84 | 24.32  |
| 51   | Bulgaria                 | 0.29  | 52.36  | 114  | Mozambique                 | -0.85 | 24.07  |
| 52   | South Africa             | 0.27  | 51.86  | 115  | Kyrgyzstan                 | -0.90 | 22.83  |
| 53   | Saudi Arabia             | 0.24  | 51.12  | 116  | Mali                       | -0.99 | 20.60  |
| 54   | Trinidad and Tobago      | 0.22  | 50.62  | 117  | Tajikistan                 | -1.02 | 19.85  |
| 55   | Greece                   | 0.21  | 50.37  | 118  | Nigeria                    | -1.09 | 18.11  |
| 56   | Oman                     | 0.19  | 49.88  | 119  | Zimbabwe                   | -1.16 | 16.38  |
| 56   | Panama                   | 0.19  | 49.88  | 120  | Madagascar                 | -1.17 | 16.13  |
| 58   | Argentina                | 0.18  | 49.63  | 121  | Venezuela, Bolivarian Rep. | -1.29 | 13.15  |
| 59   | Namibia                  | 0.17  | 49.38  | 122  | Liberia                    | -1.32 | 12.41  |
| 60   | Jordan                   | 0.14  | 48.64  | 123  | Burundi                    | -1.40 | 10.42  |
| 60   | Mexico                   | 0.14  | 48.64  | 124  | Congo, Dem. Rep.           | -1.51 | 7.69   |
| 62   | Rwanda                   | 0.11  | 47.89  | 125  | Yemen                      | -1.82 | 0.00   |
| 63   | India                    | 0.10  | 47.64  |      |                            |       |        |

SOURCE: World Bank, *Worldwide Governance Indicators*, 2017 Update ([www.govindicators.org](http://www.govindicators.org))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.1.2 Business-government relations

Average answer to the question: In your country, how would you best characterize relations between business and government? [1 = highly confrontational; 7 = highly cooperative] | 2014

| Rank | Country                | Value | Score  | Rank | Country                    | Value | Score |
|------|------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Singapore              | 6.28  | 100.00 | 64   | Georgia                    | 4.43  | 59.16 |
| 2    | United Arab Emirates   | 6.17  | 97.57  | 65   | Viet Nam                   | 4.37  | 57.84 |
| 3    | Qatar                  | 6.12  | 96.47  | 66   | Thailand                   | 4.33  | 56.95 |
| 4    | Luxembourg             | 6.01  | 94.04  | 67   | Lesotho                    | 4.29  | 56.07 |
| 5    | Finland                | 5.90  | 91.61  | 68   | Iceland                    | 4.27  | 55.63 |
| 6    | Rwanda                 | 5.89  | 91.39  | 68   | Nigeria                    | 4.27  | 55.63 |
| 7    | Norway                 | 5.85  | 90.51  | 70   | Israel                     | 4.25  | 55.19 |
| 8    | Ireland                | 5.80  | 89.40  | 71   | Paraguay                   | 4.24  | 54.97 |
| 9    | New Zealand            | 5.74  | 88.08  | 72   | Peru                       | 4.22  | 54.53 |
| 10   | Bahrain                | 5.71  | 87.42  | 73   | Malawi                     | 4.21  | 54.30 |
| 11   | Switzerland            | 5.67  | 86.53  | 74   | United States of America   | 4.17  | 53.42 |
| 12   | Malaysia               | 5.64  | 85.87  | 75   | Honduras                   | 4.07  | 51.21 |
| 13   | Oman                   | 5.47  | 82.12  | 75   | Mali                       | 4.07  | 51.21 |
| 14   | Laos                   | 5.43  | 81.24  | 77   | Lithuania                  | 4.06  | 50.99 |
| 15   | Brunei Darussalam      | 5.38  | 80.13  | 78   | Armenia                    | 4.05  | 50.77 |
| 16   | Japan                  | 5.37  | 79.91  | 78   | Cameroon                   | 4.05  | 50.77 |
| 17   | Canada                 | 5.34  | 79.25  | 80   | Uruguay                    | 4.03  | 50.33 |
| 18   | Netherlands            | 5.33  | 79.03  | 81   | Ethiopia                   | 4.01  | 49.89 |
| 19   | Sweden                 | 5.30  | 78.37  | 82   | El Salvador                | 3.99  | 49.45 |
| 20   | Mauritius              | 5.22  | 76.60  | 83   | Bangladesh                 | 3.98  | 49.23 |
| 21   | Denmark                | 5.12  | 74.39  | 83   | Cambodia                   | 3.98  | 49.23 |
| 22   | Chile                  | 5.09  | 73.73  | 85   | Albania                    | 3.96  | 48.79 |
| 23   | Gambia                 | 5.08  | 73.51  | 86   | Belgium                    | 3.92  | 47.90 |
| 24   | Philippines            | 5.07  | 73.29  | 87   | Latvia                     | 3.90  | 47.46 |
| 25   | United Kingdom         | 5.01  | 71.96  | 88   | India                      | 3.89  | 47.24 |
| 26   | Germany                | 5.00  | 71.74  | 89   | Russian Federation         | 3.88  | 47.02 |
| 27   | Saudi Arabia           | 4.99  | 71.52  | 90   | Tunisia                    | 3.86  | 46.58 |
| 28   | Zambia                 | 4.94  | 70.42  | 91   | Kyrgyzstan                 | 3.83  | 45.92 |
| 29   | Botswana               | 4.93  | 70.20  | 91   | Poland                     | 3.83  | 45.92 |
| 29   | Sri Lanka              | 4.93  | 70.20  | 93   | Algeria                    | 3.81  | 45.47 |
| 31   | Malta                  | 4.90  | 69.54  | 94   | Brazil                     | 3.79  | 45.03 |
| 32   | Austria                | 4.89  | 69.32  | 94   | Ecuador                    | 3.79  | 45.03 |
| 33   | China                  | 4.88  | 69.09  | 96   | Czech Republic             | 3.77  | 44.59 |
| 34   | Indonesia              | 4.84  | 68.21  | 96   | Nepal                      | 3.77  | 44.59 |
| 35   | Estonia                | 4.83  | 67.99  | 96   | Tanzania, United Rep.      | 3.77  | 44.59 |
| 36   | Senegal                | 4.78  | 66.89  | 99   | Ghana                      | 3.65  | 41.94 |
| 36   | Tajikistan             | 4.78  | 66.89  | 99   | Romania                    | 3.65  | 41.94 |
| 38   | Mexico                 | 4.75  | 66.23  | 101  | Serbia                     | 3.59  | 40.62 |
| 39   | Australia              | 4.68  | 64.68  | 102  | Egypt                      | 3.56  | 39.96 |
| 40   | Costa Rica             | 4.66  | 64.24  | 102  | Moldova, Rep.              | 3.56  | 39.96 |
| 41   | Dominican Republic     | 4.65  | 64.02  | 104  | Pakistan                   | 3.54  | 39.51 |
| 42   | Kazakhstan             | 4.62  | 63.36  | 105  | South Africa               | 3.44  | 37.31 |
| 43   | Portugal               | 4.61  | 63.13  | 106  | Hungary                    | 3.40  | 36.42 |
| 44   | Panama                 | 4.59  | 62.69  | 107  | France                     | 3.39  | 36.20 |
| 45   | Namibia                | 4.58  | 62.47  | 108  | Greece                     | 3.38  | 35.98 |
| 46   | Guatemala              | 4.57  | 62.25  | 108  | Kuwait                     | 3.38  | 35.98 |
| 46   | Spain                  | 4.57  | 62.25  | 108  | Ukraine                    | 3.38  | 35.98 |
| 48   | Cyprus                 | 4.56  | 62.03  | 111  | Iran, Islamic Rep.         | 3.32  | 34.66 |
| 48   | Korea, Rep.            | 4.56  | 62.03  | 111  | Madagascar                 | 3.32  | 34.66 |
| 50   | Bosnia and Herzegovina | 4.55  | 61.81  | 113  | Zimbabwe                   | 3.29  | 34.00 |
| 50   | Morocco                | 4.55  | 61.81  | 114  | Bulgaria                   | 3.25  | 33.11 |
| 52   | Jordan                 | 4.54  | 61.59  | 115  | Yemen                      | 3.22  | 32.45 |
| 52   | Montenegro             | 4.54  | 61.59  | 116  | Slovenia                   | 3.20  | 32.01 |
| 52   | Nicaragua              | 4.54  | 61.59  | 117  | Lebanon                    | 3.18  | 31.57 |
| 55   | Kenya                  | 4.52  | 61.15  | 118  | Croatia                    | 3.12  | 30.24 |
| 56   | Colombia               | 4.48  | 60.26  | 119  | Burundi                    | 3.03  | 28.26 |
| 56   | Turkey                 | 4.48  | 60.26  | 120  | Mongolia                   | 2.98  | 27.15 |
| 58   | Bhutan                 | 4.47  | 60.04  | 121  | Slovakia                   | 2.88  | 24.94 |
| 58   | Mozambique             | 4.47  | 60.04  | 122  | Italy                      | 2.66  | 20.09 |
| 60   | Liberia                | 4.46  | 59.82  | 123  | Argentina                  | 2.33  | 12.80 |
| 60   | Trinidad and Tobago    | 4.46  | 59.82  | 124  | Venezuela, Bolivarian Rep. | 1.75  | 0.00  |
| 62   | Azerbaijan             | 4.45  | 59.60  |      | Congo, Dem. Rep.           | n/a   | n/a   |
| 63   | Uganda                 | 4.44  | 59.38  |      |                            |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2013–2014 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.1.3 Political stability

### Political stability and absence of violence indicator | 2016

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Singapore                | 1.53  | 100.00 | 64   | Rwanda                     | -0.05 | 63.43 |
| 2    | New Zealand              | 1.49  | 99.07  | 65   | El Salvador                | -0.06 | 63.19 |
| 3    | Luxembourg               | 1.41  | 97.22  | 65   | France                     | -0.06 | 63.19 |
| 4    | Iceland                  | 1.33  | 95.37  | 65   | Malawi                     | -0.06 | 63.19 |
| 5    | Switzerland              | 1.32  | 95.14  | 68   | Ecuador                    | -0.10 | 62.27 |
| 6    | Brunei Darussalam        | 1.26  | 93.75  | 69   | South Africa               | -0.13 | 61.57 |
| 7    | Canada                   | 1.24  | 93.29  | 70   | Greece                     | -0.14 | 61.34 |
| 8    | Norway                   | 1.17  | 91.67  | 71   | Kuwait                     | -0.15 | 61.11 |
| 9    | Uruguay                  | 1.10  | 90.05  | 72   | Ghana                      | -0.16 | 60.88 |
| 10   | Botswana                 | 1.09  | 89.81  | 72   | Peru                       | -0.16 | 60.88 |
| 11   | Malta                    | 1.08  | 89.58  | 74   | Nicaragua                  | -0.17 | 60.65 |
| 12   | Mauritius                | 1.05  | 88.89  | 75   | Lesotho                    | -0.25 | 58.80 |
| 13   | Portugal                 | 1.02  | 88.19  | 76   | Senegal                    | -0.27 | 58.33 |
| 14   | Japan                    | 1.01  | 87.96  | 77   | Moldova, Rep.              | -0.28 | 58.10 |
| 15   | Bhutan                   | 0.99  | 87.50  | 78   | Georgia                    | -0.29 | 57.87 |
| 15   | Czech Republic           | 0.99  | 87.50  | 78   | Morocco                    | -0.29 | 57.87 |
| 15   | Slovenia                 | 0.99  | 87.50  | 80   | Honduras                   | -0.36 | 56.25 |
| 18   | Sweden                   | 0.98  | 87.27  | 81   | Bosnia and Herzegovina     | -0.38 | 55.79 |
| 19   | Australia                | 0.96  | 86.81  | 81   | Indonesia                  | -0.38 | 55.79 |
| 19   | Finland                  | 0.96  | 86.81  | 83   | Madagascar                 | -0.40 | 55.32 |
| 21   | Netherlands              | 0.89  | 85.19  | 84   | Tanzania, United Rep.      | -0.41 | 55.09 |
| 22   | Ireland                  | 0.88  | 84.95  | 85   | Brazil                     | -0.45 | 54.17 |
| 23   | Qatar                    | 0.87  | 84.72  | 86   | Saudi Arabia               | -0.50 | 53.01 |
| 24   | Denmark                  | 0.85  | 84.26  | 87   | China                      | -0.52 | 52.55 |
| 25   | Austria                  | 0.82  | 83.56  | 87   | Gambia                     | -0.52 | 52.55 |
| 25   | Mongolia                 | 0.82  | 83.56  | 89   | Jordan                     | -0.53 | 52.31 |
| 27   | Lithuania                | 0.80  | 83.10  | 90   | Guatemala                  | -0.54 | 52.08 |
| 27   | Oman                     | 0.80  | 83.10  | 91   | Liberia                    | -0.55 | 51.85 |
| 29   | Germany                  | 0.76  | 82.18  | 92   | Armenia                    | -0.60 | 50.69 |
| 30   | Costa Rica               | 0.75  | 81.94  | 93   | Zimbabwe                   | -0.61 | 50.46 |
| 31   | Namibia                  | 0.74  | 81.71  | 94   | Kyrgyzstan                 | -0.66 | 49.31 |
| 32   | Hungary                  | 0.71  | 81.02  | 95   | Uganda                     | -0.72 | 47.92 |
| 33   | Estonia                  | 0.69  | 80.56  | 96   | Iran, Islamic Rep.         | -0.74 | 47.45 |
| 34   | Croatia                  | 0.68  | 80.32  | 97   | Mexico                     | -0.77 | 46.76 |
| 35   | Slovakia                 | 0.62  | 78.94  | 98   | Nepal                      | -0.79 | 46.30 |
| 36   | Cyprus                   | 0.57  | 77.78  | 98   | Tajikistan                 | -0.79 | 46.30 |
| 37   | Chile                    | 0.51  | 76.39  | 100  | Israel                     | -0.83 | 45.37 |
| 37   | Poland                   | 0.51  | 76.39  | 101  | Bahrain                    | -0.86 | 44.68 |
| 39   | Laos                     | 0.50  | 76.16  | 102  | Azerbaijan                 | -0.87 | 44.44 |
| 40   | Spain                    | 0.49  | 75.93  | 103  | Russian Federation         | -0.89 | 43.98 |
| 41   | Belgium                  | 0.48  | 75.69  | 104  | Thailand                   | -0.93 | 43.06 |
| 42   | United Arab Emirates     | 0.44  | 74.77  | 105  | Cameroon                   | -0.95 | 42.59 |
| 43   | Panama                   | 0.43  | 74.54  | 105  | India                      | -0.95 | 42.59 |
| 44   | Latvia                   | 0.39  | 73.61  | 107  | Colombia                   | -0.96 | 42.36 |
| 45   | United Kingdom           | 0.38  | 73.38  | 108  | Tunisia                    | -0.99 | 41.67 |
| 46   | Italy                    | 0.35  | 72.69  | 109  | Venezuela, Bolivarian Rep. | -1.03 | 40.74 |
| 46   | United States of America | 0.35  | 72.69  | 110  | Mozambique                 | -1.05 | 40.28 |
| 48   | Dominican Republic       | 0.29  | 71.30  | 111  | Algeria                    | -1.14 | 38.19 |
| 49   | Trinidad and Tobago      | 0.28  | 71.06  | 112  | Bangladesh                 | -1.24 | 35.88 |
| 50   | Romania                  | 0.27  | 70.83  | 113  | Philippines                | -1.30 | 34.49 |
| 51   | Albania                  | 0.26  | 70.60  | 114  | Kenya                      | -1.33 | 33.80 |
| 52   | Argentina                | 0.22  | 69.68  | 115  | Egypt                      | -1.42 | 31.71 |
| 53   | Paraguay                 | 0.20  | 69.21  | 116  | Mali                       | -1.55 | 28.70 |
| 54   | Cambodia                 | 0.18  | 68.75  | 117  | Lebanon                    | -1.56 | 28.47 |
| 54   | Zambia                   | 0.18  | 68.75  | 118  | Ethiopia                   | -1.57 | 28.24 |
| 56   | Korea, Rep.              | 0.17  | 68.52  | 119  | Nigeria                    | -1.85 | 21.76 |
| 56   | Viet Nam                 | 0.17  | 68.52  | 120  | Ukraine                    | -1.89 | 20.83 |
| 58   | Montenegro               | 0.16  | 68.29  | 121  | Turkey                     | -2.00 | 18.29 |
| 59   | Malaysia                 | 0.10  | 66.90  | 122  | Burundi                    | -2.08 | 16.44 |
| 60   | Sri Lanka                | 0.07  | 66.20  | 123  | Congo, Dem. Rep.           | -2.20 | 13.66 |
| 61   | Serbia                   | 0.05  | 65.74  | 124  | Pakistan                   | -2.47 | 7.41  |
| 62   | Kazakhstan               | 0.04  | 65.51  | 125  | Yemen                      | -2.79 | 0.00  |
| 63   | Bulgaria                 | 0.03  | 65.28  |      |                            |       |       |

SOURCE: World Bank, *Worldwide Governance Indicators*, 2017 Update ([www.govindicators.org](http://www.govindicators.org))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.1.4 Regulatory quality

### Regulatory quality indicator | 2016

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Singapore                | 2.18  | 100.00 | 63   | Trinidad and Tobago        | -0.09 | 50.00 |
| 2    | New Zealand              | 2.04  | 96.65  | 65   | Saudi Arabia               | -0.08 | 49.76 |
| 3    | Netherlands              | 1.98  | 95.22  | 66   | Serbia                     | -0.06 | 49.28 |
| 4    | Switzerland              | 1.91  | 93.54  | 67   | Jordan                     | -0.05 | 49.04 |
| 5    | Australia                | 1.90  | 93.30  | 68   | Philippines                | -0.00 | 47.85 |
| 6    | Sweden                   | 1.85  | 92.11  | 69   | Dominican Republic         | -0.07 | 46.17 |
| 7    | Finland                  | 1.82  | 91.39  | 69   | Kuwait                     | -0.07 | 46.17 |
| 7    | Germany                  | 1.82  | 91.39  | 71   | Mongolia                   | -0.08 | 45.93 |
| 9    | United Kingdom           | 1.76  | 89.95  | 72   | Kazakhstan                 | -0.10 | 45.45 |
| 10   | Canada                   | 1.74  | 89.47  | 72   | Sri Lanka                  | -0.10 | 45.45 |
| 10   | Ireland                  | 1.74  | 89.47  | 74   | Indonesia                  | -0.12 | 44.98 |
| 12   | Luxembourg               | 1.72  | 89.00  | 74   | Moldova, Rep.              | -0.12 | 44.98 |
| 13   | Estonia                  | 1.70  | 88.52  | 76   | Namibia                    | -0.14 | 44.50 |
| 13   | Norway                   | 1.70  | 88.52  | 76   | Senegal                    | -0.14 | 44.50 |
| 15   | Denmark                  | 1.58  | 85.65  | 78   | Bosnia and Herzegovina     | -0.17 | 43.78 |
| 16   | United States of America | 1.50  | 83.73  | 79   | Guatemala                  | -0.20 | 43.06 |
| 17   | Austria                  | 1.44  | 82.30  | 80   | Brazil                     | -0.21 | 42.82 |
| 18   | Japan                    | 1.43  | 82.06  | 80   | Uganda                     | -0.21 | 42.82 |
| 19   | Chile                    | 1.37  | 80.62  | 82   | Ghana                      | -0.23 | 42.34 |
| 20   | Belgium                  | 1.34  | 79.90  | 82   | Morocco                    | -0.23 | 42.34 |
| 21   | Israel                   | 1.31  | 79.19  | 84   | China                      | -0.26 | 41.63 |
| 22   | Iceland                  | 1.28  | 78.47  | 85   | Azerbaijan                 | -0.28 | 41.15 |
| 23   | Malta                    | 1.16  | 75.60  | 86   | Kenya                      | -0.30 | 40.67 |
| 24   | Lithuania                | 1.14  | 75.12  | 86   | Paraguay                   | -0.30 | 40.67 |
| 25   | Korea, Rep.              | 1.11  | 74.40  | 88   | India                      | -0.31 | 40.43 |
| 26   | Latvia                   | 1.08  | 73.68  | 89   | Lebanon                    | -0.34 | 39.71 |
| 27   | France                   | 1.07  | 73.44  | 90   | Kyrgyzstan                 | -0.35 | 39.47 |
| 28   | Cyprus                   | 1.05  | 72.97  | 91   | Lesotho                    | -0.39 | 38.52 |
| 29   | Mauritius                | 1.03  | 72.49  | 92   | Russian Federation         | -0.42 | 37.80 |
| 30   | Georgia                  | 1.01  | 72.01  | 93   | Ukraine                    | -0.43 | 37.56 |
| 30   | Spain                    | 1.01  | 72.01  | 94   | Tanzania, United Rep.      | -0.44 | 37.32 |
| 32   | Czech Republic           | 0.99  | 71.53  | 95   | Viet Nam                   | -0.45 | 37.08 |
| 33   | United Arab Emirates     | 0.97  | 71.05  | 96   | Argentina                  | -0.47 | 36.60 |
| 34   | Poland                   | 0.95  | 70.57  | 96   | Cambodia                   | -0.47 | 36.60 |
| 35   | Slovakia                 | 0.89  | 69.14  | 96   | Tunisia                    | -0.47 | 36.60 |
| 36   | Portugal                 | 0.84  | 67.94  | 99   | Zambia                     | -0.48 | 36.36 |
| 37   | Italy                    | 0.71  | 64.83  | 100  | Gambia                     | -0.51 | 35.65 |
| 37   | Malaysia                 | 0.71  | 64.83  | 100  | Honduras                   | -0.51 | 35.65 |
| 39   | Qatar                    | 0.70  | 64.59  | 100  | Nicaragua                  | -0.51 | 35.65 |
| 40   | Bulgaria                 | 0.66  | 63.64  | 103  | Mali                       | -0.59 | 33.73 |
| 41   | Slovenia                 | 0.64  | 63.16  | 104  | Pakistan                   | -0.64 | 32.54 |
| 42   | Bahrain                  | 0.61  | 62.44  | 105  | Bhutan                     | -0.67 | 31.82 |
| 42   | Oman                     | 0.61  | 62.44  | 106  | Madagascar                 | -0.69 | 31.34 |
| 44   | Hungary                  | 0.60  | 62.20  | 107  | Mozambique                 | -0.70 | 31.10 |
| 45   | Brunei Darussalam        | 0.59  | 61.96  | 108  | Laos                       | -0.73 | 30.38 |
| 45   | Romania                  | 0.59  | 61.96  | 109  | Nepal                      | -0.76 | 29.67 |
| 47   | Botswana                 | 0.53  | 60.53  | 110  | Cameroon                   | -0.79 | 28.95 |
| 48   | Peru                     | 0.51  | 60.05  | 111  | Bangladesh                 | -0.80 | 28.71 |
| 49   | Uruguay                  | 0.49  | 59.57  | 112  | Burundi                    | -0.83 | 27.99 |
| 50   | Costa Rica               | 0.41  | 57.66  | 113  | Malawi                     | -0.84 | 27.75 |
| 51   | Colombia                 | 0.40  | 57.42  | 114  | Egypt                      | -0.92 | 25.84 |
| 52   | Croatia                  | 0.36  | 56.46  | 114  | Nigeria                    | -0.92 | 25.84 |
| 52   | Panama                   | 0.36  | 56.46  | 116  | Liberia                    | -0.95 | 25.12 |
| 54   | Mexico                   | 0.29  | 54.78  | 117  | Ecuador                    | -1.02 | 23.44 |
| 55   | Armenia                  | 0.25  | 53.83  | 118  | Tajikistan                 | -1.09 | 21.77 |
| 56   | Montenegro               | 0.22  | 53.11  | 119  | Ethiopia                   | -1.10 | 21.53 |
| 57   | South Africa             | 0.21  | 52.87  | 120  | Algeria                    | -1.17 | 19.86 |
| 58   | Turkey                   | 0.20  | 52.63  | 121  | Iran, Islamic Rep.         | -1.23 | 18.42 |
| 59   | Albania                  | 0.19  | 52.39  | 122  | Congo, Dem. Rep.           | -1.32 | 16.27 |
| 60   | Thailand                 | 0.17  | 51.91  | 123  | Yemen                      | -1.48 | 12.44 |
| 61   | Greece                   | 0.15  | 51.44  | 124  | Zimbabwe                   | -1.72 | 6.70  |
| 62   | Rwanda                   | 0.11  | 50.48  | 125  | Venezuela, Bolivarian Rep. | -2.00 | 0.00  |
| 63   | El Salvador              | 0.09  | 50.00  |      |                            |       |       |

SOURCE: World Bank, *Worldwide Governance Indicators*, 2017 Update ([www.govindicators.org](http://www.govindicators.org))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.1.5 Corruption

### Corruption Perceptions Index | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | New Zealand              | 89.00 | 100.00 | 64   | Ghana                      | 40.00 | 32.88 |
| 2    | Denmark                  | 88.00 | 98.63  | 64   | India                      | 40.00 | 32.88 |
| 3    | Finland                  | 85.00 | 94.52  | 64   | Morocco                    | 40.00 | 32.88 |
| 3    | Norway                   | 85.00 | 94.52  | 64   | Turkey                     | 40.00 | 32.88 |
| 3    | Switzerland              | 85.00 | 94.52  | 68   | Argentina                  | 39.00 | 31.51 |
| 6    | Singapore                | 84.00 | 93.15  | 68   | Kuwait                     | 39.00 | 31.51 |
| 6    | Sweden                   | 84.00 | 93.15  | 70   | Albania                    | 38.00 | 30.14 |
| 8    | Canada                   | 82.00 | 90.41  | 70   | Bosnia and Herzegovina     | 38.00 | 30.14 |
| 8    | Luxembourg               | 82.00 | 90.41  | 70   | Sri Lanka                  | 38.00 | 30.14 |
| 8    | Netherlands              | 82.00 | 90.41  | 73   | Brazil                     | 37.00 | 28.77 |
| 8    | United Kingdom           | 82.00 | 90.41  | 73   | Colombia                   | 37.00 | 28.77 |
| 12   | Germany                  | 81.00 | 89.04  | 73   | Indonesia                  | 37.00 | 28.77 |
| 13   | Australia                | 77.00 | 83.56  | 73   | Panama                     | 37.00 | 28.77 |
| 13   | Iceland                  | 77.00 | 83.56  | 73   | Peru                       | 37.00 | 28.77 |
| 15   | Austria                  | 75.00 | 80.82  | 73   | Thailand                   | 37.00 | 28.77 |
| 15   | Belgium                  | 75.00 | 80.82  | 73   | Zambia                     | 37.00 | 28.77 |
| 15   | United States of America | 75.00 | 80.82  | 80   | Bahrain                    | 36.00 | 27.40 |
| 18   | Ireland                  | 74.00 | 79.45  | 80   | Mongolia                   | 36.00 | 27.40 |
| 19   | Japan                    | 73.00 | 78.08  | 80   | Tanzania, United Rep.      | 36.00 | 27.40 |
| 20   | Estonia                  | 71.00 | 75.34  | 83   | Armenia                    | 35.00 | 26.03 |
| 20   | United Arab Emirates     | 71.00 | 75.34  | 83   | Ethiopia                   | 35.00 | 26.03 |
| 22   | France                   | 70.00 | 73.97  | 83   | Viet Nam                   | 35.00 | 26.03 |
| 22   | Uruguay                  | 70.00 | 73.97  | 86   | Philippines                | 34.00 | 24.66 |
| 24   | Bhutan                   | 67.00 | 69.86  | 87   | Algeria                    | 33.00 | 23.29 |
| 24   | Chile                    | 67.00 | 69.86  | 87   | El Salvador                | 33.00 | 23.29 |
| 26   | Portugal                 | 63.00 | 64.38  | 89   | Ecuador                    | 32.00 | 21.92 |
| 26   | Qatar                    | 63.00 | 64.38  | 89   | Egypt                      | 32.00 | 21.92 |
| 28   | Brunei Darussalam        | 62.00 | 63.01  | 89   | Pakistan                   | 32.00 | 21.92 |
| 28   | Israel                   | 62.00 | 63.01  | 92   | Azerbaijan                 | 31.00 | 20.55 |
| 30   | Botswana                 | 61.00 | 61.64  | 92   | Kazakhstan                 | 31.00 | 20.55 |
| 30   | Slovenia                 | 61.00 | 61.64  | 92   | Liberia                    | 31.00 | 20.55 |
| 32   | Poland                   | 60.00 | 60.27  | 92   | Malawi                     | 31.00 | 20.55 |
| 33   | Costa Rica               | 59.00 | 58.90  | 92   | Mali                       | 31.00 | 20.55 |
| 33   | Lithuania                | 59.00 | 58.90  | 92   | Moldova, Rep.              | 31.00 | 20.55 |
| 35   | Latvia                   | 58.00 | 57.53  | 92   | Nepal                      | 31.00 | 20.55 |
| 36   | Cyprus                   | 57.00 | 56.16  | 99   | Gambia                     | 30.00 | 19.18 |
| 36   | Czech Republic           | 57.00 | 56.16  | 99   | Iran, Islamic Rep.         | 30.00 | 19.18 |
| 36   | Spain                    | 57.00 | 56.16  | 99   | Ukraine                    | 30.00 | 19.18 |
| 39   | Georgia                  | 56.00 | 54.79  | 102  | Dominican Republic         | 29.00 | 17.81 |
| 39   | Malta                    | 56.00 | 54.79  | 102  | Honduras                   | 29.00 | 17.81 |
| 41   | Rwanda                   | 55.00 | 53.42  | 102  | Kyrgyzstan                 | 29.00 | 17.81 |
| 42   | Korea, Rep.              | 54.00 | 52.05  | 102  | Laos                       | 29.00 | 17.81 |
| 43   | Namibia                  | 51.00 | 47.95  | 102  | Mexico                     | 29.00 | 17.81 |
| 44   | Italy                    | 50.00 | 46.58  | 102  | Paraguay                   | 29.00 | 17.81 |
| 44   | Mauritius                | 50.00 | 46.58  | 102  | Russian Federation         | 29.00 | 17.81 |
| 44   | Slovakia                 | 50.00 | 46.58  | 109  | Bangladesh                 | 28.00 | 16.44 |
| 47   | Croatia                  | 49.00 | 45.21  | 109  | Guatemala                  | 28.00 | 16.44 |
| 47   | Saudi Arabia             | 49.00 | 45.21  | 109  | Kenya                      | 28.00 | 16.44 |
| 49   | Greece                   | 48.00 | 43.84  | 109  | Lebanon                    | 28.00 | 16.44 |
| 49   | Jordan                   | 48.00 | 43.84  | 113  | Nigeria                    | 27.00 | 15.07 |
| 49   | Romania                  | 48.00 | 43.84  | 114  | Nicaragua                  | 26.00 | 13.70 |
| 52   | Malaysia                 | 47.00 | 42.47  | 114  | Uganda                     | 26.00 | 13.70 |
| 53   | Montenegro               | 46.00 | 41.10  | 116  | Cameroon                   | 25.00 | 12.33 |
| 54   | Hungary                  | 45.00 | 39.73  | 116  | Mozambique                 | 25.00 | 12.33 |
| 54   | Senegal                  | 45.00 | 39.73  | 118  | Madagascar                 | 24.00 | 10.96 |
| 56   | Oman                     | 44.00 | 38.36  | 119  | Burundi                    | 22.00 | 8.22  |
| 57   | Bulgaria                 | 43.00 | 36.99  | 119  | Zimbabwe                   | 22.00 | 8.22  |
| 57   | South Africa             | 43.00 | 36.99  | 121  | Cambodia                   | 21.00 | 6.85  |
| 59   | Lesotho                  | 42.00 | 35.62  | 121  | Congo, Dem. Rep.           | 21.00 | 6.85  |
| 59   | Tunisia                  | 42.00 | 35.62  | 121  | Tajikistan                 | 21.00 | 6.85  |
| 61   | China                    | 41.00 | 34.25  | 124  | Venezuela, Bolivarian Rep. | 18.00 | 2.74  |
| 61   | Serbia                   | 41.00 | 34.25  | 125  | Yemen                      | 16.00 | 0.00  |
| 61   | Trinidad and Tobago      | 41.00 | 34.25  |      |                            |       |       |

**SOURCE:** Transparency International, *The Corruption Perceptions Index 2017* (<http://www.transparency.org/research/cpi>)

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## 1.2.1 Competition intensity

Average answer to the question: In your country, how intense is competition in the local markets? [1 = not intense at all; 7 = extremely intense] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Japan.....                    | 6.21  | 100.00 | 64   | Ecuador.....                   | 5.11  | 67.81 |
| 2    | Malta.....                    | 6.17  | 99.09  | 65   | Senegal.....                   | 5.09  | 67.19 |
| 3    | Korea, Rep.....               | 6.04  | 95.01  | 66   | Nigeria.....                   | 5.09  | 67.13 |
| 4    | United States of America..... | 6.00  | 93.95  | 67   | Greece.....                    | 5.06  | 66.27 |
| 5    | Netherlands.....              | 5.94  | 92.18  | 68   | Russian Federation.....        | 5.02  | 65.06 |
| 6    | Australia.....                | 5.90  | 90.91  | 69   | Paraguay.....                  | 4.99  | 64.09 |
| 7    | Turkey.....                   | 5.88  | 90.35  | 70   | Iceland.....                   | 4.98  | 63.77 |
| 8    | Germany.....                  | 5.88  | 90.29  | 71   | Botswana.....                  | 4.97  | 63.62 |
| 9    | Belgium.....                  | 5.80  | 88.11  | 72   | Bangladesh.....                | 4.97  | 63.53 |
| 10   | France.....                   | 5.79  | 87.84  | 73   | Ukraine.....                   | 4.97  | 63.50 |
| 11   | Estonia.....                  | 5.78  | 87.46  | 74   | Tunisia.....                   | 4.96  | 63.20 |
| 12   | Czech Republic.....           | 5.78  | 87.43  | 75   | Ghana.....                     | 4.96  | 63.15 |
| 13   | United Kingdom.....           | 5.73  | 86.04  | 76   | Honduras.....                  | 4.94  | 62.58 |
| 14   | Singapore.....                | 5.72  | 85.66  | 77   | Zambia.....                    | 4.91  | 61.88 |
| 15   | Lebanon.....                  | 5.66  | 83.95  | 78   | Rwanda.....                    | 4.88  | 60.90 |
| 16   | Austria.....                  | 5.63  | 83.00  | 79   | Cameroon.....                  | 4.87  | 60.46 |
| 17   | United Arab Emirates.....     | 5.58  | 81.41  | 80   | Romania.....                   | 4.86  | 60.19 |
| 18   | Qatar.....                    | 5.55  | 80.70  | 81   | Sri Lanka.....                 | 4.84  | 59.60 |
| 19   | Colombia.....                 | 5.55  | 80.67  | 82   | Egypt.....                     | 4.83  | 59.37 |
| 20   | Spain.....                    | 5.55  | 80.53  | 83   | Kuwait.....                    | 4.82  | 59.25 |
| 21   | Cyprus.....                   | 5.53  | 79.99  | 84   | Madagascar.....                | 4.82  | 59.13 |
| 22   | Sweden.....                   | 5.51  | 79.37  | 85   | Bulgaria.....                  | 4.81  | 58.96 |
| 23   | Jordan.....                   | 5.50  | 79.26  | 86   | Nepal.....                     | 4.80  | 58.48 |
| 24   | Lithuania.....                | 5.50  | 79.11  | 87   | Cambodia.....                  | 4.79  | 58.28 |
| 25   | Latvia.....                   | 5.49  | 78.90  | 88   | Georgia.....                   | 4.77  | 57.78 |
| 26   | Switzerland.....              | 5.48  | 78.52  | 89   | Moldova, Rep.....              | 4.77  | 57.51 |
| 27   | Gambia.....                   | 5.47  | 78.43  | 90   | Finland.....                   | 4.74  | 56.71 |
| 28   | Lesotho.....                  | 5.47  | 78.40  | 91   | India.....                     | 4.73  | 56.51 |
| 29   | Kenya.....                    | 5.47  | 78.37  | 92   | Albania.....                   | 4.73  | 56.45 |
| 30   | China.....                    | 5.46  | 78.05  | 92   | Tajikistan.....                | 4.73  | 56.45 |
| 31   | Canada.....                   | 5.45  | 77.69  | 94   | Namibia.....                   | 4.72  | 56.09 |
| 32   | Malaysia.....                 | 5.44  | 77.34  | 95   | Croatia.....                   | 4.72  | 56.03 |
| 32   | Slovakia.....                 | 5.44  | 77.34  | 96   | Zimbabwe.....                  | 4.69  | 55.15 |
| 34   | Guatemala.....                | 5.44  | 77.31  | 97   | Brunei Darussalam.....         | 4.68  | 55.09 |
| 35   | Slovenia.....                 | 5.41  | 76.42  | 98   | Congo, Dem. Rep.....           | 4.68  | 55.00 |
| 36   | Indonesia.....                | 5.39  | 76.01  | 99   | Azerbaijan.....                | 4.68  | 54.94 |
| 37   | Denmark.....                  | 5.39  | 75.95  | 100  | Bhutan.....                    | 4.67  | 54.82 |
| 38   | Saudi Arabia.....             | 5.39  | 75.86  | 101  | Viet Nam.....                  | 4.66  | 54.44 |
| 39   | Dominican Republic.....       | 5.37  | 75.30  | 102  | Mali.....                      | 4.63  | 53.38 |
| 40   | Thailand.....                 | 5.37  | 75.21  | 102  | Tanzania, United Rep.....      | 4.63  | 53.38 |
| 41   | South Africa.....             | 5.36  | 75.15  | 104  | Uruguay.....                   | 4.62  | 53.14 |
| 42   | New Zealand.....              | 5.36  | 75.10  | 105  | Nicaragua.....                 | 4.60  | 52.64 |
| 43   | Mauritius.....                | 5.34  | 74.54  | 105  | Oman.....                      | 4.60  | 52.64 |
| 44   | Panama.....                   | 5.32  | 74.00  | 107  | Kazakhstan.....                | 4.54  | 50.93 |
| 45   | Costa Rica.....               | 5.32  | 73.95  | 108  | Serbia.....                    | 4.50  | 49.66 |
| 46   | Israel.....                   | 5.32  | 73.86  | 109  | Mongolia.....                  | 4.49  | 49.48 |
| 47   | Luxembourg.....               | 5.32  | 73.77  | 110  | Bosnia and Herzegovina.....    | 4.49  | 49.45 |
| 48   | Ireland.....                  | 5.30  | 73.38  | 111  | Mozambique.....                | 4.47  | 48.75 |
| 49   | Brazil.....                   | 5.28  | 72.68  | 112  | Pakistan.....                  | 4.44  | 48.04 |
| 50   | Philippines.....              | 5.28  | 72.65  | 113  | Malawi.....                    | 4.43  | 47.51 |
| 50   | Poland.....                   | 5.28  | 72.65  | 114  | Montenegro.....                | 4.42  | 47.45 |
| 52   | Uganda.....                   | 5.28  | 72.56  | 115  | Argentina.....                 | 4.33  | 44.67 |
| 53   | Norway.....                   | 5.27  | 72.53  | 116  | Kyrgyzstan.....                | 4.33  | 44.53 |
| 54   | El Salvador.....              | 5.26  | 72.12  | 117  | Iran, Islamic Rep.....         | 4.28  | 43.05 |
| 55   | Portugal.....                 | 5.26  | 72.00  | 118  | Hungary.....                   | 4.25  | 42.20 |
| 56   | Italy.....                    | 5.23  | 71.23  | 119  | Liberia.....                   | 4.23  | 41.66 |
| 57   | Chile.....                    | 5.23  | 71.11  | 120  | Laos.....                      | 4.18  | 40.31 |
| 58   | Bahrain.....                  | 5.21  | 70.58  | 121  | Yemen.....                     | 4.10  | 37.95 |
| 59   | Mexico.....                   | 5.21  | 70.55  | 122  | Algeria.....                   | 4.10  | 37.77 |
| 60   | Morocco.....                  | 5.20  | 70.46  | 123  | Burundi.....                   | 3.91  | 32.22 |
| 61   | Trinidad and Tobago.....      | 5.20  | 70.35  | 124  | Ethiopia.....                  | 3.73  | 27.09 |
| 62   | Armenia.....                  | 5.15  | 68.72  | 125  | Venezuela, Bolivarian Rep..... | 2.82  | 0.00  |
| 63   | Peru.....                     | 5.14  | 68.60  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.



## 1.2.2 Ease of doing business

### Ease of doing business index | 2018

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | New Zealand              | 86.55 | 100.00 | 64   | Oman                       | 67.20 | 65.25 |
| 2    | Singapore                | 84.57 | 96.44  | 65   | Indonesia                  | 66.47 | 63.94 |
| 3    | Denmark                  | 84.06 | 95.53  | 66   | El Salvador                | 66.42 | 63.85 |
| 4    | Korea, Rep.              | 83.92 | 95.28  | 67   | Bhutan                     | 66.27 | 63.58 |
| 5    | United States of America | 82.54 | 92.80  | 68   | Ukraine                    | 65.75 | 62.64 |
| 6    | United Kingdom           | 82.22 | 92.22  | 69   | Kyrgyzstan                 | 65.70 | 62.55 |
| 7    | Norway                   | 82.16 | 92.12  | 70   | China                      | 65.29 | 61.82 |
| 8    | Georgia                  | 82.04 | 91.90  | 71   | Panama                     | 65.27 | 61.78 |
| 9    | Sweden                   | 81.27 | 90.52  | 72   | Kenya                      | 65.15 | 61.57 |
| 10   | Estonia                  | 80.80 | 89.67  | 73   | Botswana                   | 64.94 | 61.19 |
| 11   | Finland                  | 80.37 | 88.90  | 74   | South Africa               | 64.89 | 61.10 |
| 12   | Australia                | 80.14 | 88.49  | 75   | Qatar                      | 64.86 | 61.05 |
| 13   | Lithuania                | 79.87 | 88.00  | 76   | Malta                      | 64.72 | 60.79 |
| 14   | Ireland                  | 79.51 | 87.36  | 77   | Zambia                     | 64.50 | 60.40 |
| 15   | Canada                   | 79.29 | 86.96  | 78   | Bosnia and Herzegovina     | 64.20 | 59.86 |
| 16   | Latvia                   | 79.26 | 86.91  | 79   | Tunisia                    | 63.58 | 58.75 |
| 17   | Germany                  | 79.00 | 86.44  | 80   | Saudi Arabia               | 62.50 | 56.81 |
| 18   | United Arab Emirates     | 78.73 | 85.96  | 81   | Uruguay                    | 61.99 | 55.89 |
| 19   | Austria                  | 78.54 | 85.61  | 82   | Kuwait                     | 61.23 | 54.53 |
| 20   | Iceland                  | 78.50 | 85.54  | 83   | Guatemala                  | 61.18 | 54.44 |
| 21   | Malaysia                 | 78.43 | 85.42  | 84   | Dominican Republic         | 60.93 | 53.99 |
| 22   | Mauritius                | 77.54 | 83.82  | 85   | India                      | 60.76 | 53.68 |
| 23   | Thailand                 | 77.44 | 83.64  | 86   | Trinidad and Tobago        | 60.68 | 53.54 |
| 24   | Poland                   | 77.30 | 83.39  | 87   | Jordan                     | 60.58 | 53.36 |
| 25   | Spain                    | 77.02 | 82.88  | 88   | Lesotho                    | 60.42 | 53.07 |
| 26   | Portugal                 | 76.84 | 82.56  | 89   | Nepal                      | 59.95 | 52.23 |
| 27   | Czech Republic           | 76.27 | 81.54  | 90   | Namibia                    | 59.94 | 52.21 |
| 28   | France                   | 76.13 | 81.29  | 91   | Paraguay                   | 59.18 | 50.84 |
| 29   | Netherlands              | 76.03 | 81.11  | 92   | Malawi                     | 58.94 | 50.41 |
| 30   | Switzerland              | 75.92 | 80.91  | 93   | Sri Lanka                  | 58.86 | 50.27 |
| 31   | Japan                    | 75.68 | 80.48  | 94   | Philippines                | 58.74 | 50.05 |
| 32   | Russian Federation       | 75.50 | 80.15  | 95   | Honduras                   | 58.46 | 49.55 |
| 33   | Kazakhstan               | 75.44 | 80.05  | 96   | Argentina                  | 58.11 | 48.92 |
| 34   | Slovenia                 | 75.42 | 80.01  | 97   | Ecuador                    | 57.83 | 48.42 |
| 35   | Slovakia                 | 74.90 | 79.08  | 98   | Ghana                      | 57.24 | 47.36 |
| 36   | Rwanda                   | 73.40 | 76.38  | 99   | Uganda                     | 56.94 | 46.82 |
| 37   | Montenegro               | 73.18 | 75.99  | 100  | Tajikistan                 | 56.86 | 46.68 |
| 38   | Serbia                   | 73.13 | 75.90  | 101  | Iran, Islamic Rep.         | 56.48 | 45.99 |
| 39   | Moldova, Rep.            | 73.00 | 75.66  | 102  | Brazil                     | 56.45 | 45.94 |
| 40   | Romania                  | 72.87 | 75.43  | 103  | Egypt                      | 56.22 | 45.53 |
| 41   | Italy                    | 72.70 | 75.13  | 104  | Nicaragua                  | 55.39 | 44.04 |
| 42   | Armenia                  | 72.51 | 74.78  | 105  | Lebanon                    | 54.67 | 42.74 |
| 43   | Hungary                  | 72.39 | 74.57  | 106  | Cambodia                   | 54.47 | 42.39 |
| 44   | Mexico                   | 72.27 | 74.35  | 107  | Tanzania, United Rep.      | 54.04 | 41.61 |
| 45   | Bulgaria                 | 71.91 | 73.71  | 108  | Mozambique                 | 54.00 | 41.54 |
| 46   | Croatia                  | 71.70 | 73.33  | 109  | Senegal                    | 53.06 | 39.85 |
| 47   | Belgium                  | 71.69 | 73.31  | 110  | Laos                       | 53.01 | 39.76 |
| 48   | Cyprus                   | 71.63 | 73.20  | 111  | Mali                       | 52.92 | 39.60 |
| 49   | Israel                   | 71.42 | 72.83  | 112  | Nigeria                    | 52.03 | 38.00 |
| 50   | Chile                    | 71.22 | 72.47  | 113  | Gambia                     | 51.92 | 37.81 |
| 51   | Brunei Darussalam        | 70.60 | 71.35  | 114  | Pakistan                   | 51.65 | 37.32 |
| 52   | Azerbaijan               | 70.19 | 70.62  | 115  | Zimbabwe                   | 48.47 | 31.61 |
| 53   | Peru                     | 69.45 | 69.29  | 116  | Ethiopia                   | 47.77 | 30.35 |
| 54   | Colombia                 | 69.41 | 69.22  | 117  | Madagascar                 | 47.67 | 30.17 |
| 55   | Turkey                   | 69.14 | 68.73  | 118  | Cameroon                   | 47.23 | 29.38 |
| 56   | Costa Rica               | 69.13 | 68.71  | 119  | Burundi                    | 46.92 | 28.83 |
| 57   | Mongolia                 | 69.03 | 68.53  | 120  | Algeria                    | 46.71 | 28.45 |
| 58   | Luxembourg               | 69.01 | 68.50  | 121  | Liberia                    | 43.55 | 22.77 |
| 59   | Albania                  | 68.70 | 67.94  | 122  | Bangladesh                 | 40.99 | 18.18 |
| 60   | Bahrain                  | 68.13 | 66.92  | 123  | Congo, Dem. Rep.           | 37.65 | 12.18 |
| 61   | Greece                   | 68.02 | 66.72  | 124  | Yemen                      | 33.00 | 3.83  |
| 62   | Viet Nam                 | 67.93 | 66.56  | 125  | Venezuela, Bolivarian Rep. | 30.87 | 0.00  |
| 63   | Morocco                  | 67.91 | 66.52  |      |                            |       |       |

**SOURCE:** World Bank, *Doing Business 2018: Reforming to Create Jobs* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2018>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.2.3 Cluster development

**Average answer to the question: In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)? [1 = nonexistent; 7 = widespread in many fields] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | United States of America..... | 5.70  | 100.00 | 64   | Viet Nam.....                  | 3.77  | 38.63 |
| 2    | United Arab Emirates.....     | 5.44  | 91.65  | 65   | Bulgaria.....                  | 3.75  | 37.87 |
| 3    | Germany.....                  | 5.43  | 91.40  | 66   | Oman.....                      | 3.74  | 37.84 |
| 4    | Netherlands.....              | 5.40  | 90.54  | 67   | Estonia.....                   | 3.73  | 37.37 |
| 5    | United Kingdom.....           | 5.36  | 89.08  | 68   | Iran, Islamic Rep.....         | 3.73  | 37.30 |
| 6    | Italy.....                    | 5.34  | 88.51  | 69   | Guatemala.....                 | 3.72  | 37.11 |
| 7    | Qatar.....                    | 5.21  | 84.25  | 70   | Brunei Darussalam.....         | 3.68  | 35.94 |
| 8    | Singapore.....                | 5.18  | 83.37  | 71   | Slovenia.....                  | 3.68  | 35.65 |
| 9    | Japan.....                    | 5.15  | 82.35  | 72   | Bhutan.....                    | 3.65  | 34.95 |
| 10   | Switzerland.....              | 5.12  | 81.43  | 73   | Colombia.....                  | 3.65  | 34.89 |
| 11   | Malaysia.....                 | 5.09  | 80.44  | 74   | Honduras.....                  | 3.65  | 34.86 |
| 12   | Luxembourg.....               | 5.05  | 79.21  | 75   | Mali.....                      | 3.63  | 34.13 |
| 13   | Norway.....                   | 5.04  | 79.08  | 76   | Cyprus.....                    | 3.62  | 33.97 |
| 14   | Sweden.....                   | 5.04  | 79.05  | 77   | Trinidad and Tobago.....       | 3.61  | 33.62 |
| 15   | Finland.....                  | 5.02  | 78.32  | 78   | Uganda.....                    | 3.60  | 33.11 |
| 16   | Austria.....                  | 4.94  | 75.87  | 79   | Liberia.....                   | 3.57  | 32.25 |
| 17   | Belgium.....                  | 4.82  | 72.00  | 80   | Ethiopia.....                  | 3.56  | 31.97 |
| 18   | Ireland.....                  | 4.76  | 70.13  | 81   | Lesotho.....                   | 3.54  | 31.46 |
| 19   | France.....                   | 4.69  | 67.71  | 82   | Russian Federation.....        | 3.54  | 31.37 |
| 20   | Saudi Arabia.....             | 4.68  | 67.52  | 83   | Zambia.....                    | 3.54  | 31.27 |
| 21   | Denmark.....                  | 4.68  | 67.49  | 84   | Hungary.....                   | 3.53  | 30.98 |
| 22   | Canada.....                   | 4.62  | 65.68  | 85   | Namibia.....                   | 3.46  | 28.95 |
| 23   | Bahrain.....                  | 4.62  | 65.65  | 86   | Bosnia and Herzegovina.....    | 3.46  | 28.89 |
| 24   | Indonesia.....                | 4.59  | 64.83  | 87   | Senegal.....                   | 3.45  | 28.63 |
| 25   | China.....                    | 4.58  | 64.32  | 88   | Lithuania.....                 | 3.44  | 28.22 |
| 25   | Korea, Rep.....               | 4.58  | 64.32  | 89   | Armenia.....                   | 3.44  | 28.19 |
| 27   | South Africa.....             | 4.50  | 61.75  | 90   | Chile.....                     | 3.42  | 27.65 |
| 28   | Jordan.....                   | 4.44  | 59.94  | 91   | Nigeria.....                   | 3.41  | 27.37 |
| 29   | India.....                    | 4.43  | 59.49  | 92   | Latvia.....                    | 3.41  | 27.33 |
| 30   | Israel.....                   | 4.42  | 59.24  | 93   | Serbia.....                    | 3.37  | 25.97 |
| 31   | Mauritius.....                | 4.35  | 57.14  | 94   | Nepal.....                     | 3.37  | 25.94 |
| 32   | Malta.....                    | 4.34  | 56.89  | 95   | Botswana.....                  | 3.35  | 25.24 |
| 33   | Azerbaijan.....               | 4.34  | 56.79  | 96   | Argentina.....                 | 3.28  | 22.95 |
| 34   | Spain.....                    | 4.31  | 55.65  | 97   | Uruguay.....                   | 3.27  | 22.89 |
| 35   | Kenya.....                    | 4.24  | 53.71  | 98   | Peru.....                      | 3.22  | 21.05 |
| 36   | Mexico.....                   | 4.21  | 52.51  | 99   | Cameroon.....                  | 3.16  | 19.37 |
| 37   | Portugal.....                 | 4.19  | 51.84  | 100  | Algeria.....                   | 3.15  | 18.83 |
| 38   | Ghana.....                    | 4.17  | 51.33  | 101  | Ukraine.....                   | 3.13  | 18.41 |
| 39   | Brazil.....                   | 4.14  | 50.25  | 102  | Montenegro.....                | 3.13  | 18.22 |
| 40   | Rwanda.....                   | 4.13  | 49.94  | 103  | Burundi.....                   | 3.11  | 17.59 |
| 41   | Iceland.....                  | 4.10  | 49.05  | 104  | Congo, Dem. Rep.....           | 3.10  | 17.43 |
| 42   | New Zealand.....              | 4.09  | 48.67  | 105  | Paraguay.....                  | 3.10  | 17.33 |
| 43   | Costa Rica.....               | 4.07  | 48.10  | 106  | Ecuador.....                   | 3.09  | 17.21 |
| 44   | Panama.....                   | 4.07  | 48.03  | 107  | Mozambique.....                | 3.08  | 16.67 |
| 45   | Kuwait.....                   | 4.06  | 47.97  | 108  | Albania.....                   | 3.08  | 16.60 |
| 46   | Cambodia.....                 | 4.03  | 46.95  | 109  | Madagascar.....                | 3.03  | 15.30 |
| 47   | Gambia.....                   | 3.99  | 45.71  | 110  | Tunisia.....                   | 3.03  | 15.14 |
| 48   | Australia.....                | 3.98  | 45.40  | 111  | Romania.....                   | 3.02  | 14.79 |
| 49   | Czech Republic.....           | 3.94  | 44.03  | 112  | Tajikistan.....                | 3.01  | 14.63 |
| 50   | Laos.....                     | 3.93  | 43.84  | 113  | Greece.....                    | 3.00  | 14.10 |
| 51   | Sri Lanka.....                | 3.93  | 43.75  | 114  | El Salvador.....               | 2.96  | 12.86 |
| 52   | Pakistan.....                 | 3.88  | 42.16  | 114  | Nicaragua.....                 | 2.96  | 12.86 |
| 53   | Egypt.....                    | 3.86  | 41.59  | 116  | Kazakhstan.....                | 2.95  | 12.67 |
| 54   | Slovakia.....                 | 3.84  | 41.02  | 117  | Georgia.....                   | 2.95  | 12.57 |
| 55   | Tanzania, United Rep.....     | 3.84  | 40.76  | 118  | Malawi.....                    | 2.94  | 12.35 |
| 56   | Turkey.....                   | 3.82  | 40.25  | 119  | Yemen.....                     | 2.93  | 12.03 |
| 57   | Morocco.....                  | 3.82  | 40.10  | 120  | Croatia.....                   | 2.92  | 11.71 |
| 58   | Lebanon.....                  | 3.80  | 39.68  | 121  | Kyrgyzstan.....                | 2.80  | 7.78  |
| 59   | Philippines.....              | 3.80  | 39.46  | 122  | Mongolia.....                  | 2.78  | 7.14  |
| 60   | Dominican Republic.....       | 3.79  | 39.33  | 123  | Moldova, Rep.....              | 2.64  | 2.73  |
| 60   | Poland.....                   | 3.79  | 39.33  | 123  | Zimbabwe.....                  | 2.64  | 2.73  |
| 62   | Bangladesh.....               | 3.79  | 39.30  | 125  | Venezuela, Bolivarian Rep..... | 2.55  | 0.00  |
| 63   | Thailand.....                 | 3.77  | 38.67  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.2.4 R&D expenditure

### Gross expenditure on R&D (%) | 2016

| Rank | Country                        | Value | Score  | Rank | Country                         | Value | Score |
|------|--------------------------------|-------|--------|------|---------------------------------|-------|-------|
| 1    | Israel .....                   | 4.25  | 100.00 | 64   | Ecuador .....                   | 0.44  | 10.10 |
| 2    | Korea, Rep. ....               | 4.24  | 99.70  | 65   | Viet Nam .....                  | 0.44  | 10.06 |
| 3    | Switzerland .....              | 3.37  | 79.30  | 66   | Kuwait .....                    | 0.43  | 9.73  |
| 4    | Sweden .....                   | 3.25  | 76.48  | 67   | Ghana .....                     | 0.38  | 8.54  |
| 5    | Japan .....                    | 3.15  | 73.92  | 68   | Montenegro .....                | 0.37  | 8.47  |
| 6    | Austria .....                  | 3.09  | 72.52  | 69   | Chile .....                     | 0.37  | 8.31  |
| 7    | Germany .....                  | 2.94  | 69.04  | 70   | Uruguay .....                   | 0.36  | 8.25  |
| 8    | Denmark .....                  | 2.87  | 67.42  | 71   | Namibia .....                   | 0.34  | 7.67  |
| 9    | Finland .....                  | 2.75  | 64.53  | 72   | Mozambique .....                | 0.34  | 7.61  |
| 10   | United States of America ..... | 2.74  | 64.43  | 73   | Jordan .....                    | 0.33  | 7.48  |
| 11   | Belgium .....                  | 2.49  | 58.33  | 74   | Moldova, Rep. ....              | 0.33  | 7.46  |
| 12   | France .....                   | 2.25  | 52.71  | 75   | Mali .....                      | 0.31  | 7.07  |
| 13   | Singapore .....                | 2.18  | 51.20  | 76   | Nepal .....                     | 0.30  | 6.78  |
| 14   | China .....                    | 2.11  | 49.38  | 77   | Georgia .....                   | 0.30  | 6.75  |
| 15   | Iceland .....                  | 2.10  | 49.27  | 78   | Zambia .....                    | 0.28  | 6.21  |
| 16   | Netherlands .....              | 2.03  | 47.62  | 79   | Colombia .....                  | 0.27  | 6.04  |
| 17   | Norway .....                   | 2.03  | 47.62  | 80   | Iran, Islamic Rep. ....         | 0.25  | 5.61  |
| 18   | Slovenia .....                 | 2.00  | 46.91  | 81   | Oman .....                      | 0.25  | 5.46  |
| 19   | Australia .....                | 1.93  | 45.16  | 82   | Pakistan .....                  | 0.25  | 5.45  |
| 20   | United Kingdom .....           | 1.69  | 39.55  | 83   | Venezuela, Bolivarian Rep. .... | 0.25  | 5.45  |
| 21   | Czech Republic .....           | 1.68  | 39.26  | 84   | Armenia .....                   | 0.23  | 5.13  |
| 22   | Canada .....                   | 1.61  | 37.66  | 85   | Bosnia and Herzegovina .....    | 0.22  | 4.74  |
| 23   | Malaysia .....                 | 1.30  | 30.35  | 86   | Azerbaijan .....                | 0.21  | 4.52  |
| 24   | Italy .....                    | 1.29  | 30.00  | 87   | Mongolia .....                  | 0.18  | 3.98  |
| 25   | Estonia .....                  | 1.28  | 29.89  | 88   | Mauritius .....                 | 0.18  | 3.84  |
| 26   | New Zealand .....              | 1.28  | 29.80  | 89   | Uganda .....                    | 0.17  | 3.67  |
| 27   | Brazil .....                   | 1.28  | 29.75  | 90   | Albania .....                   | 0.15  | 3.28  |
| 28   | Portugal .....                 | 1.27  | 29.57  | 91   | Kazakhstan .....                | 0.14  | 2.99  |
| 29   | Luxembourg .....               | 1.24  | 29.00  | 92   | Philippines .....               | 0.14  | 2.90  |
| 30   | Hungary .....                  | 1.21  | 28.12  | 93   | Gambia .....                    | 0.13  | 2.79  |
| 31   | Spain .....                    | 1.19  | 27.63  | 94   | El Salvador .....               | 0.13  | 2.69  |
| 32   | Ireland .....                  | 1.18  | 27.43  | 95   | Paraguay .....                  | 0.13  | 2.68  |
| 33   | Russian Federation .....       | 1.10  | 25.54  | 96   | Burundi .....                   | 0.12  | 2.51  |
| 34   | Greece .....                   | 1.01  | 23.42  | 97   | Peru .....                      | 0.12  | 2.48  |
| 35   | United Arab Emirates .....     | 0.99  | 22.94  | 98   | Cambodia .....                  | 0.12  | 2.44  |
| 36   | Poland .....                   | 0.97  | 22.44  | 99   | Kyrgyzstan .....                | 0.12  | 2.38  |
| 37   | Serbia .....                   | 0.89  | 20.67  | 100  | Nicaragua .....                 | 0.11  | 2.18  |
| 38   | Turkey .....                   | 0.88  | 20.45  | 101  | Tajikistan .....                | 0.11  | 2.17  |
| 39   | Croatia .....                  | 0.86  | 19.86  | 102  | Bahrain .....                   | 0.10  | 2.03  |
| 40   | Lithuania .....                | 0.85  | 19.66  | 103  | Sri Lanka .....                 | 0.10  | 2.00  |
| 41   | Saudi Arabia .....             | 0.82  | 18.89  | 104  | Trinidad and Tobago .....       | 0.09  | 1.81  |
| 42   | South Africa .....             | 0.80  | 18.50  | 105  | Indonesia .....                 | 0.08  | 1.65  |
| 43   | Slovakia .....                 | 0.79  | 18.29  | 106  | Panama .....                    | 0.06  | 1.14  |
| 44   | Kenya .....                    | 0.79  | 18.20  | 107  | Lesotho .....                   | 0.05  | 0.78  |
| 45   | Bulgaria .....                 | 0.78  | 18.06  | 108  | Guatemala .....                 | 0.03  | 0.35  |
| 46   | Senegal .....                  | 0.75  | 17.39  | 109  | Congo, Dem. Rep. ....           | 0.02  | 0.04  |
| 47   | Morocco .....                  | 0.71  | 16.51  | 110  | Honduras .....                  | 0.02  | 0.00  |
| 48   | Egypt .....                    | 0.71  | 16.38  | 111  | Madagascar .....                | 0.01  | 0.00  |
| 49   | Argentina .....                | 0.63  | 14.50  |      | Algeria .....                   | n/a   | n/a   |
| 50   | India .....                    | 0.62  | 14.37  |      | Bangladesh .....                | n/a   | n/a   |
| 51   | Thailand .....                 | 0.62  | 14.26  |      | Bhutan .....                    | n/a   | n/a   |
| 52   | Malta .....                    | 0.61  | 14.10  |      | Brunei Darussalam .....         | n/a   | n/a   |
| 53   | Ethiopia .....                 | 0.60  | 13.92  |      | Cameroon .....                  | n/a   | n/a   |
| 54   | Tunisia .....                  | 0.60  | 13.81  |      | Dominican Republic .....        | n/a   | n/a   |
| 55   | Costa Rica .....               | 0.57  | 13.13  |      | Laos .....                      | n/a   | n/a   |
| 56   | Botswana .....                 | 0.54  | 12.33  |      | Lebanon .....                   | n/a   | n/a   |
| 57   | Tanzania, United Rep. ....     | 0.53  | 12.14  |      | Liberia .....                   | n/a   | n/a   |
| 58   | Qatar .....                    | 0.51  | 11.68  |      | Malawi .....                    | n/a   | n/a   |
| 59   | Cyprus .....                   | 0.50  | 11.55  |      | Nigeria .....                   | n/a   | n/a   |
| 60   | Mexico .....                   | 0.50  | 11.46  |      | Rwanda .....                    | n/a   | n/a   |
| 61   | Ukraine .....                  | 0.48  | 11.07  |      | Yemen .....                     | n/a   | n/a   |
| 62   | Romania .....                  | 0.48  | 11.04  |      | Zimbabwe .....                  | n/a   | n/a   |
| 63   | Latvia .....                   | 0.44  | 10.10  |      |                                 |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.2.5 ICT infrastructure

### ICT access index | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Luxembourg               | 9.54  | 100.00 | 64   | Turkey                     | 6.30  | 58.78 |
| 2    | Iceland                  | 9.38  | 97.96  | 65   | Georgia                    | 6.26  | 58.27 |
| 3    | United Kingdom           | 9.15  | 95.04  | 66   | Brazil                     | 6.25  | 58.14 |
| 4    | Malta                    | 9.02  | 93.38  | 67   | Morocco                    | 6.06  | 55.73 |
| 5    | Germany                  | 8.93  | 92.24  | 68   | Jordan                     | 6.03  | 55.34 |
| 6    | Korea, Rep.              | 8.85  | 91.22  | 69   | Panama                     | 5.95  | 54.33 |
| 6    | Switzerland              | 8.85  | 91.22  | 70   | Colombia                   | 5.88  | 53.44 |
| 8    | Japan                    | 8.80  | 90.59  | 71   | Bosnia and Herzegovina     | 5.84  | 52.93 |
| 9    | Netherlands              | 8.65  | 88.68  | 72   | China                      | 5.58  | 49.62 |
| 10   | France                   | 8.64  | 88.55  | 73   | South Africa               | 5.48  | 48.35 |
| 11   | Singapore                | 8.61  | 88.17  | 73   | Thailand                   | 5.48  | 48.35 |
| 12   | Sweden                   | 8.55  | 87.40  | 75   | Egypt                      | 5.40  | 47.33 |
| 13   | Denmark                  | 8.39  | 85.37  | 76   | Mexico                     | 5.28  | 45.80 |
| 14   | Austria                  | 8.38  | 85.24  | 77   | Venezuela, Bolivarian Rep. | 5.15  | 44.15 |
| 15   | New Zealand              | 8.34  | 84.73  | 78   | Algeria                    | 5.14  | 44.02 |
| 16   | United States of America | 8.27  | 83.84  | 79   | Tunisia                    | 5.11  | 43.64 |
| 17   | Israel                   | 8.17  | 82.57  | 80   | Ecuador                    | 4.93  | 41.35 |
| 18   | Estonia                  | 8.16  | 82.44  | 81   | Botswana                   | 4.90  | 40.97 |
| 19   | Belgium                  | 8.15  | 82.32  | 81   | Peru                       | 4.90  | 40.97 |
| 20   | Bahrain                  | 8.14  | 82.19  | 83   | Philippines                | 4.87  | 40.59 |
| 20   | Ireland                  | 8.14  | 82.19  | 84   | Indonesia                  | 4.85  | 40.33 |
| 22   | United Arab Emirates     | 8.11  | 81.81  | 85   | Albania                    | 4.80  | 39.69 |
| 23   | Australia                | 8.00  | 80.41  | 86   | El Salvador                | 4.75  | 39.06 |
| 23   | Norway                   | 8.00  | 80.41  | 86   | Viet Nam                   | 4.75  | 39.06 |
| 25   | Spain                    | 7.98  | 80.15  | 88   | Mongolia                   | 4.74  | 38.93 |
| 26   | Canada                   | 7.93  | 79.52  | 89   | Sri Lanka                  | 4.66  | 37.91 |
| 27   | Portugal                 | 7.91  | 79.26  | 90   | Kyrgyzstan                 | 4.54  | 36.39 |
| 27   | Slovenia                 | 7.91  | 79.26  | 91   | Guatemala                  | 4.52  | 36.13 |
| 29   | Qatar                    | 7.90  | 79.13  | 92   | Paraguay                   | 4.41  | 34.73 |
| 30   | Cyprus                   | 7.86  | 78.63  | 93   | Namibia                    | 4.39  | 34.48 |
| 31   | Hungary                  | 7.78  | 77.61  | 94   | Ghana                      | 4.36  | 34.10 |
| 32   | Greece                   | 7.76  | 77.35  | 95   | Dominican Republic         | 4.30  | 33.33 |
| 33   | Croatia                  | 7.60  | 75.32  | 96   | Nicaragua                  | 4.19  | 31.93 |
| 34   | Poland                   | 7.58  | 75.06  | 97   | Cambodia                   | 4.16  | 31.55 |
| 35   | Moldova, Rep.            | 7.56  | 74.81  | 98   | Bhutan                     | 4.09  | 30.66 |
| 36   | Kazakhstan               | 7.55  | 74.68  | 99   | Honduras                   | 4.08  | 30.53 |
| 37   | Brunei Darussalam        | 7.47  | 73.66  | 100  | Gambia                     | 3.77  | 26.59 |
| 38   | Latvia                   | 7.41  | 72.90  | 101  | Lesotho                    | 3.72  | 25.95 |
| 39   | Finland                  | 7.35  | 72.14  | 102  | Kenya                      | 3.63  | 24.81 |
| 40   | Italy                    | 7.33  | 71.88  | 103  | Nepal                      | 3.62  | 24.68 |
| 41   | Oman                     | 7.32  | 71.76  | 104  | India                      | 3.60  | 24.43 |
| 42   | Uruguay                  | 7.28  | 71.25  | 105  | Senegal                    | 3.57  | 24.05 |
| 43   | Russian Federation       | 7.23  | 70.61  | 106  | Laos                       | 3.47  | 22.77 |
| 44   | Slovakia                 | 7.22  | 70.48  | 107  | Zimbabwe                   | 3.40  | 21.88 |
| 45   | Saudi Arabia             | 7.21  | 70.36  | 108  | Pakistan                   | 3.34  | 21.12 |
| 46   | Serbia                   | 7.20  | 70.23  | 109  | Mali                       | 3.16  | 18.83 |
| 47   | Trinidad and Tobago      | 7.18  | 69.97  | 109  | Nigeria                    | 3.16  | 18.83 |
| 48   | Czech Republic           | 7.14  | 69.47  | 111  | Bangladesh                 | 3.05  | 17.43 |
| 49   | Kuwait                   | 7.12  | 69.21  | 112  | Zambia                     | 2.85  | 14.89 |
| 50   | Lithuania                | 7.11  | 69.08  | 113  | Cameroon                   | 2.84  | 14.76 |
| 51   | Mauritius                | 7.04  | 68.19  | 114  | Rwanda                     | 2.67  | 12.60 |
| 52   | Montenegro               | 7.03  | 68.07  | 115  | Mozambique                 | 2.53  | 10.81 |
| 53   | Romania                  | 6.98  | 67.43  | 116  | Tanzania, United Rep.      | 2.52  | 10.69 |
| 54   | Malaysia                 | 6.93  | 66.79  | 117  | Uganda                     | 2.46  | 9.92  |
| 55   | Lebanon                  | 6.92  | 66.67  | 118  | Ethiopia                   | 2.35  | 8.52  |
| 56   | Argentina                | 6.87  | 66.03  | 119  | Madagascar                 | 2.29  | 7.76  |
| 57   | Bulgaria                 | 6.83  | 65.52  | 120  | Malawi                     | 2.18  | 6.36  |
| 58   | Chile                    | 6.79  | 65.01  | 121  | Burundi                    | 2.14  | 5.85  |
| 59   | Iran, Islamic Rep.       | 6.74  | 64.38  | 122  | Congo, Dem. Rep.           | 1.68  | 0.00  |
| 60   | Azerbaijan               | 6.62  | 62.85  |      | Liberia                    | n/a   | n/a   |
| 61   | Ukraine                  | 6.60  | 62.60  |      | Tajikistan                 | n/a   | n/a   |
| 62   | Armenia                  | 6.52  | 61.58  |      | Yemen                      | n/a   | n/a   |
| 63   | Costa Rica               | 6.40  | 60.05  |      |                            |       |       |

**SOURCE:** International Telecommunication Union, *Measuring the Information Society Report 2017*, ICT Development Index 2017 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.2.6 Technology utilisation

**Average answer to the question: In your country, to what extent do businesses adopt the latest technologies? [1 = not at all; 7 = to a great extent] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Sweden.....                   | 6.02  | 100.00 | 64   | Namibia.....                   | 4.41  | 48.19 |
| 2    | United States of America..... | 6.01  | 99.65  | 65   | Kuwait.....                    | 4.40  | 48.03 |
| 3    | Netherlands.....              | 5.90  | 96.00  | 66   | Albania.....                   | 4.39  | 47.62 |
| 4    | Switzerland.....              | 5.89  | 95.58  | 67   | Russian Federation.....        | 4.37  | 47.20 |
| 5    | Iceland.....                  | 5.88  | 95.39  | 68   | India.....                     | 4.35  | 46.50 |
| 6    | Finland.....                  | 5.87  | 95.10  | 69   | Greece.....                    | 4.34  | 46.21 |
| 7    | Norway.....                   | 5.82  | 93.47  | 70   | Trinidad and Tobago.....       | 4.34  | 46.14 |
| 8    | Israel.....                   | 5.76  | 91.58  | 71   | Armenia.....                   | 4.34  | 46.05 |
| 9    | Denmark.....                  | 5.75  | 91.07  | 72   | Brunei Darussalam.....         | 4.33  | 45.76 |
| 10   | United Arab Emirates.....     | 5.72  | 90.27  | 73   | Sri Lanka.....                 | 4.33  | 45.73 |
| 11   | Luxembourg.....               | 5.70  | 89.70  | 74   | Nigeria.....                   | 4.33  | 45.63 |
| 12   | Germany.....                  | 5.65  | 88.03  | 75   | Kazakhstan.....                | 4.30  | 44.93 |
| 13   | United Kingdom.....           | 5.62  | 87.10  | 76   | Dominican Republic.....        | 4.29  | 44.48 |
| 14   | Singapore.....                | 5.59  | 86.24  | 77   | Colombia.....                  | 4.28  | 44.03 |
| 15   | Japan.....                    | 5.52  | 83.78  | 77   | Ukraine.....                   | 4.28  | 44.03 |
| 16   | New Zealand.....              | 5.47  | 82.14  | 79   | Mongolia.....                  | 4.27  | 44.00 |
| 17   | Malaysia.....                 | 5.44  | 81.34  | 80   | Lebanon.....                   | 4.27  | 43.94 |
| 18   | Qatar.....                    | 5.36  | 78.85  | 81   | Montenegro.....                | 4.27  | 43.90 |
| 19   | Austria.....                  | 5.36  | 78.72  | 82   | Pakistan.....                  | 4.26  | 43.58 |
| 20   | Estonia.....                  | 5.34  | 77.95  | 83   | Madagascar.....                | 4.25  | 43.30 |
| 21   | Ireland.....                  | 5.31  | 77.12  | 84   | Cambodia.....                  | 4.25  | 43.07 |
| 22   | Lithuania.....                | 5.31  | 77.09  | 85   | Croatia.....                   | 4.24  | 42.91 |
| 23   | Korea, Rep.....               | 5.31  | 76.99  | 86   | Bosnia and Herzegovina.....    | 4.23  | 42.72 |
| 24   | Australia.....                | 5.29  | 76.48  | 87   | Viet Nam.....                  | 4.23  | 42.56 |
| 25   | Belgium.....                  | 5.29  | 76.42  | 88   | Ecuador.....                   | 4.22  | 42.40 |
| 26   | Canada.....                   | 5.29  | 76.35  | 89   | Romania.....                   | 4.20  | 41.50 |
| 27   | Portugal.....                 | 5.22  | 74.34  | 90   | Bangladesh.....                | 4.19  | 41.18 |
| 28   | France.....                   | 5.15  | 71.87  | 91   | Ghana.....                     | 4.17  | 40.67 |
| 29   | Malta.....                    | 5.14  | 71.62  | 92   | Botswana.....                  | 4.16  | 40.45 |
| 30   | Saudi Arabia.....             | 5.10  | 70.53  | 93   | Bhutan.....                    | 4.15  | 39.87 |
| 31   | Czech Republic.....           | 5.08  | 69.89  | 94   | Egypt.....                     | 4.13  | 39.49 |
| 32   | Bahrain.....                  | 5.08  | 69.79  | 95   | Argentina.....                 | 4.13  | 39.36 |
| 33   | Panama.....                   | 5.06  | 69.22  | 96   | Laos.....                      | 4.09  | 38.11 |
| 34   | Kenya.....                    | 5.05  | 68.93  | 97   | Tanzania, United Rep.....      | 4.06  | 37.06 |
| 35   | Chile.....                    | 5.05  | 68.83  | 98   | Tajikistan.....                | 4.06  | 37.02 |
| 36   | South Africa.....             | 5.01  | 67.49  | 99   | Peru.....                      | 4.05  | 36.93 |
| 37   | Indonesia.....                | 4.98  | 66.46  | 100  | Moldova, Rep.....              | 4.04  | 36.51 |
| 38   | Costa Rica.....               | 4.96  | 66.02  | 101  | Uganda.....                    | 4.04  | 36.45 |
| 39   | Guatemala.....                | 4.95  | 65.57  | 102  | Georgia.....                   | 4.02  | 35.94 |
| 40   | Thailand.....                 | 4.89  | 63.81  | 103  | Hungary.....                   | 3.97  | 34.30 |
| 41   | Jordan.....                   | 4.88  | 63.52  | 104  | Paraguay.....                  | 3.96  | 33.89 |
| 42   | Azerbaijan.....               | 4.88  | 63.33  | 105  | Tunisia.....                   | 3.96  | 33.82 |
| 43   | Slovenia.....                 | 4.86  | 62.69  | 106  | Cameroon.....                  | 3.95  | 33.73 |
| 44   | Turkey.....                   | 4.80  | 60.90  | 107  | Zambia.....                    | 3.93  | 32.90 |
| 45   | Senegal.....                  | 4.8   | 60.83  | 108  | El Salvador.....               | 3.93  | 32.83 |
| 46   | Slovakia.....                 | 4.80  | 60.83  | 108  | Mali.....                      | 3.93  | 32.83 |
| 47   | Rwanda.....                   | 4.75  | 59.26  | 110  | Nicaragua.....                 | 3.91  | 32.38 |
| 48   | Mauritius.....                | 4.75  | 59.23  | 111  | Serbia.....                    | 3.87  | 30.91 |
| 49   | Oman.....                     | 4.67  | 56.58  | 112  | Iran, Islamic Rep.....         | 3.82  | 29.41 |
| 49   | Philippines.....              | 4.67  | 56.58  | 113  | Mozambique.....                | 3.81  | 29.18 |
| 51   | Spain.....                    | 4.64  | 55.78  | 114  | Zimbabwe.....                  | 3.78  | 28.10 |
| 52   | Poland.....                   | 4.61  | 54.72  | 115  | Algeria.....                   | 3.77  | 27.87 |
| 53   | Mexico.....                   | 4.60  | 54.43  | 116  | Venezuela, Bolivarian Rep..... | 3.67  | 24.51 |
| 54   | Gambia.....                   | 4.57  | 53.54  | 117  | Nepal.....                     | 3.66  | 24.19 |
| 55   | China.....                    | 4.56  | 53.15  | 118  | Congo, Dem. Rep.....           | 3.43  | 17.12 |
| 56   | Brazil.....                   | 4.55  | 52.86  | 119  | Kyrgyzstan.....                | 3.37  | 15.14 |
| 57   | Italy.....                    | 4.53  | 52.26  | 120  | Malawi.....                    | 3.36  | 14.78 |
| 58   | Morocco.....                  | 4.52  | 51.90  | 121  | Liberia.....                   | 3.30  | 12.74 |
| 59   | Cyprus.....                   | 4.52  | 51.78  | 122  | Ethiopia.....                  | 3.29  | 12.42 |
| 60   | Honduras.....                 | 4.49  | 50.78  | 123  | Lesotho.....                   | 3.19  | 9.31  |
| 61   | Bulgaria.....                 | 4.46  | 50.05  | 124  | Yemen.....                     | 2.93  | 0.93  |
| 62   | Latvia.....                   | 4.45  | 49.50  | 125  | Burundi.....                   | 2.90  | 0.00  |
| 63   | Uruguay.....                  | 4.42  | 48.74  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.3.1 Ease of hiring

### Hiring indicators | 2018

| Rank | Country                       | Value | Score  | Rank | Country                        | Value  | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|--------|-------|
| 1    | Azerbaijan.....               | 0.00  | 100.00 | 58   | Kyrgyzstan.....                | 33.33  | 66.67 |
| 1    | Bahrain.....                  | 0.00  | 100.00 | 58   | Latvia.....                    | 33.33  | 66.67 |
| 1    | Bangladesh.....               | 0.00  | 100.00 | 58   | Lesotho.....                   | 33.33  | 66.67 |
| 1    | Bhutan.....                   | 0.00  | 100.00 | 58   | Liberia.....                   | 33.33  | 66.67 |
| 1    | Botswana.....                 | 0.00  | 100.00 | 58   | Mauritius.....                 | 33.33  | 66.67 |
| 1    | Brunei Darussalam.....        | 0.00  | 100.00 | 58   | Mexico.....                    | 33.33  | 66.67 |
| 1    | Burundi.....                  | 0.00  | 100.00 | 58   | Netherlands.....               | 33.33  | 66.67 |
| 1    | Denmark.....                  | 0.00  | 100.00 | 58   | Nicaragua.....                 | 33.33  | 66.67 |
| 1    | Egypt.....                    | 0.00  | 100.00 | 58   | Sweden.....                    | 33.33  | 66.67 |
| 1    | Gambia.....                   | 0.00  | 100.00 | 58   | Zimbabwe.....                  | 33.33  | 66.67 |
| 1    | Ghana.....                    | 0.00  | 100.00 | 74   | Russian Federation.....        | 38.83  | 61.17 |
| 1    | Kazakhstan.....               | 0.00  | 100.00 | 75   | Tunisia.....                   | 39.00  | 61.00 |
| 1    | Kuwait.....                   | 0.00  | 100.00 | 76   | Albania.....                   | 44.33  | 55.67 |
| 1    | Lithuania.....                | 0.00  | 100.00 | 76   | Algeria.....                   | 44.33  | 55.67 |
| 1    | Malaysia.....                 | 0.00  | 100.00 | 76   | Armenia.....                   | 44.33  | 55.67 |
| 1    | Namibia.....                  | 0.00  | 100.00 | 76   | Croatia.....                   | 44.33  | 55.67 |
| 1    | Nigeria.....                  | 0.00  | 100.00 | 76   | Cyprus.....                    | 44.33  | 55.67 |
| 1    | Qatar.....                    | 0.00  | 100.00 | 76   | Dominican Republic.....        | 44.33  | 55.67 |
| 1    | Rwanda.....                   | 0.00  | 100.00 | 76   | Finland.....                   | 44.33  | 55.67 |
| 1    | Singapore.....                | 0.00  | 100.00 | 76   | Greece.....                    | 44.33  | 55.67 |
| 1    | Sri Lanka.....                | 0.00  | 100.00 | 76   | Iceland.....                   | 44.33  | 55.67 |
| 1    | Switzerland.....              | 0.00  | 100.00 | 76   | Korea, Rep.....                | 44.33  | 55.67 |
| 1    | Trinidad and Tobago.....      | 0.00  | 100.00 | 76   | Lebanon.....                   | 44.33  | 55.67 |
| 1    | Uganda.....                   | 0.00  | 100.00 | 76   | Moldova, Rep.....              | 44.33  | 55.67 |
| 1    | United Arab Emirates.....     | 0.00  | 100.00 | 76   | Montenegro.....                | 44.33  | 55.67 |
| 26   | United States of America..... | 5.50  | 94.50  | 76   | Peru.....                      | 44.33  | 55.67 |
| 27   | Australia.....                | 11.00 | 89.00  | 76   | Poland.....                    | 44.33  | 55.67 |
| 27   | Austria.....                  | 11.00 | 89.00  | 76   | Romania.....                   | 44.33  | 55.67 |
| 27   | Belgium.....                  | 11.00 | 89.00  | 76   | Slovakia.....                  | 44.33  | 55.67 |
| 27   | Canada.....                   | 11.00 | 89.00  | 76   | South Africa.....              | 44.33  | 55.67 |
| 27   | China.....                    | 11.00 | 89.00  | 76   | Tajikistan.....                | 44.33  | 55.67 |
| 27   | Colombia.....                 | 11.00 | 89.00  | 76   | Tanzania, United Rep.....      | 44.33  | 55.67 |
| 27   | Czech Republic.....           | 11.00 | 89.00  | 76   | Thailand.....                  | 44.33  | 55.67 |
| 27   | Germany.....                  | 11.00 | 89.00  | 76   | Turkey.....                    | 44.33  | 55.67 |
| 27   | Hungary.....                  | 11.00 | 89.00  | 76   | Ukraine.....                   | 44.33  | 55.67 |
| 27   | Ireland.....                  | 11.00 | 89.00  | 99   | Argentina.....                 | 55.67  | 44.33 |
| 27   | Israel.....                   | 11.00 | 89.00  | 99   | Ecuador.....                   | 55.67  | 44.33 |
| 27   | Japan.....                    | 11.00 | 89.00  | 99   | El Salvador.....               | 55.67  | 44.33 |
| 27   | Mongolia.....                 | 11.00 | 89.00  | 99   | Malawi.....                    | 55.67  | 44.33 |
| 27   | New Zealand.....              | 11.00 | 89.00  | 99   | Mali.....                      | 55.67  | 44.33 |
| 27   | Oman.....                     | 11.00 | 89.00  | 99   | Paraguay.....                  | 55.67  | 44.33 |
| 27   | United Kingdom.....           | 11.00 | 89.00  | 105  | Portugal.....                  | 61.00  | 39.00 |
| 27   | Uruguay.....                  | 11.00 | 89.00  | 105  | Spain.....                     | 61.00  | 39.00 |
| 27   | Yemen.....                    | 11.00 | 89.00  | 107  | Guatemala.....                 | 66.67  | 33.33 |
| 45   | Saudi Arabia.....             | 16.67 | 83.33  | 107  | Mozambique.....                | 66.67  | 33.33 |
| 46   | Iran, Islamic Rep.....        | 22.33 | 77.67  | 107  | Nepal.....                     | 66.67  | 33.33 |
| 46   | Jordan.....                   | 22.33 | 77.67  | 107  | Zambia.....                    | 66.67  | 33.33 |
| 46   | Philippines.....              | 22.33 | 77.67  | 111  | Indonesia.....                 | 72.33  | 27.67 |
| 46   | Viet Nam.....                 | 22.33 | 77.67  | 112  | Brazil.....                    | 77.67  | 22.33 |
| 50   | Bosnia and Herzegovina.....   | 27.67 | 72.33  | 112  | Costa Rica.....                | 77.67  | 22.33 |
| 50   | Bulgaria.....                 | 27.67 | 72.33  | 112  | France.....                    | 77.67  | 22.33 |
| 50   | Cameroon.....                 | 27.67 | 72.33  | 112  | Luxembourg.....                | 77.67  | 22.33 |
| 50   | Italy.....                    | 27.67 | 72.33  | 112  | Panama.....                    | 77.67  | 22.33 |
| 50   | Laos.....                     | 27.67 | 72.33  | 112  | Serbia.....                    | 77.67  | 22.33 |
| 50   | Malta.....                    | 27.67 | 72.33  | 112  | Slovenia.....                  | 77.67  | 22.33 |
| 50   | Norway.....                   | 27.67 | 72.33  | 119  | Congo, Dem. Rep.....           | 83.33  | 16.67 |
| 57   | India.....                    | 27.83 | 72.17  | 120  | Pakistan.....                  | 89.00  | 11.00 |
| 58   | Cambodia.....                 | 33.33 | 66.67  | 121  | Honduras.....                  | 100.00 | 0.00  |
| 58   | Chile.....                    | 33.33 | 66.67  | 121  | Madagascar.....                | 100.00 | 0.00  |
| 58   | Estonia.....                  | 33.33 | 66.67  | 121  | Morocco.....                   | 100.00 | 0.00  |
| 58   | Ethiopia.....                 | 33.33 | 66.67  | 121  | Senegal.....                   | 100.00 | 0.00  |
| 58   | Georgia.....                  | 33.33 | 66.67  | 121  | Venezuela, Bolivarian Rep..... | 100.00 | 0.00  |
| 58   | Kenya.....                    | 33.33 | 66.67  |      |                                |        |       |

**SOURCE:** World Bank, *Doing Business 2018: Reforming to Create Jobs* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2018>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.3.2 Ease of redundancy

### Redundancy indicators | 2018

| Rank | Country                       | Value | Score  | Rank | Country                        | Value  | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|--------|-------|
| 1    | Argentina.....                | 0.00  | 100.00 | 64   | Azerbaijan.....                | 37.50  | 62.50 |
| 1    | Belgium.....                  | 0.00  | 100.00 | 64   | Bahrain.....                   | 37.50  | 62.50 |
| 1    | Brazil.....                   | 0.00  | 100.00 | 64   | Bosnia and Herzegovina.....    | 37.50  | 62.50 |
| 1    | Brunei Darussalam.....        | 0.00  | 100.00 | 64   | Burundi.....                   | 37.50  | 62.50 |
| 1    | Bulgaria.....                 | 0.00  | 100.00 | 64   | Cambodia.....                  | 37.50  | 62.50 |
| 1    | Canada.....                   | 0.00  | 100.00 | 64   | Ethiopia.....                  | 37.50  | 62.50 |
| 1    | Colombia.....                 | 0.00  | 100.00 | 64   | Greece.....                    | 37.50  | 62.50 |
| 1    | Costa Rica.....               | 0.00  | 100.00 | 64   | Kenya.....                     | 37.50  | 62.50 |
| 1    | Czech Republic.....           | 0.00  | 100.00 | 64   | Korea, Rep.....                | 37.50  | 62.50 |
| 1    | Denmark.....                  | 0.00  | 100.00 | 64   | Luxembourg.....                | 37.50  | 62.50 |
| 1    | Dominican Republic.....       | 0.00  | 100.00 | 64   | Mauritius.....                 | 37.50  | 62.50 |
| 1    | El Salvador.....              | 0.00  | 100.00 | 64   | Norway.....                    | 37.50  | 62.50 |
| 1    | Georgia.....                  | 0.00  | 100.00 | 64   | Philippines.....               | 37.50  | 62.50 |
| 1    | Guatemala.....                | 0.00  | 100.00 | 64   | Portugal.....                  | 37.50  | 62.50 |
| 1    | Hungary.....                  | 0.00  | 100.00 | 64   | Rwanda.....                    | 37.50  | 62.50 |
| 1    | Iceland.....                  | 0.00  | 100.00 | 64   | Slovakia.....                  | 37.50  | 62.50 |
| 1    | Israel.....                   | 0.00  | 100.00 | 64   | South Africa.....              | 37.50  | 62.50 |
| 1    | Japan.....                    | 0.00  | 100.00 | 64   | Ukraine.....                   | 37.50  | 62.50 |
| 1    | Kuwait.....                   | 0.00  | 100.00 | 64   | Viet Nam.....                  | 37.50  | 62.50 |
| 1    | Kyrgyzstan.....               | 0.00  | 100.00 | 64   | Yemen.....                     | 37.50  | 62.50 |
| 1    | Lesotho.....                  | 0.00  | 100.00 | 64   | Zimbabwe.....                  | 37.50  | 62.50 |
| 1    | Malawi.....                   | 0.00  | 100.00 | 85   | Algeria.....                   | 50.00  | 50.00 |
| 1    | Mongolia.....                 | 0.00  | 100.00 | 85   | Austria.....                   | 50.00  | 50.00 |
| 1    | Nicaragua.....                | 0.00  | 100.00 | 85   | Bangladesh.....                | 50.00  | 50.00 |
| 1    | Qatar.....                    | 0.00  | 100.00 | 85   | Botswana.....                  | 50.00  | 50.00 |
| 1    | Saudi Arabia.....             | 0.00  | 100.00 | 85   | Croatia.....                   | 50.00  | 50.00 |
| 1    | Switzerland.....              | 0.00  | 100.00 | 85   | Cyprus.....                    | 50.00  | 50.00 |
| 1    | Thailand.....                 | 0.00  | 100.00 | 85   | Finland.....                   | 50.00  | 50.00 |
| 1    | Uganda.....                   | 0.00  | 100.00 | 85   | France.....                    | 50.00  | 50.00 |
| 1    | United Arab Emirates.....     | 0.00  | 100.00 | 85   | Germany.....                   | 50.00  | 50.00 |
| 1    | United Kingdom.....           | 0.00  | 100.00 | 85   | India.....                     | 50.00  | 50.00 |
| 1    | United States of America..... | 0.00  | 100.00 | 85   | Lebanon.....                   | 50.00  | 50.00 |
| 1    | Uruguay.....                  | 0.00  | 100.00 | 85   | Liberia.....                   | 50.00  | 50.00 |
| 34   | Albania.....                  | 12.50 | 87.50  | 85   | Madagascar.....                | 50.00  | 50.00 |
| 34   | Armenia.....                  | 12.50 | 87.50  | 85   | Mali.....                      | 50.00  | 50.00 |
| 34   | Australia.....                | 12.50 | 87.50  | 85   | Moldova, Rep.....              | 50.00  | 50.00 |
| 34   | Ireland.....                  | 12.50 | 87.50  | 85   | Russian Federation.....        | 50.00  | 50.00 |
| 34   | Malaysia.....                 | 12.50 | 87.50  | 85   | Senegal.....                   | 50.00  | 50.00 |
| 34   | Montenegro.....               | 12.50 | 87.50  | 85   | Sweden.....                    | 50.00  | 50.00 |
| 34   | New Zealand.....              | 12.50 | 87.50  | 85   | Tajikistan.....                | 50.00  | 50.00 |
| 34   | Singapore.....                | 12.50 | 87.50  | 104  | China.....                     | 62.50  | 37.50 |
| 34   | Slovenia.....                 | 12.50 | 87.50  | 104  | Ghana.....                     | 62.50  | 37.50 |
| 34   | Trinidad and Tobago.....      | 12.50 | 87.50  | 104  | Iran, Islamic Rep.....         | 62.50  | 37.50 |
| 34   | Turkey.....                   | 12.50 | 87.50  | 104  | Italy.....                     | 62.50  | 37.50 |
| 45   | Bhutan.....                   | 25    | 75.00  | 104  | Sri Lanka.....                 | 62.50  | 37.50 |
| 45   | Chile.....                    | 25.00 | 75.00  | 109  | Egypt.....                     | 75.00  | 25.00 |
| 45   | Ecuador.....                  | 25.00 | 75.00  | 109  | Honduras.....                  | 75.00  | 25.00 |
| 45   | Estonia.....                  | 25.00 | 75.00  | 109  | Indonesia.....                 | 75.00  | 25.00 |
| 45   | Gambia.....                   | 25.00 | 75.00  | 109  | Jordan.....                    | 75.00  | 25.00 |
| 45   | Kazakhstan.....               | 25.00 | 75.00  | 109  | Panama.....                    | 75.00  | 25.00 |
| 45   | Laos.....                     | 25.00 | 75.00  | 109  | Paraguay.....                  | 75.00  | 25.00 |
| 45   | Latvia.....                   | 25.00 | 75.00  | 109  | Peru.....                      | 75.00  | 25.00 |
| 45   | Lithuania.....                | 25.00 | 75.00  | 109  | Tanzania, United Rep.....      | 75.00  | 25.00 |
| 45   | Malta.....                    | 25.00 | 75.00  | 117  | Cameroon.....                  | 87.50  | 12.50 |
| 45   | Mozambique.....               | 25.00 | 75.00  | 117  | Congo, Dem. Rep.....           | 87.50  | 12.50 |
| 45   | Namibia.....                  | 25.00 | 75.00  | 117  | Mexico.....                    | 87.50  | 12.50 |
| 45   | Nigeria.....                  | 25.00 | 75.00  | 117  | Nepal.....                     | 87.50  | 12.50 |
| 45   | Pakistan.....                 | 25.00 | 75.00  | 117  | Netherlands.....               | 87.50  | 12.50 |
| 45   | Poland.....                   | 25.00 | 75.00  | 122  | Morocco.....                   | 100.00 | 0.00  |
| 45   | Romania.....                  | 25.00 | 75.00  | 122  | Oman.....                      | 100.00 | 0.00  |
| 45   | Serbia.....                   | 25.00 | 75.00  | 122  | Tunisia.....                   | 100.00 | 0.00  |
| 45   | Spain.....                    | 25.00 | 75.00  | 122  | Venezuela, Bolivarian Rep..... | 100.00 | 0.00  |
| 45   | Zambia.....                   | 25.00 | 75.00  |      |                                |        |       |

**SOURCE:** World Bank, *Doing Business 2018: Reforming to Create Jobs* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2018>)  
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## 1.3.3 Active labour market policies

Average answer to the question: In your country, to what extent do labour market policies help unemployed people to reskill and find new employment (including skills matching, retraining, etc.)? [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Switzerland              | 5.67  | 100.00 | 64   | Kuwait                     | 3.36  | 41.62 |
| 2    | Singapore                | 5.61  | 98.51  | 65   | Jordan                     | 3.35  | 41.37 |
| 3    | Austria                  | 5.40  | 93.15  | 66   | Sri Lanka                  | 3.30  | 39.98 |
| 4    | Luxembourg               | 5.35  | 91.81  | 67   | Turkey                     | 3.28  | 39.63 |
| 5    | Germany                  | 5.24  | 89.06  | 68   | Iran, Islamic Rep.         | 3.28  | 39.45 |
| 6    | Norway                   | 5.18  | 87.57  | 69   | Poland                     | 3.25  | 38.74 |
| 7    | Iceland                  | 5.18  | 87.54  | 70   | Costa Rica                 | 3.23  | 38.31 |
| 8    | Denmark                  | 5.06  | 84.66  | 71   | Hungary                    | 3.23  | 38.29 |
| 9    | United States of America | 5.06  | 84.48  | 72   | Ghana                      | 3.21  | 37.91 |
| 10   | Netherlands              | 5.01  | 83.32  | 73   | Kenya                      | 3.17  | 36.72 |
| 11   | Malaysia                 | 5.01  | 83.17  | 74   | Trinidad and Tobago        | 3.12  | 35.41 |
| 12   | Qatar                    | 4.89  | 80.19  | 75   | Chile                      | 3.10  | 35.00 |
| 13   | Finland                  | 4.83  | 78.77  | 76   | Botswana                   | 3.06  | 34.07 |
| 14   | Estonia                  | 4.79  | 77.79  | 77   | Armenia                    | 3.05  | 33.76 |
| 15   | United Arab Emirates     | 4.78  | 77.38  | 78   | Philippines                | 3.03  | 33.18 |
| 16   | New Zealand              | 4.75  | 76.70  | 79   | Serbia                     | 3.02  | 32.93 |
| 17   | Canada                   | 4.73  | 76.30  | 80   | Colombia                   | 3.02  | 32.88 |
| 18   | Malta                    | 4.73  | 76.14  | 81   | Cambodia                   | 3.01  | 32.80 |
| 19   | Ireland                  | 4.71  | 75.74  | 82   | Tanzania, United Rep.      | 3.01  | 32.70 |
| 20   | Belgium                  | 4.60  | 72.98  | 83   | Croatia                    | 2.95  | 31.34 |
| 21   | Sweden                   | 4.59  | 72.55  | 84   | Tunisia                    | 2.95  | 31.29 |
| 22   | Australia                | 4.54  | 71.32  | 85   | Argentina                  | 2.95  | 31.13 |
| 23   | China                    | 4.49  | 70.26  | 86   | Algeria                    | 2.93  | 30.63 |
| 24   | Czech Republic           | 4.44  | 68.84  | 87   | Italy                      | 2.88  | 29.54 |
| 25   | Saudi Arabia             | 4.41  | 68.23  | 88   | Mongolia                   | 2.84  | 28.46 |
| 26   | Bahrain                  | 4.38  | 67.27  | 89   | Moldova, Rep.              | 2.83  | 28.20 |
| 27   | Japan                    | 4.33  | 66.19  | 90   | Kyrgyzstan                 | 2.82  | 27.95 |
| 28   | India                    | 4.24  | 63.76  | 91   | Liberia                    | 2.82  | 27.85 |
| 29   | United Kingdom           | 4.23  | 63.68  | 92   | Mexico                     | 2.79  | 27.14 |
| 30   | Israel                   | 4.22  | 63.41  | 93   | Greece                     | 2.79  | 27.07 |
| 31   | Tajikistan               | 4.20  | 62.77  | 94   | Senegal                    | 2.77  | 26.79 |
| 32   | Azerbaijan               | 4.19  | 62.65  | 95   | Zambia                     | 2.77  | 26.56 |
| 33   | Indonesia                | 4.16  | 61.81  | 96   | Georgia                    | 2.75  | 26.26 |
| 34   | Slovenia                 | 4.15  | 61.59  | 97   | Nepal                      | 2.75  | 26.16 |
| 35   | Bhutan                   | 4.15  | 61.51  | 98   | Egypt                      | 2.74  | 25.98 |
| 36   | Korea, Rep.              | 4.03  | 58.55  | 99   | Namibia                    | 2.73  | 25.65 |
| 37   | France                   | 4.02  | 58.30  | 100  | Brazil                     | 2.72  | 25.45 |
| 38   | Mauritius                | 3.91  | 55.57  | 101  | Cameroon                   | 2.71  | 25.22 |
| 39   | Portugal                 | 3.91  | 55.45  | 102  | Albania                    | 2.69  | 24.77 |
| 40   | Cyprus                   | 3.90  | 55.19  | 103  | Bangladesh                 | 2.68  | 24.29 |
| 41   | Kazakhstan               | 3.89  | 54.86  | 104  | South Africa               | 2.66  | 23.78 |
| 42   | Oman                     | 3.88  | 54.61  | 105  | Bosnia and Herzegovina     | 2.64  | 23.35 |
| 43   | Lithuania                | 3.87  | 54.44  | 106  | Paraguay                   | 2.60  | 22.31 |
| 44   | Rwanda                   | 3.81  | 52.97  | 107  | Guatemala                  | 2.57  | 21.71 |
| 45   | Latvia                   | 3.78  | 52.29  | 108  | Morocco                    | 2.46  | 18.88 |
| 46   | Russian Federation       | 3.78  | 52.16  | 109  | Honduras                   | 2.46  | 18.75 |
| 47   | Uruguay                  | 3.73  | 50.97  | 110  | Dominican Republic         | 2.42  | 17.92 |
| 48   | Slovakia                 | 3.72  | 50.80  | 111  | Uganda                     | 2.40  | 17.41 |
| 49   | Brunei Darussalam        | 3.72  | 50.64  | 112  | Ecuador                    | 2.39  | 17.06 |
| 50   | Montenegro               | 3.72  | 50.59  | 113  | Lebanon                    | 2.39  | 17.01 |
| 51   | Thailand                 | 3.72  | 50.57  | 114  | Burundi                    | 2.38  | 16.93 |
| 52   | Ukraine                  | 3.69  | 49.91  | 115  | Peru                       | 2.31  | 15.09 |
| 53   | Pakistan                 | 3.66  | 49.08  | 116  | Nigeria                    | 2.30  | 14.86 |
| 54   | Lesotho                  | 3.57  | 47.01  | 117  | Malawi                     | 2.30  | 14.68 |
| 55   | Mali                     | 3.57  | 46.98  | 118  | Congo, Dem. Rep.           | 2.26  | 13.75 |
| 56   | Romania                  | 3.47  | 44.43  | 119  | Mozambique                 | 2.25  | 13.52 |
| 57   | Spain                    | 3.46  | 44.00  | 120  | El Salvador                | 2.19  | 12.03 |
| 58   | Panama                   | 3.42  | 43.21  | 121  | Madagascar                 | 2.10  | 9.65  |
| 59   | Laos                     | 3.41  | 42.84  | 122  | Venezuela, Bolivarian Rep. | 2.09  | 9.43  |
| 60   | Viet Nam                 | 3.40  | 42.61  | 123  | Yemen                      | 1.95  | 6.07  |
| 61   | Ethiopia                 | 3.39  | 42.23  | 124  | Zimbabwe                   | 1.76  | 1.09  |
| 62   | Gambia                   | 3.38  | 42.18  | 125  | Nicaragua                  | 1.71  | 0.00  |
| 63   | Bulgaria                 | 3.37  | 41.88  |      |                            |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 1.3.4 Labour-employer cooperation

**Average answer to the question: In your country, how would you characterize labor-employer relations? [1 = generally confrontational; 7 = generally cooperative] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 6.18  | 100.00 | 64   | Kazakhstan.....                | 4.36  | 41.04 |
| 2    | Singapore.....                | 6.18  | 99.94  | 65   | Kenya.....                     | 4.34  | 40.43 |
| 3    | Norway.....                   | 6.09  | 97.19  | 66   | Senegal.....                   | 4.31  | 39.65 |
| 4    | Denmark.....                  | 5.97  | 93.09  | 67   | Australia.....                 | 4.31  | 39.43 |
| 5    | Netherlands.....              | 5.93  | 91.83  | 67   | Sri Lanka.....                 | 4.31  | 39.43 |
| 6    | New Zealand.....              | 5.83  | 88.57  | 69   | Slovakia.....                  | 4.29  | 38.97 |
| 7    | Japan.....                    | 5.73  | 85.47  | 70   | Bangladesh.....                | 4.28  | 38.55 |
| 8    | Sweden.....                   | 5.68  | 83.76  | 71   | Hungary.....                   | 4.28  | 38.52 |
| 9    | United Arab Emirates.....     | 5.62  | 81.95  | 72   | Spain.....                     | 4.27  | 38.42 |
| 10   | Luxembourg.....               | 5.59  | 80.82  | 73   | Poland.....                    | 4.27  | 38.30 |
| 11   | Iceland.....                  | 5.58  | 80.50  | 74   | Ecuador.....                   | 4.25  | 37.65 |
| 12   | Austria.....                  | 5.56  | 79.85  | 75   | Moldova, Rep.....              | 4.24  | 37.29 |
| 13   | United States of America..... | 5.44  | 76.04  | 75   | Mongolia.....                  | 4.24  | 37.29 |
| 14   | Canada.....                   | 5.42  | 75.56  | 77   | Lebanon.....                   | 4.22  | 36.65 |
| 15   | Qatar.....                    | 5.38  | 74.17  | 78   | Dominican Republic.....        | 4.22  | 36.58 |
| 16   | Rwanda.....                   | 5.33  | 72.62  | 79   | Viet Nam.....                  | 4.20  | 36.00 |
| 17   | United Kingdom.....           | 5.30  | 71.62  | 80   | Georgia.....                   | 4.15  | 34.52 |
| 18   | Malaysia.....                 | 5.27  | 70.71  | 81   | Paraguay.....                  | 4.15  | 34.32 |
| 19   | Germany.....                  | 5.26  | 70.36  | 82   | Peru.....                      | 4.14  | 34.16 |
| 20   | Finland.....                  | 5.22  | 69.00  | 83   | Russian Federation.....        | 4.13  | 33.77 |
| 21   | Bahrain.....                  | 5.20  | 68.26  | 84   | Ukraine.....                   | 4.11  | 33.23 |
| 22   | Malta.....                    | 5.19  | 67.94  | 85   | Madagascar.....                | 4.11  | 33.16 |
| 23   | Estonia.....                  | 5.16  | 67.06  | 86   | Nigeria.....                   | 4.08  | 32.13 |
| 24   | Israel.....                   | 5.16  | 66.97  | 87   | Burundi.....                   | 4.06  | 31.55 |
| 25   | Ireland.....                  | 5.12  | 65.64  | 88   | Mali.....                      | 4.05  | 31.09 |
| 26   | Costa Rica.....               | 5.10  | 65.13  | 89   | Greece.....                    | 4.04  | 30.90 |
| 27   | Bhutan.....                   | 5.05  | 63.48  | 90   | Zambia.....                    | 4.04  | 30.77 |
| 28   | Guatemala.....                | 5.02  | 62.42  | 91   | Romania.....                   | 4.01  | 29.90 |
| 29   | Albania.....                  | 4.94  | 59.93  | 92   | Montenegro.....                | 4.00  | 29.64 |
| 30   | Azerbaijan.....               | 4.90  | 58.77  | 93   | Malawi.....                    | 3.99  | 29.32 |
| 31   | Philippines.....              | 4.84  | 56.83  | 94   | Italy.....                     | 3.99  | 29.09 |
| 32   | Czech Republic.....           | 4.84  | 56.64  | 95   | Cameroon.....                  | 3.98  | 29.00 |
| 33   | Nicaragua.....                | 4.84  | 56.60  | 96   | Egypt.....                     | 3.98  | 28.93 |
| 34   | Thailand.....                 | 4.81  | 55.76  | 97   | Serbia.....                    | 3.96  | 28.41 |
| 35   | Mauritius.....                | 4.80  | 55.28  | 98   | Brazil.....                    | 3.95  | 28.09 |
| 36   | Jordan.....                   | 4.77  | 54.31  | 99   | Algeria.....                   | 3.93  | 27.45 |
| 37   | Brunei Darussalam.....        | 4.75  | 53.86  | 100  | Kyrgyzstan.....                | 3.92  | 27.12 |
| 38   | Armenia.....                  | 4.72  | 52.86  | 101  | France.....                    | 3.92  | 26.96 |
| 39   | Indonesia.....                | 4.72  | 52.83  | 102  | Zimbabwe.....                  | 3.90  | 26.32 |
| 40   | Tajikistan.....               | 4.71  | 52.41  | 103  | Bulgaria.....                  | 3.88  | 25.77 |
| 41   | Belgium.....                  | 4.69  | 51.89  | 104  | Tanzania, United Rep.....      | 3.84  | 24.28 |
| 42   | Saudi Arabia.....             | 4.65  | 50.66  | 105  | Argentina.....                 | 3.80  | 22.96 |
| 43   | Portugal.....                 | 4.62  | 49.60  | 106  | Morocco.....                   | 3.79  | 22.67 |
| 44   | Latvia.....                   | 4.62  | 49.53  | 107  | Yemen.....                     | 3.77  | 21.99 |
| 45   | Honduras.....                 | 4.6   | 48.82  | 108  | Bosnia and Herzegovina.....    | 3.76  | 21.96 |
| 46   | Cyprus.....                   | 4.58  | 48.27  | 109  | Turkey.....                    | 3.76  | 21.70 |
| 47   | China.....                    | 4.58  | 48.24  | 110  | Ethiopia.....                  | 3.75  | 21.50 |
| 48   | Laos.....                     | 4.54  | 47.05  | 111  | Liberia.....                   | 3.74  | 21.31 |
| 49   | Oman.....                     | 4.54  | 46.85  | 112  | Iran, Islamic Rep.....         | 3.72  | 20.41 |
| 50   | Kuwait.....                   | 4.49  | 45.46  | 113  | Mozambique.....                | 3.69  | 19.47 |
| 51   | Panama.....                   | 4.49  | 45.43  | 114  | Tunisia.....                   | 3.66  | 18.70 |
| 52   | India.....                    | 4.45  | 44.17  | 115  | El Salvador.....               | 3.65  | 18.24 |
| 53   | Uganda.....                   | 4.44  | 43.62  | 116  | Pakistan.....                  | 3.61  | 16.86 |
| 54   | Lithuania.....                | 4.43  | 43.56  | 117  | Venezuela, Bolivarian Rep..... | 3.59  | 16.31 |
| 55   | Ghana.....                    | 4.43  | 43.33  | 118  | Congo, Dem. Rep.....           | 3.58  | 16.11 |
| 56   | Gambia.....                   | 4.42  | 43.07  | 119  | Lesotho.....                   | 3.53  | 14.40 |
| 57   | Namibia.....                  | 4.42  | 43.01  | 120  | Korea, Rep.....                | 3.51  | 13.76 |
| 58   | Slovenia.....                 | 4.41  | 42.85  | 121  | Uruguay.....                   | 3.47  | 12.56 |
| 59   | Chile.....                    | 4.40  | 42.46  | 122  | Nepal.....                     | 3.47  | 12.50 |
| 60   | Botswana.....                 | 4.39  | 42.30  | 123  | Croatia.....                   | 3.38  | 9.65  |
| 61   | Mexico.....                   | 4.39  | 42.01  | 124  | Trinidad and Tobago.....       | 3.34  | 8.23  |
| 62   | Colombia.....                 | 4.38  | 41.78  | 125  | South Africa.....              | 3.08  | 0.00  |
| 63   | Cambodia.....                 | 4.36  | 41.23  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 1.3.5 Professional management

**Average answer to the question: In your country, who holds senior management positions in companies? [1 = usually relatives or friends without regard to merit; 7 = mostly professional managers chosen for merit and qualifications] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Netherlands.....              | 6.33  | 100.00 | 64   | Venezuela, Bolivarian Rep..... | 4.30  | 47.75 |
| 2    | New Zealand.....              | 6.23  | 97.40  | 65   | Slovenia.....                  | 4.25  | 46.54 |
| 3    | Finland.....                  | 6.21  | 97.01  | 66   | Georgia.....                   | 4.23  | 46.02 |
| 4    | Singapore.....                | 6.16  | 95.60  | 67   | Armenia.....                   | 4.22  | 45.69 |
| 5    | Switzerland.....              | 6.11  | 94.44  | 68   | Poland.....                    | 4.17  | 44.35 |
| 6    | Australia.....                | 6.08  | 93.66  | 69   | Malawi.....                    | 4.16  | 44.14 |
| 7    | Sweden.....                   | 6.07  | 93.33  | 70   | Latvia.....                    | 4.15  | 43.96 |
| 8    | Norway.....                   | 6.03  | 92.25  | 71   | Mexico.....                    | 4.14  | 43.63 |
| 9    | United Kingdom.....           | 6.01  | 91.84  | 72   | Uganda.....                    | 4.06  | 41.59 |
| 10   | Ireland.....                  | 6.00  | 91.48  | 73   | Tajikistan.....                | 4.06  | 41.57 |
| 11   | Denmark.....                  | 5.96  | 90.47  | 74   | Zambia.....                    | 4.04  | 41.08 |
| 12   | Canada.....                   | 5.95  | 90.37  | 75   | Morocco.....                   | 4.03  | 40.77 |
| 13   | United States of America..... | 5.89  | 88.69  | 76   | Turkey.....                    | 4.02  | 40.61 |
| 14   | Belgium.....                  | 5.81  | 86.74  | 77   | Greece.....                    | 4.01  | 40.41 |
| 15   | Luxembourg.....               | 5.72  | 84.37  | 78   | Laos.....                      | 4.00  | 40.18 |
| 16   | Japan.....                    | 5.66  | 82.85  | 79   | Liberia.....                   | 4.00  | 40.05 |
| 17   | Germany.....                  | 5.60  | 81.28  | 80   | Jordan.....                    | 3.98  | 39.61 |
| 18   | United Arab Emirates.....     | 5.59  | 81.10  | 81   | Brunei Darussalam.....         | 3.97  | 39.25 |
| 19   | Israel.....                   | 5.53  | 79.55  | 82   | Colombia.....                  | 3.96  | 39.02 |
| 20   | Iceland.....                  | 5.51  | 79.06  | 83   | Bangladesh.....                | 3.92  | 37.93 |
| 21   | Malaysia.....                 | 5.48  | 78.29  | 84   | Tunisia.....                   | 3.91  | 37.78 |
| 22   | France.....                   | 5.44  | 77.21  | 85   | Tanzania, United Rep. ....     | 3.91  | 37.68 |
| 23   | Qatar.....                    | 5.44  | 77.08  | 86   | Cambodia.....                  | 3.90  | 37.57 |
| 24   | Austria.....                  | 5.43  | 77.00  | 87   | Senegal.....                   | 3.90  | 37.50 |
| 25   | Czech Republic.....           | 5.41  | 76.31  | 88   | Egypt.....                     | 3.87  | 36.72 |
| 26   | Estonia.....                  | 5.28  | 73.17  | 89   | Russian Federation.....        | 3.82  | 35.51 |
| 27   | Rwanda.....                   | 5.11  | 68.79  | 90   | Italy.....                     | 3.81  | 35.13 |
| 28   | Ghana.....                    | 4.97  | 64.98  | 91   | Honduras.....                  | 3.79  | 34.72 |
| 29   | Gambia.....                   | 4.92  | 63.84  | 92   | Lebanon.....                   | 3.78  | 34.41 |
| 30   | Chile.....                    | 4.82  | 61.32  | 93   | Cyprus.....                    | 3.77  | 34.05 |
| 31   | Malta.....                    | 4.82  | 61.14  | 94   | Hungary.....                   | 3.76  | 33.79 |
| 32   | Indonesia.....                | 4.79  | 60.55  | 95   | Montenegro.....                | 3.74  | 33.35 |
| 33   | Bahrain.....                  | 4.79  | 60.47  | 96   | Mongolia.....                  | 3.74  | 33.30 |
| 34   | Costa Rica.....               | 4.79  | 60.39  | 97   | Croatia.....                   | 3.72  | 32.78 |
| 35   | Spain.....                    | 4.64  | 56.66  | 98   | Romania.....                   | 3.70  | 32.24 |
| 36   | Korea, Rep.....               | 4.64  | 56.53  | 99   | Dominican Republic.....        | 3.68  | 31.91 |
| 37   | Lithuania.....                | 4.64  | 56.45  | 100  | Kazakhstan.....                | 3.66  | 31.37 |
| 38   | Zimbabwe.....                 | 4.63  | 56.22  | 101  | Pakistan.....                  | 3.63  | 30.52 |
| 39   | Trinidad and Tobago.....      | 4.62  | 56.12  | 102  | Nicaragua.....                 | 3.62  | 30.23 |
| 40   | South Africa.....             | 4.61  | 55.68  | 103  | Viet Nam.....                  | 3.61  | 29.95 |
| 41   | Philippines.....              | 4.59  | 55.24  | 104  | Madagascar.....                | 3.60  | 29.82 |
| 42   | Botswana.....                 | 4.59  | 55.22  | 105  | Moldova, Rep.....              | 3.59  | 29.51 |
| 43   | Azerbaijan.....               | 4.58  | 55.01  | 106  | Ethiopia.....                  | 3.57  | 29.13 |
| 44   | Nigeria.....                  | 4.57  | 54.80  | 107  | Bulgaria.....                  | 3.57  | 28.92 |
| 45   | India.....                    | 4.57  | 54.73  | 108  | Ecuador.....                   | 3.56  | 28.77 |
| 46   | Brazil.....                   | 4.57  | 54.70  | 109  | Congo, Dem. Rep.....           | 3.50  | 27.25 |
| 47   | Mauritius.....                | 4.56  | 54.39  | 110  | Burundi.....                   | 3.46  | 26.22 |
| 48   | Thailand.....                 | 4.55  | 54.21  | 111  | El Salvador.....               | 3.43  | 25.44 |
| 49   | Saudi Arabia.....             | 4.55  | 54.18  | 112  | Paraguay.....                  | 3.43  | 25.42 |
| 50   | China.....                    | 4.54  | 54.06  | 113  | Mali.....                      | 3.43  | 25.29 |
| 51   | Namibia.....                  | 4.52  | 53.36  | 114  | Iran, Islamic Rep.....         | 3.41  | 24.95 |
| 52   | Argentina.....                | 4.51  | 53.28  | 115  | Kuwait.....                    | 3.39  | 24.39 |
| 52   | Slovakia.....                 | 4.51  | 53.28  | 115  | Nepal.....                     | 3.39  | 24.39 |
| 54   | Sri Lanka.....                | 4.48  | 52.46  | 117  | Ukraine.....                   | 3.38  | 24.03 |
| 55   | Bhutan.....                   | 4.46  | 52.02  | 118  | Cameroon.....                  | 3.37  | 23.87 |
| 56   | Kenya.....                    | 4.46  | 51.89  | 119  | Lesotho.....                   | 3.36  | 23.67 |
| 57   | Oman.....                     | 4.46  | 51.84  | 120  | Mozambique.....                | 3.29  | 21.71 |
| 58   | Albania.....                  | 4.41  | 50.58  | 121  | Serbia.....                    | 3.26  | 20.94 |
| 59   | Peru.....                     | 4.40  | 50.48  | 122  | Kyrgyzstan.....                | 3.24  | 20.58 |
| 60   | Panama.....                   | 4.36  | 49.37  | 123  | Bosnia and Herzegovina.....    | 2.98  | 13.80 |
| 61   | Uruguay.....                  | 4.36  | 49.32  | 124  | Algeria.....                   | 2.90  | 11.85 |
| 62   | Portugal.....                 | 4.32  | 48.44  | 125  | Yemen.....                     | 2.44  | 0.00  |
| 63   | Guatemala.....                | 4.31  | 48.13  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 1.3.6 Relationship of pay to productivity

Average answer to the question: In your country, to what extent is pay related to employee productivity?  
[1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 5.58  | 100.00 | 64   | Serbia.....                    | 3.94  | 47.89 |
| 2    | Singapore.....                | 5.51  | 97.81  | 65   | Moldova, Rep.....              | 3.86  | 45.60 |
| 3    | United States of America..... | 5.50  | 97.52  | 65   | Trinidad and Tobago.....       | 3.86  | 45.60 |
| 4    | United Arab Emirates.....     | 5.32  | 91.80  | 67   | Ghana.....                     | 3.86  | 45.54 |
| 5    | Malaysia.....                 | 5.30  | 91.13  | 68   | Cyprus.....                    | 3.83  | 44.39 |
| 6    | Germany.....                  | 5.23  | 88.94  | 69   | Oman.....                      | 3.82  | 44.23 |
| 7    | Qatar.....                    | 5.21  | 88.47  | 70   | Nigeria.....                   | 3.82  | 44.17 |
| 8    | Canada.....                   | 5.08  | 84.18  | 71   | Ethiopia.....                  | 3.80  | 43.53 |
| 9    | New Zealand.....              | 5.03  | 82.75  | 72   | Montenegro.....                | 3.79  | 43.34 |
| 10   | Denmark.....                  | 4.93  | 79.57  | 73   | Slovenia.....                  | 3.79  | 43.18 |
| 11   | Ireland.....                  | 4.92  | 79.22  | 74   | Honduras.....                  | 3.78  | 43.09 |
| 12   | Iceland.....                  | 4.92  | 79.09  | 75   | Bangladesh.....                | 3.76  | 42.36 |
| 13   | Korea, Rep.....               | 4.81  | 75.69  | 76   | Namibia.....                   | 3.76  | 42.26 |
| 14   | Azerbaijan.....               | 4.81  | 75.56  | 77   | Pakistan.....                  | 3.75  | 42.10 |
| 15   | Estonia.....                  | 4.80  | 75.21  | 78   | Panama.....                    | 3.74  | 41.66 |
| 16   | United Kingdom.....           | 4.79  | 74.93  | 79   | Mexico.....                    | 3.73  | 41.44 |
| 17   | Israel.....                   | 4.77  | 74.45  | 80   | Hungary.....                   | 3.72  | 40.96 |
| 18   | Netherlands.....              | 4.76  | 74.01  | 81   | Ecuador.....                   | 3.71  | 40.61 |
| 19   | Czech Republic.....           | 4.72  | 72.83  | 82   | Liberia.....                   | 3.69  | 40.07 |
| 19   | Indonesia.....                | 4.72  | 72.83  | 83   | Bulgaria.....                  | 3.69  | 40.01 |
| 21   | Finland.....                  | 4.72  | 72.77  | 84   | Brazil.....                    | 3.67  | 39.40 |
| 22   | Bahrain.....                  | 4.71  | 72.61  | 85   | Peru.....                      | 3.66  | 38.99 |
| 23   | Luxembourg.....               | 4.69  | 71.94  | 86   | Turkey.....                    | 3.65  | 38.93 |
| 24   | China.....                    | 4.63  | 69.97  | 87   | Zambia.....                    | 3.62  | 37.91 |
| 25   | Tajikistan.....               | 4.59  | 68.57  | 88   | Mali.....                      | 3.62  | 37.78 |
| 26   | Norway.....                   | 4.57  | 68.10  | 89   | Colombia.....                  | 3.58  | 36.73 |
| 27   | Gambia.....                   | 4.54  | 67.14  | 90   | Georgia.....                   | 3.56  | 35.84 |
| 28   | Austria.....                  | 4.53  | 66.86  | 91   | Morocco.....                   | 3.55  | 35.72 |
| 29   | Australia.....                | 4.53  | 66.83  | 92   | Spain.....                     | 3.55  | 35.49 |
| 30   | Belgium.....                  | 4.52  | 66.51  | 93   | Greece.....                    | 3.53  | 35.11 |
| 31   | India.....                    | 4.49  | 65.40  | 94   | South Africa.....              | 3.53  | 35.08 |
| 32   | Sweden.....                   | 4.48  | 65.20  | 95   | Iran, Islamic Rep.....         | 3.53  | 34.86 |
| 33   | Saudi Arabia.....             | 4.47  | 64.98  | 96   | Croatia.....                   | 3.52  | 34.64 |
| 34   | Albania.....                  | 4.47  | 64.79  | 97   | Mongolia.....                  | 3.52  | 34.60 |
| 35   | Rwanda.....                   | 4.46  | 64.44  | 98   | Nicaragua.....                 | 3.50  | 34.06 |
| 36   | Chile.....                    | 4.45  | 64.22  | 99   | Uganda.....                    | 3.49  | 33.68 |
| 37   | Japan.....                    | 4.44  | 63.81  | 100  | Tanzania, United Rep.....      | 3.47  | 33.21 |
| 38   | Costa Rica.....               | 4.42  | 63.27  | 101  | Botswana.....                  | 3.46  | 32.70 |
| 39   | Malta.....                    | 4.41  | 63.04  | 102  | Egypt.....                     | 3.44  | 32.28 |
| 40   | Philippines.....              | 4.39  | 62.38  | 103  | Malawi.....                    | 3.43  | 31.68 |
| 41   | Slovakia.....                 | 4.38  | 62.09  | 104  | Senegal.....                   | 3.42  | 31.55 |
| 42   | Laos.....                     | 4.37  | 61.71  | 105  | Nepal.....                     | 3.39  | 30.66 |
| 43   | Lithuania.....                | 4.37  | 61.61  | 105  | Romania.....                   | 3.39  | 30.66 |
| 44   | Thailand.....                 | 4.34  | 60.66  | 107  | Kuwait.....                    | 3.35  | 29.23 |
| 45   | Bhutan.....                   | 4.3   | 59.52  | 108  | Argentina.....                 | 3.34  | 28.95 |
| 46   | Latvia.....                   | 4.28  | 58.82  | 109  | Lesotho.....                   | 3.34  | 28.85 |
| 47   | Kazakhstan.....               | 4.24  | 57.71  | 110  | Algeria.....                   | 3.33  | 28.54 |
| 48   | Kenya.....                    | 4.24  | 57.55  | 111  | Madagascar.....                | 3.31  | 27.96 |
| 49   | Jordan.....                   | 4.22  | 56.91  | 112  | Paraguay.....                  | 3.29  | 27.52 |
| 50   | Kyrgyzstan.....               | 4.19  | 55.83  | 113  | Uruguay.....                   | 3.27  | 26.79 |
| 51   | Ukraine.....                  | 4.17  | 55.42  | 114  | Cameroon.....                  | 3.26  | 26.34 |
| 52   | Mauritius.....                | 4.17  | 55.26  | 115  | Zimbabwe.....                  | 3.25  | 26.09 |
| 53   | Russian Federation.....       | 4.15  | 54.78  | 116  | Dominican Republic.....        | 3.25  | 26.06 |
| 54   | Poland.....                   | 4.15  | 54.72  | 117  | Yemen.....                     | 3.18  | 23.99 |
| 55   | Lebanon.....                  | 4.13  | 54.08  | 118  | Italy.....                     | 3.18  | 23.80 |
| 56   | Sri Lanka.....                | 4.12  | 53.64  | 119  | Tunisia.....                   | 3.07  | 20.27 |
| 57   | Guatemala.....                | 4.07  | 52.27  | 120  | Bosnia and Herzegovina.....    | 3.05  | 19.70 |
| 58   | Armenia.....                  | 4.07  | 52.18  | 121  | Burundi.....                   | 3.04  | 19.38 |
| 59   | France.....                   | 4.05  | 51.48  | 122  | El Salvador.....               | 3.00  | 18.27 |
| 60   | Cambodia.....                 | 4.04  | 51.32  | 123  | Mozambique.....                | 2.80  | 11.76 |
| 61   | Portugal.....                 | 4.01  | 50.33  | 124  | Congo, Dem. Rep.....           | 2.45  | 0.67  |
| 62   | Viet Nam.....                 | 4.01  | 50.17  | 125  | Venezuela, Bolivarian Rep..... | 2.43  | 0.00  |
| 63   | Brunei Darussalam.....        | 3.95  | 48.20  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

# Pillar 2

## Attract

## 2.1.1 FDI and technology transfer

**Average answer to the question: To what extent does foreign direct investment (FDI) bring new technology into your country? [1 = not at all; 7 = to a great extent] | 2017**

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Ireland                  | 6.09  | 100.00 | 64   | Pakistan                   | 4.39  | 56.70 |
| 2    | Singapore                | 5.90  | 95.18  | 65   | Nicaragua                  | 4.37  | 56.35 |
| 3    | Luxembourg               | 5.78  | 92.25  | 66   | Montenegro                 | 4.35  | 55.84 |
| 4    | United Arab Emirates     | 5.61  | 87.82  | 67   | Iceland                    | 4.34  | 55.53 |
| 5    | United States of America | 5.57  | 86.90  | 68   | Iran, Islamic Rep.         | 4.33  | 55.25 |
| 6    | Israel                   | 5.54  | 86.16  | 69   | Egypt                      | 4.30  | 54.56 |
| 7    | United Kingdom           | 5.52  | 85.65  | 70   | Namibia                    | 4.27  | 53.82 |
| 8    | Panama                   | 5.47  | 84.35  | 71   | Colombia                   | 4.26  | 53.59 |
| 9    | Netherlands              | 5.46  | 84.00  | 72   | Ghana                      | 4.26  | 53.39 |
| 10   | Germany                  | 5.42  | 83.13  | 73   | Cyprus                     | 4.25  | 53.31 |
| 11   | Switzerland              | 5.39  | 82.36  | 74   | Latvia                     | 4.22  | 52.42 |
| 12   | Malaysia                 | 5.36  | 81.60  | 75   | Senegal                    | 4.19  | 51.73 |
| 13   | Sweden                   | 5.27  | 79.26  | 76   | Nigeria                    | 4.18  | 51.40 |
| 14   | Portugal                 | 5.25  | 78.75  | 77   | Slovenia                   | 4.17  | 51.20 |
| 15   | Slovakia                 | 5.25  | 78.70  | 78   | Uganda                     | 4.17  | 51.10 |
| 16   | Malta                    | 5.24  | 78.57  | 79   | Tunisia                    | 4.15  | 50.79 |
| 17   | Belgium                  | 5.23  | 78.29  | 80   | Romania                    | 4.15  | 50.61 |
| 18   | Costa Rica               | 5.23  | 78.11  | 81   | Laos                       | 4.13  | 50.25 |
| 19   | Canada                   | 5.20  | 77.40  | 81   | Oman                       | 4.13  | 50.25 |
| 20   | Chile                    | 5.15  | 76.22  | 83   | Viet Nam                   | 4.13  | 50.23 |
| 21   | New Zealand              | 5.15  | 76.17  | 84   | Armenia                    | 4.08  | 48.93 |
| 22   | Norway                   | 5.15  | 76.04  | 85   | Botswana                   | 4.05  | 48.04 |
| 23   | Qatar                    | 5.13  | 75.69  | 86   | Tanzania, United Rep.      | 4.03  | 47.66 |
| 24   | Japan                    | 5.09  | 74.69  | 87   | Kazakhstan                 | 4.02  | 47.48 |
| 25   | Mexico                   | 5.04  | 73.42  | 88   | Georgia                    | 4.02  | 47.35 |
| 26   | Australia                | 5.03  | 73.04  | 89   | Italy                      | 4.02  | 47.27 |
| 27   | France                   | 5.00  | 72.40  | 90   | Zambia                     | 3.98  | 46.30 |
| 28   | Azerbaijan               | 4.99  | 71.99  | 91   | Tajikistan                 | 3.97  | 46.20 |
| 29   | Czech Republic           | 4.99  | 71.97  | 92   | Moldova, Rep.              | 3.96  | 45.92 |
| 30   | Spain                    | 4.92  | 70.41  | 93   | Sri Lanka                  | 3.96  | 45.77 |
| 31   | Lithuania                | 4.92  | 70.39  | 94   | Madagascar                 | 3.95  | 45.51 |
| 32   | Denmark                  | 4.92  | 70.34  | 95   | Serbia                     | 3.91  | 44.67 |
| 33   | Albania                  | 4.92  | 70.23  | 96   | Paraguay                   | 3.91  | 44.65 |
| 34   | Bahrain                  | 4.87  | 69.11  | 97   | Brunei Darussalam          | 3.91  | 44.60 |
| 35   | Poland                   | 4.86  | 68.65  | 98   | Mongolia                   | 3.88  | 43.78 |
| 36   | Uruguay                  | 4.83  | 68.09  | 99   | Mozambique                 | 3.82  | 42.18 |
| 37   | Saudi Arabia             | 4.80  | 67.28  | 100  | Bosnia and Herzegovina     | 3.76  | 40.83 |
| 38   | Thailand                 | 4.80  | 67.23  | 101  | Mali                       | 3.74  | 40.27 |
| 39   | Kenya                    | 4.80  | 67.15  | 102  | Bangladesh                 | 3.73  | 40.06 |
| 40   | Finland                  | 4.76  | 66.16  | 102  | Russian Federation         | 3.73  | 40.06 |
| 41   | Estonia                  | 4.74  | 65.83  | 104  | Croatia                    | 3.71  | 39.37 |
| 42   | Indonesia                | 4.70  | 64.73  | 105  | Greece                     | 3.70  | 39.22 |
| 43   | Rwanda                   | 4.69  | 64.50  | 106  | Bhutan                     | 3.70  | 39.14 |
| 44   | Austria                  | 4.68  | 64.22  | 107  | Algeria                    | 3.66  | 38.25 |
| 45   | Bulgaria                 | 4.68  | 64.14  | 108  | Ethiopia                   | 3.63  | 37.41 |
| 46   | Hungary                  | 4.67  | 63.86  | 109  | El Salvador                | 3.60  | 36.65 |
| 47   | China                    | 4.66  | 63.69  | 110  | Cameroon                   | 3.57  | 35.78 |
| 48   | Dominican Republic       | 4.66  | 63.66  | 111  | Ukraine                    | 3.55  | 35.32 |
| 49   | Morocco                  | 4.61  | 62.51  | 112  | Argentina                  | 3.54  | 35.24 |
| 50   | Brazil                   | 4.59  | 62.00  | 113  | Ecuador                    | 3.52  | 34.51 |
| 51   | Cambodia                 | 4.59  | 61.98  | 114  | Kuwait                     | 3.47  | 33.31 |
| 52   | Korea, Rep.              | 4.54  | 60.73  | 115  | Lebanon                    | 3.43  | 32.44 |
| 53   | Jordan                   | 4.51  | 59.94  | 116  | Liberia                    | 3.38  | 31.07 |
| 54   | Gambia                   | 4.49  | 59.35  | 117  | Congo, Dem. Rep.           | 3.36  | 30.58 |
| 55   | India                    | 4.48  | 59.20  | 118  | Burundi                    | 3.30  | 28.92 |
| 56   | South Africa             | 4.47  | 58.84  | 119  | Nepal                      | 3.27  | 28.16 |
| 57   | Peru                     | 4.46  | 58.54  | 120  | Malawi                     | 3.15  | 25.25 |
| 57   | Turkey                   | 4.46  | 58.54  | 121  | Kyrgyzstan                 | 3.08  | 23.47 |
| 59   | Philippines              | 4.45  | 58.44  | 122  | Lesotho                    | 2.94  | 19.93 |
| 60   | Guatemala                | 4.45  | 58.28  | 123  | Zimbabwe                   | 2.91  | 19.06 |
| 61   | Honduras                 | 4.44  | 58.05  | 124  | Venezuela, Bolivarian Rep. | 2.35  | 4.89  |
| 62   | Mauritius                | 4.43  | 57.85  | 125  | Yemen                      | 2.16  | 0.00  |
| 63   | Trinidad and Tobago      | 4.40  | 56.93  |      |                            |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 2.1.2 Prevalence of foreign ownership

Average answer to the question: In your country, how prevalent is foreign ownership of companies?  
[1 = extremely rare; 7 = extremely prevalent] | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | United Kingdom           | 6.14  | 100.00 | 63   | Rwanda                     | 4.50  | 58.40 |
| 2    | Singapore                | 6.09  | 98.63  | 65   | China                      | 4.49  | 58.02 |
| 3    | Luxembourg               | 6.06  | 98.00  | 66   | Mozambique                 | 4.46  | 57.33 |
| 4    | Czech Republic           | 6.01  | 96.58  | 67   | Paraguay                   | 4.43  | 56.65 |
| 5    | Slovakia                 | 5.91  | 94.22  | 68   | Trinidad and Tobago        | 4.42  | 56.27 |
| 6    | Belgium                  | 5.82  | 91.94  | 69   | Bulgaria                   | 4.41  | 56.22 |
| 7    | Ireland                  | 5.80  | 91.44  | 70   | Serbia                     | 4.41  | 56.19 |
| 8    | Estonia                  | 5.72  | 89.38  | 71   | Lithuania                  | 4.40  | 55.92 |
| 9    | Switzerland              | 5.65  | 87.46  | 72   | Madagascar                 | 4.39  | 55.49 |
| 10   | Panama                   | 5.64  | 87.33  | 73   | Honduras                   | 4.38  | 55.33 |
| 11   | United Arab Emirates     | 5.61  | 86.57  | 74   | Argentina                  | 4.37  | 55.08 |
| 12   | Denmark                  | 5.59  | 85.91  | 75   | Jordan                     | 4.37  | 55.05 |
| 13   | Chile                    | 5.52  | 84.22  | 76   | Nicaragua                  | 4.36  | 54.90 |
| 14   | Australia                | 5.51  | 84.04  | 77   | Korea, Rep.                | 4.35  | 54.55 |
| 15   | Sweden                   | 5.47  | 82.87  | 78   | Colombia                   | 4.35  | 54.52 |
| 16   | Canada                   | 5.46  | 82.75  | 79   | Qatar                      | 4.31  | 53.69 |
| 17   | Bahrain                  | 5.46  | 82.65  | 80   | El Salvador                | 4.31  | 53.66 |
| 18   | France                   | 5.45  | 82.52  | 81   | Montenegro                 | 4.31  | 53.61 |
| 19   | Japan                    | 5.45  | 82.44  | 82   | Croatia                    | 4.31  | 53.51 |
| 20   | New Zealand              | 5.43  | 81.99  | 83   | Philippines                | 4.29  | 53.13 |
| 21   | United States of America | 5.42  | 81.61  | 84   | Laos                       | 4.27  | 52.65 |
| 22   | Gambia                   | 5.36  | 80.21  | 85   | Albania                    | 4.23  | 51.46 |
| 23   | Zambia                   | 5.33  | 79.50  | 86   | Romania                    | 4.22  | 51.36 |
| 24   | Mexico                   | 5.33  | 79.40  | 87   | Greece                     | 4.21  | 51.03 |
| 25   | Netherlands              | 5.29  | 78.49  | 88   | Brazil                     | 4.21  | 51.00 |
| 26   | Costa Rica               | 5.22  | 76.74  | 89   | Viet Nam                   | 4.17  | 49.91 |
| 27   | Finland                  | 5.22  | 76.69  | 90   | Sri Lanka                  | 4.16  | 49.89 |
| 28   | Spain                    | 5.17  | 75.45  | 91   | Oman                       | 4.15  | 49.63 |
| 29   | Ghana                    | 5.16  | 75.02  | 92   | Turkey                     | 4.08  | 47.63 |
| 30   | Israel                   | 5.16  | 74.99  | 93   | Tunisia                    | 4.06  | 47.28 |
| 31   | Botswana                 | 5.14  | 74.51  | 94   | Tanzania, United Rep.      | 4.00  | 45.63 |
| 32   | Germany                  | 5.13  | 74.36  | 95   | Brunei Darussalam          | 3.95  | 44.57 |
| 33   | Malta                    | 5.09  | 73.25  | 96   | Slovenia                   | 3.92  | 43.68 |
| 34   | Malaysia                 | 5.08  | 73.09  | 97   | Armenia                    | 3.91  | 43.55 |
| 35   | Uganda                   | 5.07  | 72.89  | 98   | Bosnia and Herzegovina     | 3.91  | 43.32 |
| 36   | Namibia                  | 5.06  | 72.64  | 99   | Bangladesh                 | 3.87  | 42.51 |
| 37   | Uruguay                  | 5.01  | 71.24  | 100  | Zimbabwe                   | 3.87  | 42.41 |
| 38   | Austria                  | 5.00  | 71.02  | 101  | Saudi Arabia               | 3.86  | 42.16 |
| 39   | Latvia                   | 4.98  | 70.43  | 102  | Kazakhstan                 | 3.85  | 41.85 |
| 40   | Norway                   | 4.95  | 69.67  | 103  | Italy                      | 3.83  | 41.40 |
| 41   | Morocco                  | 4.94  | 69.57  | 104  | Pakistan                   | 3.81  | 40.97 |
| 42   | Dominican Republic       | 4.94  | 69.47  | 105  | Mongolia                   | 3.79  | 40.44 |
| 43   | Poland                   | 4.94  | 69.45  | 106  | Lebanon                    | 3.79  | 40.31 |
| 44   | South Africa             | 4.89  | 68.25  | 107  | Egypt                      | 3.72  | 38.74 |
| 45   | Azerbaijan               | 4.83  | 66.84  | 108  | Ethiopia                   | 3.66  | 37.22 |
| 46   | Portugal                 | 4.83  | 66.73  | 109  | Lesotho                    | 3.61  | 35.77 |
| 47   | Liberia                  | 4.80  | 66.10  | 110  | Kyrgyzstan                 | 3.60  | 35.62 |
| 48   | Kenya                    | 4.80  | 65.97  | 111  | Moldova, Rep.              | 3.57  | 34.71 |
| 49   | Thailand                 | 4.77  | 65.19  | 112  | Tajikistan                 | 3.52  | 33.60 |
| 50   | Peru                     | 4.77  | 65.11  | 113  | Mali                       | 3.51  | 33.27 |
| 51   | Mauritius                | 4.76  | 64.88  | 114  | Iceland                    | 3.51  | 33.22 |
| 52   | Nigeria                  | 4.72  | 63.87  | 115  | Russian Federation         | 3.40  | 30.53 |
| 53   | Congo, Dem. Rep.         | 4.69  | 63.24  | 116  | Algeria                    | 3.34  | 28.93 |
| 54   | Malawi                   | 4.68  | 62.91  | 117  | Burundi                    | 3.31  | 28.15 |
| 55   | Indonesia                | 4.62  | 61.46  | 118  | Ukraine                    | 3.29  | 27.69 |
| 56   | Cyprus                   | 4.56  | 59.87  | 119  | Ecuador                    | 3.28  | 27.49 |
| 57   | Senegal                  | 4.53  | 59.26  | 120  | Venezuela, Bolivarian Rep. | 3.15  | 24.27 |
| 58   | India                    | 4.53  | 59.23  | 121  | Bhutan                     | 3.03  | 21.21 |
| 59   | Guatemala                | 4.51  | 58.68  | 122  | Iran, Islamic Rep.         | 2.99  | 20.04 |
| 60   | Cameroon                 | 4.51  | 58.63  | 123  | Nepal                      | 2.88  | 17.38 |
| 61   | Hungary                  | 4.51  | 58.60  | 124  | Kuwait                     | 2.68  | 12.24 |
| 62   | Cambodia                 | 4.50  | 58.50  | 125  | Yemen                      | 2.20  | 0.00  |
| 63   | Georgia                  | 4.50  | 58.40  |      |                            |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 2.1.3 Migrant stock

### Adult migrant stock (%) | 2017

| Rank | Country                        | Value | Score  | Rank | Country                     | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1    | Bahrain.....                   | 48.42 | 100.00 | 64   | Rwanda.....                 | 3.63  | 7.36  |
| 1    | Kuwait.....                    | 75.51 | 100.00 | 65   | Moldova, Rep.....           | 3.46  | 7.00  |
| 1    | Qatar.....                     | 65.22 | 100.00 | 66   | Slovakia.....               | 3.39  | 6.86  |
| 1    | United Arab Emirates.....      | 88.43 | 100.00 | 67   | Iran, Islamic Rep.....      | 3.33  | 6.73  |
| 5    | Singapore.....                 | 45.95 | 94.91  | 68   | Kyrgyzstan.....             | 3.31  | 6.71  |
| 6    | Luxembourg.....                | 45.26 | 93.47  | 69   | Tajikistan.....             | 3.06  | 6.19  |
| 7    | Oman.....                      | 44.72 | 92.35  | 70   | Burundi.....                | 2.76  | 5.56  |
| 8    | Saudi Arabia.....              | 36.99 | 76.37  | 71   | Chile.....                  | 2.71  | 5.45  |
| 9    | Jordan.....                    | 33.33 | 68.79  | 72   | Azerbaijan.....             | 2.64  | 5.31  |
| 10   | Lebanon.....                   | 31.88 | 65.80  | 73   | Zimbabwe.....               | 2.44  | 4.91  |
| 11   | Switzerland.....               | 29.57 | 61.02  | 74   | Ecuador.....                | 2.40  | 4.82  |
| 12   | Australia.....                 | 28.77 | 59.37  | 75   | Paraguay.....               | 2.36  | 4.73  |
| 13   | Brunei Darussalam.....         | 25.34 | 52.26  | 76   | Uruguay.....                | 2.30  | 4.62  |
| 14   | Israel.....                    | 23.58 | 48.63  | 77   | Mauritius.....              | 2.27  | 4.55  |
| 15   | New Zealand.....               | 22.68 | 46.77  | 78   | Korea, Rep.....             | 2.26  | 4.53  |
| 16   | Canada.....                    | 21.46 | 44.25  | 79   | Cameroon.....               | 2.25  | 4.50  |
| 17   | Kazakhstan.....                | 19.97 | 41.16  | 80   | Bulgaria.....               | 2.17  | 4.34  |
| 18   | Austria.....                   | 19.01 | 39.17  | 81   | Kenya.....                  | 2.17  | 4.34  |
| 19   | Sweden.....                    | 17.63 | 36.33  | 82   | Liberia.....                | 2.08  | 4.16  |
| 20   | Ireland.....                   | 16.94 | 34.89  | 83   | Mali.....                   | 2.07  | 4.13  |
| 21   | Cyprus.....                    | 16.02 | 32.99  | 84   | Georgia.....                | 2.00  | 3.99  |
| 22   | United States of America.....  | 15.34 | 31.59  | 85   | Romania.....                | 1.88  | 3.75  |
| 23   | Norway.....                    | 15.06 | 31.00  | 86   | Japan.....                  | 1.82  | 3.62  |
| 24   | Germany.....                   | 14.81 | 30.50  | 87   | Albania.....                | 1.79  | 3.56  |
| 25   | Estonia.....                   | 14.73 | 30.33  | 88   | Pakistan.....               | 1.72  | 3.42  |
| 26   | Croatia.....                   | 13.38 | 27.53  | 89   | Nepal.....                  | 1.72  | 3.40  |
| 27   | United Kingdom.....            | 13.36 | 27.49  | 90   | Poland.....                 | 1.68  | 3.33  |
| 28   | Latvia.....                    | 13.18 | 27.11  | 91   | Senegal.....                | 1.68  | 3.32  |
| 29   | Spain.....                     | 12.83 | 26.39  | 92   | Ghana.....                  | 1.45  | 2.85  |
| 30   | Iceland.....                   | 12.49 | 25.69  | 93   | Yemen.....                  | 1.36  | 2.67  |
| 31   | France.....                    | 12.16 | 25.01  | 94   | Malawi.....                 | 1.27  | 2.49  |
| 32   | Netherlands.....               | 12.07 | 24.82  | 95   | Ethiopia.....               | 1.17  | 2.27  |
| 33   | Slovenia.....                  | 11.77 | 24.20  | 96   | Congo, Dem. Rep.....        | 1.08  | 2.09  |
| 34   | Denmark.....                   | 11.46 | 23.55  | 97   | Bosnia and Herzegovina..... | 1.06  | 2.04  |
| 35   | Montenegro.....                | 11.29 | 23.20  | 98   | Mexico.....                 | 0.95  | 1.81  |
| 36   | Ukraine.....                   | 11.23 | 23.07  | 99   | Zambia.....                 | 0.92  | 1.75  |
| 37   | Belgium.....                   | 11.10 | 22.81  | 100  | Bangladesh.....             | 0.91  | 1.74  |
| 38   | Greece.....                    | 10.94 | 22.47  | 101  | Tanzania, United Rep.....   | 0.86  | 1.63  |
| 39   | Malta.....                     | 10.57 | 21.72  | 102  | Mozambique.....             | 0.83  | 1.58  |
| 40   | Italy.....                     | 9.95  | 20.44  | 103  | El Salvador.....            | 0.66  | 1.23  |
| 41   | Gambia.....                    | 9.76  | 20.05  | 104  | Laos.....                   | 0.66  | 1.22  |
| 42   | Serbia.....                    | 9.12  | 18.72  | 105  | Nicaragua.....              | 0.66  | 1.22  |
| 43   | Malaysia.....                  | 8.55  | 17.54  | 106  | Nigeria.....                | 0.65  | 1.19  |
| 44   | Portugal.....                  | 8.52  | 17.48  | 107  | Algeria.....                | 0.60  | 1.10  |
| 45   | Costa Rica.....                | 8.44  | 17.32  | 108  | Mongolia.....               | 0.59  | 1.08  |
| 46   | Russian Federation.....        | 8.09  | 16.59  | 109  | Tunisia.....                | 0.50  | 0.89  |
| 47   | Botswana.....                  | 7.26  | 14.88  | 110  | Egypt.....                  | 0.49  | 0.87  |
| 48   | South Africa.....              | 7.12  | 14.58  | 111  | Guatemala.....              | 0.48  | 0.85  |
| 49   | Armenia.....                   | 6.51  | 13.32  | 112  | Cambodia.....               | 0.48  | 0.84  |
| 50   | Bhutan.....                    | 6.48  | 13.25  | 113  | Honduras.....               | 0.42  | 0.72  |
| 51   | Finland.....                   | 6.22  | 12.72  | 114  | India.....                  | 0.39  | 0.65  |
| 52   | Turkey.....                    | 6.05  | 12.36  | 115  | Brazil.....                 | 0.35  | 0.58  |
| 53   | Thailand.....                  | 5.20  | 10.61  | 116  | Lesotho.....                | 0.30  | 0.48  |
| 54   | Hungary.....                   | 5.18  | 10.57  | 117  | Peru.....                   | 0.29  | 0.46  |
| 55   | Argentina.....                 | 4.89  | 9.97   | 118  | Colombia.....               | 0.29  | 0.45  |
| 56   | Panama.....                    | 4.65  | 9.48   | 119  | Morocco.....                | 0.27  | 0.41  |
| 57   | Venezuela, Bolivarian Rep..... | 4.46  | 9.08   | 120  | Philippines.....            | 0.21  | 0.28  |
| 58   | Lithuania.....                 | 4.31  | 8.78   | 121  | Sri Lanka.....              | 0.19  | 0.25  |
| 59   | Czech Republic.....            | 4.08  | 8.29   | 122  | Madagascar.....             | 0.13  | 0.13  |
| 60   | Uganda.....                    | 3.95  | 8.02   | 123  | Indonesia.....              | 0.13  | 0.12  |
| 61   | Dominican Republic.....        | 3.95  | 8.02   | 124  | Viet Nam.....               | 0.08  | 0.02  |
| 62   | Namibia.....                   | 3.75  | 7.61   | 125  | China.....                  | 0.07  | 0.00  |
| 63   | Trinidad and Tobago.....       | 3.67  | 7.44   |      |                             |       |       |

**SOURCE:** United Nations Population Division, Trends in International Migrant Stock: Migrants by Age and Sex ([www.un.org/en/development/desa/population/migration/data/estimates2/estimates17.shtml](http://www.un.org/en/development/desa/population/migration/data/estimates2/estimates17.shtml))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.



## 2.1.4 International students

### Tertiary inbound mobility ratio (%) | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Luxembourg               | 45.87 | 100.00 | 64   | Tunisia                    | 2.12  | 10.55 |
| 1    | New Zealand              | 19.84 | 100.00 | 65   | Azerbaijan                 | 2.01  | 10.00 |
| 1    | Qatar                    | 37.88 | 100.00 | 66   | Dominican Republic         | 1.96  | 9.75  |
| 1    | United Arab Emirates     | 48.55 | 100.00 | 67   | Madagascar                 | 1.85  | 9.17  |
| 5    | Singapore                | 19.17 | 96.60  | 68   | Egypt                      | 1.83  | 9.12  |
| 6    | United Kingdom           | 18.48 | 93.15  | 69   | Albania                    | 1.78  | 8.85  |
| 7    | Switzerland              | 17.59 | 88.64  | 70   | Morocco                    | 1.75  | 8.68  |
| 8    | Cyprus                   | 17.53 | 88.35  | 71   | Korea, Rep.                | 1.67  | 8.28  |
| 9    | Australia                | 17.49 | 88.13  | 72   | Turkey                     | 1.19  | 5.87  |
| 10   | Austria                  | 16.35 | 82.38  | 73   | Congo, Dem. Rep.           | 1.18  | 5.80  |
| 11   | Jordan                   | 14.90 | 75.07  | 74   | Malawi                     | 1.14  | 5.60  |
| 12   | Bahrain                  | 12.61 | 63.50  | 75   | Cameroon                   | 1.13  | 5.57  |
| 13   | Belgium                  | 11.18 | 56.31  | 76   | Mongolia                   | 0.89  | 4.36  |
| 14   | Denmark                  | 10.81 | 54.43  | 77   | Mali                       | 0.86  | 4.18  |
| 15   | Netherlands              | 10.74 | 54.09  | 78   | Tajikistan                 | 0.84  | 4.12  |
| 16   | Uganda                   | 10.73 | 54.03  | 79   | Ecuador                    | 0.78  | 3.78  |
| 17   | Czech Republic           | 10.55 | 53.09  | 80   | Honduras                   | 0.76  | 3.72  |
| 18   | Namibia                  | 10.17 | 51.19  | 81   | Rwanda                     | 0.73  | 3.52  |
| 19   | France                   | 9.88  | 49.71  | 82   | Thailand                   | 0.50  | 2.41  |
| 20   | Malaysia                 | 9.29  | 46.74  | 83   | Algeria                    | 0.50  | 2.38  |
| 21   | Lebanon                  | 8.87  | 44.64  | 84   | Zimbabwe                   | 0.47  | 2.22  |
| 22   | Hungary                  | 8.86  | 44.56  | 85   | Sri Lanka                  | 0.44  | 2.06  |
| 23   | Malta                    | 8.43  | 42.42  | 86   | Iran, Islamic Rep.         | 0.43  | 2.03  |
| 24   | Ireland                  | 8.19  | 41.19  | 87   | Croatia                    | 0.43  | 2.02  |
| 25   | Senegal                  | 8.12  | 40.85  | 88   | El Salvador                | 0.39  | 1.84  |
| 26   | Finland                  | 7.81  | 39.26  | 89   | Mozambique                 | 0.38  | 1.78  |
| 27   | Germany                  | 7.68  | 38.64  | 90   | Chile                      | 0.37  | 1.72  |
| 28   | Iceland                  | 7.40  | 37.19  | 91   | Laos                       | 0.37  | 1.72  |
| 29   | Bosnia and Herzegovina   | 7.30  | 36.71  | 92   | Lesotho                    | 0.32  | 1.49  |
| 30   | Sweden                   | 6.22  | 31.27  | 93   | China                      | 0.31  | 1.44  |
| 31   | Latvia                   | 6.12  | 30.75  | 94   | Mexico                     | 0.30  | 1.36  |
| 32   | Kyrgyzstan               | 6.00  | 30.12  | 95   | Viet Nam                   | 0.24  | 1.09  |
| 33   | Slovakia                 | 5.61  | 28.20  | 96   | Brazil                     | 0.24  | 1.07  |
| 34   | Estonia                  | 5.18  | 26.00  | 97   | Colombia                   | 0.16  | 0.69  |
| 35   | Portugal                 | 5.00  | 25.12  | 98   | India                      | 0.14  | 0.56  |
| 36   | Italy                    | 4.95  | 24.85  | 99   | Indonesia                  | 0.12  | 0.45  |
| 37   | Georgia                  | 4.93  | 24.75  | 100  | Philippines                | 0.10  | 0.37  |
| 38   | Saudi Arabia             | 4.92  | 24.70  | 101  | Bangladesh                 | 0.10  | 0.37  |
| 39   | Romania                  | 4.82  | 24.21  | 102  | Venezuela, Bolivarian Rep. | 0.09  | 0.32  |
| 40   | United States of America | 4.65  | 23.31  | 103  | Nepal                      | 0.03  | 0.00  |
| 41   | Bulgaria                 | 4.57  | 22.95  |      | Argentina                  | n/a   | n/a   |
| 42   | Mauritius                | 4.55  | 22.81  |      | Bhutan                     | n/a   | n/a   |
| 43   | Yemen                    | 4.26  | 21.36  |      | Cambodia                   | n/a   | n/a   |
| 44   | Serbia                   | 4.26  | 21.34  |      | Canada                     | n/a   | n/a   |
| 45   | Greece                   | 4.19  | 20.99  |      | Costa Rica                 | n/a   | n/a   |
| 46   | South Africa             | 4.12  | 20.66  |      | Ethiopia                   | n/a   | n/a   |
| 47   | Lithuania                | 4.11  | 20.61  |      | Gambia                     | n/a   | n/a   |
| 48   | Armenia                  | 4.10  | 20.56  |      | Guatemala                  | n/a   | n/a   |
| 49   | Russian Federation       | 3.94  | 19.76  |      | Kenya                      | n/a   | n/a   |
| 50   | Norway                   | 3.92  | 19.65  |      | Kuwait                     | n/a   | n/a   |
| 51   | Ghana                    | 3.79  | 18.99  |      | Liberia                    | n/a   | n/a   |
| 52   | Moldova, Rep.            | 3.63  | 18.18  |      | Montenegro                 | n/a   | n/a   |
| 53   | Japan                    | 3.43  | 17.18  |      | Nicaragua                  | n/a   | n/a   |
| 54   | Poland                   | 3.42  | 17.12  |      | Nigeria                    | n/a   | n/a   |
| 55   | Brunei Darussalam        | 3.22  | 16.12  |      | Pakistan                   | n/a   | n/a   |
| 56   | Burundi                  | 3.22  | 16.10  |      | Panama                     | n/a   | n/a   |
| 57   | Ukraine                  | 3.20  | 16.03  |      | Paraguay                   | n/a   | n/a   |
| 58   | Oman                     | 2.95  | 14.73  |      | Peru                       | n/a   | n/a   |
| 59   | Israel                   | 2.78  | 13.88  |      | Tanzania, United Rep.      | n/a   | n/a   |
| 60   | Slovenia                 | 2.75  | 13.74  |      | Trinidad and Tobago        | n/a   | n/a   |
| 61   | Spain                    | 2.71  | 13.55  |      | Uruguay                    | n/a   | n/a   |
| 62   | Botswana                 | 2.70  | 13.47  |      | Zambia                     | n/a   | n/a   |
| 63   | Kazakhstan               | 2.21  | 11.02  |      |                            |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 2.1.5 Brain gain

**Average answer to the question: To what extent does your country attract talented people from abroad? [1 = not at all; 7 = to a great extent—attracts the best and brightest from around the world] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 6.24  | 100.00 | 64   | Mozambique.....                | 3.33  | 42.16 |
| 2    | United Arab Emirates.....     | 6.13  | 97.91  | 65   | Morocco.....                   | 3.30  | 41.54 |
| 3    | United Kingdom.....           | 5.97  | 94.59  | 66   | Philippines.....               | 3.29  | 41.30 |
| 4    | Singapore.....                | 5.93  | 93.80  | 67   | Cyprus.....                    | 3.28  | 41.10 |
| 5    | United States of America..... | 5.83  | 91.93  | 68   | Japan.....                     | 3.26  | 40.82 |
| 6    | Luxembourg.....               | 5.55  | 86.40  | 69   | Czech Republic.....            | 3.25  | 40.68 |
| 7    | Qatar.....                    | 5.49  | 85.05  | 70   | Dominican Republic.....        | 3.21  | 39.83 |
| 8    | New Zealand.....              | 5.25  | 80.31  | 71   | Spain.....                     | 3.21  | 39.79 |
| 9    | Canada.....                   | 5.17  | 78.86  | 72   | Russian Federation.....        | 3.18  | 39.23 |
| 10   | Netherlands.....              | 5.10  | 77.29  | 73   | Jordan.....                    | 3.17  | 39.01 |
| 11   | Ireland.....                  | 5.04  | 76.28  | 74   | Colombia.....                  | 3.17  | 38.91 |
| 12   | Germany.....                  | 5.04  | 76.22  | 75   | Paraguay.....                  | 3.14  | 38.38 |
| 13   | Rwanda.....                   | 4.99  | 75.18  | 76   | Madagascar.....                | 3.14  | 38.34 |
| 14   | Malaysia.....                 | 4.90  | 73.41  | 77   | Guatemala.....                 | 3.12  | 37.98 |
| 15   | Panama.....                   | 4.77  | 70.81  | 78   | Malawi.....                    | 3.12  | 37.92 |
| 16   | Australia.....                | 4.75  | 70.33  | 79   | Lesotho.....                   | 3.10  | 37.68 |
| 17   | Azerbaijan.....               | 4.69  | 69.28  | 80   | Mali.....                      | 3.10  | 37.52 |
| 18   | India.....                    | 4.67  | 68.84  | 81   | Uganda.....                    | 3.09  | 37.38 |
| 19   | Norway.....                   | 4.64  | 68.32  | 82   | Kuwait.....                    | 3.03  | 36.25 |
| 20   | Malta.....                    | 4.58  | 66.95  | 83   | Sri Lanka.....                 | 3.02  | 35.95 |
| 21   | Bahrain.....                  | 4.57  | 66.89  | 84   | Ecuador.....                   | 2.99  | 35.41 |
| 22   | China.....                    | 4.48  | 65.14  | 85   | Honduras.....                  | 2.93  | 34.20 |
| 22   | Saudi Arabia.....             | 4.48  | 65.14  | 86   | Argentina.....                 | 2.90  | 33.70 |
| 24   | Indonesia.....                | 4.46  | 64.57  | 87   | Nicaragua.....                 | 2.89  | 33.37 |
| 25   | Sweden.....                   | 4.33  | 62.16  | 88   | Armenia.....                   | 2.86  | 32.85 |
| 26   | Chile.....                    | 4.27  | 60.97  | 89   | Congo, Dem. Rep.....           | 2.79  | 31.36 |
| 27   | Oman.....                     | 4.26  | 60.67  | 90   | Brazil.....                    | 2.78  | 31.26 |
| 28   | Belgium.....                  | 4.17  | 58.80  | 91   | Uruguay.....                   | 2.73  | 30.28 |
| 29   | Gambia.....                   | 4.16  | 58.76  | 92   | Georgia.....                   | 2.73  | 30.26 |
| 30   | Denmark.....                  | 4.05  | 56.41  | 93   | Bangladesh.....                | 2.67  | 29.05 |
| 31   | Iceland.....                  | 4.04  | 56.21  | 94   | Turkey.....                    | 2.63  | 28.36 |
| 32   | Mauritius.....                | 4.02  | 55.88  | 95   | Italy.....                     | 2.62  | 28.16 |
| 33   | Kenya.....                    | 4.00  | 55.46  | 96   | Lebanon.....                   | 2.62  | 28.10 |
| 34   | Ghana.....                    | 3.98  | 55.08  | 97   | Ukraine.....                   | 2.62  | 28.06 |
| 35   | Israel.....                   | 3.97  | 54.88  | 98   | Montenegro.....                | 2.59  | 27.52 |
| 36   | Botswana.....                 | 3.94  | 54.32  | 99   | Iran, Islamic Rep.....         | 2.59  | 27.38 |
| 37   | Costa Rica.....               | 3.93  | 54.13  | 100  | Mongolia.....                  | 2.55  | 26.72 |
| 38   | Austria.....                  | 3.91  | 53.71  | 101  | Cameroon.....                  | 2.55  | 26.59 |
| 39   | Brunei Darussalam.....        | 3.90  | 53.53  | 102  | Hungary.....                   | 2.54  | 26.51 |
| 40   | Korea, Rep.....               | 3.86  | 52.77  | 103  | Poland.....                    | 2.52  | 26.03 |
| 41   | Thailand.....                 | 3.81  | 51.66  | 104  | Slovenia.....                  | 2.50  | 25.67 |
| 42   | Tajikistan.....               | 3.78  | 51.10  | 105  | Nepal.....                     | 2.44  | 24.58 |
| 43   | Cambodia.....                 | 3.77  | 50.92  | 106  | Egypt.....                     | 2.40  | 23.78 |
| 44   | Namibia.....                  | 3.67  | 49.02  | 107  | Lithuania.....                 | 2.38  | 23.27 |
| 45   | Liberia.....                  | 3.67  | 49.00  | 108  | Bulgaria.....                  | 2.32  | 22.13 |
| 46   | Bhutan.....                   | 3.65  | 48.62  | 109  | Tunisia.....                   | 2.31  | 21.95 |
| 47   | Finland.....                  | 3.65  | 48.54  | 110  | Kyrgyzstan.....                | 2.31  | 21.87 |
| 48   | Senegal.....                  | 3.59  | 47.29  | 111  | Albania.....                   | 2.29  | 21.46 |
| 49   | Peru.....                     | 3.58  | 47.23  | 112  | Latvia.....                    | 2.28  | 21.24 |
| 50   | Nigeria.....                  | 3.57  | 46.95  | 113  | Burundi.....                   | 2.26  | 21.00 |
| 51   | Ethiopia.....                 | 3.52  | 46.05  | 114  | El Salvador.....               | 2.24  | 20.58 |
| 52   | Mexico.....                   | 3.52  | 45.99  | 115  | Zimbabwe.....                  | 2.19  | 19.53 |
| 53   | Trinidad and Tobago.....      | 3.52  | 45.89  | 116  | Algeria.....                   | 2.05  | 16.74 |
| 54   | Laos.....                     | 3.51  | 45.69  | 117  | Yemen.....                     | 2.03  | 16.35 |
| 55   | Kazakhstan.....               | 3.48  | 45.16  | 118  | Slovakia.....                  | 2.01  | 15.93 |
| 56   | Zambia.....                   | 3.47  | 45.04  | 119  | Romania.....                   | 1.98  | 15.35 |
| 57   | Estonia.....                  | 3.46  | 44.82  | 120  | Serbia.....                    | 1.95  | 14.81 |
| 58   | Viet Nam.....                 | 3.44  | 44.34  | 121  | Greece.....                    | 1.90  | 13.74 |
| 59   | France.....                   | 3.43  | 44.20  | 122  | Moldova, Rep.....              | 1.84  | 12.49 |
| 60   | Tanzania, United Rep.....     | 3.42  | 44.02  | 123  | Croatia.....                   | 1.80  | 11.67 |
| 61   | Portugal.....                 | 3.39  | 43.33  | 124  | Bosnia and Herzegovina.....    | 1.59  | 7.66  |
| 62   | Pakistan.....                 | 3.34  | 42.43  | 125  | Venezuela, Bolivarian Rep..... | 1.21  | 0.00  |
| 63   | South Africa.....             | 3.33  | 42.25  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 2.2.1 Tolerance of minorities

### Discrimination and violence against minorities | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Iceland                  | 1.30  | 100.00 | 63   | Viet Nam                   | 6.20  | 42.35 |
| 2    | Ireland                  | 1.60  | 96.47  | 65   | South Africa               | 6.30  | 41.18 |
| 3    | Sweden                   | 1.70  | 95.29  | 66   | Cyprus                     | 6.50  | 38.82 |
| 4    | Finland                  | 2.00  | 91.76  | 66   | Slovakia                   | 6.50  | 38.82 |
| 5    | Portugal                 | 2.70  | 83.53  | 68   | Laos                       | 6.60  | 37.65 |
| 5    | Uruguay                  | 2.70  | 83.53  | 68   | Senegal                    | 6.60  | 37.65 |
| 7    | Singapore                | 2.80  | 82.35  | 70   | Azerbaijan                 | 6.70  | 36.47 |
| 8    | Korea, Rep.              | 3.10  | 78.82  | 70   | Malaysia                   | 6.70  | 36.47 |
| 8    | Luxembourg               | 3.10  | 78.82  | 70   | Mexico                     | 6.70  | 36.47 |
| 8    | Oman                     | 3.10  | 78.82  | 70   | Nicaragua                  | 6.70  | 36.47 |
| 11   | Gambia                   | 3.40  | 75.29  | 74   | Estonia                    | 6.80  | 35.29 |
| 12   | Canada                   | 3.60  | 72.94  | 75   | Ukraine                    | 6.90  | 34.12 |
| 12   | United Arab Emirates     | 3.60  | 72.94  | 76   | Bosnia and Herzegovina     | 7.00  | 32.94 |
| 14   | Chile                    | 3.80  | 70.59  | 76   | Colombia                   | 7.00  | 32.94 |
| 14   | Mauritius                | 3.80  | 70.59  | 76   | France                     | 7.00  | 32.94 |
| 14   | New Zealand              | 3.80  | 70.59  | 76   | Moldova, Rep.              | 7.00  | 32.94 |
| 14   | Norway                   | 3.80  | 70.59  | 76   | Romania                    | 7.00  | 32.94 |
| 14   | Switzerland              | 3.80  | 70.59  | 81   | Cambodia                   | 7.10  | 31.76 |
| 19   | Japan                    | 3.90  | 69.41  | 82   | Indonesia                  | 7.30  | 29.41 |
| 19   | Malta                    | 3.90  | 69.41  | 82   | Kazakhstan                 | 7.30  | 29.41 |
| 21   | Austria                  | 4.00  | 68.24  | 84   | Morocco                    | 7.40  | 28.24 |
| 21   | Mongolia                 | 4.00  | 68.24  | 84   | Venezuela, Bolivarian Rep. | 7.40  | 28.24 |
| 23   | Australia                | 4.10  | 67.06  | 86   | Ecuador                    | 7.50  | 27.06 |
| 23   | Lesotho                  | 4.10  | 67.06  | 86   | Saudi Arabia               | 7.50  | 27.06 |
| 25   | Slovenia                 | 4.20  | 65.88  | 86   | Zimbabwe                   | 7.50  | 27.06 |
| 26   | Madagascar               | 4.30  | 64.71  | 89   | Bhutan                     | 7.60  | 25.88 |
| 27   | Belgium                  | 4.40  | 63.53  | 89   | Montenegro                 | 7.60  | 25.88 |
| 27   | Costa Rica               | 4.40  | 63.53  | 89   | Peru                       | 7.60  | 25.88 |
| 27   | Netherlands              | 4.40  | 63.53  | 89   | Tajikistan                 | 7.60  | 25.88 |
| 27   | Trinidad and Tobago      | 4.40  | 63.53  | 93   | Jordan                     | 7.70  | 24.71 |
| 31   | Denmark                  | 4.60  | 61.18  | 93   | Latvia                     | 7.70  | 24.71 |
| 31   | Ghana                    | 4.60  | 61.18  | 95   | Serbia                     | 7.80  | 23.53 |
| 31   | Lithuania                | 4.60  | 61.18  | 96   | Algeria                    | 7.90  | 22.35 |
| 31   | Qatar                    | 4.60  | 61.18  | 96   | Bahrain                    | 7.90  | 22.35 |
| 35   | Albania                  | 4.70  | 60.00  | 96   | Mali                       | 7.90  | 22.35 |
| 35   | Argentina                | 4.70  | 60.00  | 96   | Tunisia                    | 7.90  | 22.35 |
| 37   | Germany                  | 4.80  | 58.82  | 100  | Burundi                    | 8.10  | 20.00 |
| 38   | Poland                   | 4.90  | 57.65  | 100  | China                      | 8.10  | 20.00 |
| 39   | Czech Republic           | 5.00  | 56.47  | 100  | Georgia                    | 8.10  | 20.00 |
| 39   | Hungary                  | 5.00  | 56.47  | 100  | Philippines                | 8.10  | 20.00 |
| 39   | Italy                    | 5.00  | 56.47  | 104  | Guatemala                  | 8.20  | 18.82 |
| 42   | Botswana                 | 5.10  | 55.29  | 105  | Cameroon                   | 8.50  | 15.29 |
| 42   | Greece                   | 5.10  | 55.29  | 105  | India                      | 8.50  | 15.29 |
| 42   | Malawi                   | 5.10  | 55.29  | 107  | Ethiopia                   | 8.60  | 14.12 |
| 42   | United States of America | 5.1   | 55.29  | 107  | Kyrgyzstan                 | 8.60  | 14.12 |
| 46   | Kuwait                   | 5.20  | 54.12  | 109  | Lebanon                    | 8.70  | 12.94 |
| 47   | Bulgaria                 | 5.30  | 52.94  | 110  | Iran, Islamic Rep.         | 8.80  | 11.76 |
| 47   | Panama                   | 5.30  | 52.94  | 111  | Bangladesh                 | 8.90  | 10.59 |
| 49   | Tanzania, United Rep.    | 5.40  | 51.76  | 112  | Egypt                      | 9.00  | 9.41  |
| 49   | Zambia                   | 5.40  | 51.76  | 112  | Russian Federation         | 9.00  | 9.41  |
| 51   | Armenia                  | 5.60  | 49.41  | 112  | Thailand                   | 9.00  | 9.41  |
| 51   | Mozambique               | 5.60  | 49.41  | 112  | Uganda                     | 9.00  | 9.41  |
| 53   | Brazil                   | 5.70  | 48.24  | 116  | Kenya                      | 9.10  | 8.24  |
| 54   | Brunei Darussalam        | 5.90  | 45.88  | 116  | Rwanda                     | 9.10  | 8.24  |
| 54   | Spain                    | 5.90  | 45.88  | 118  | Sri Lanka                  | 9.20  | 7.06  |
| 54   | United Kingdom           | 5.90  | 45.88  | 119  | Nigeria                    | 9.40  | 4.71  |
| 57   | Croatia                  | 6.00  | 44.71  | 120  | Nepal                      | 9.50  | 3.53  |
| 57   | Dominican Republic       | 6.00  | 44.71  | 120  | Turkey                     | 9.50  | 3.53  |
| 57   | Liberia                  | 6.00  | 44.71  | 120  | Yemen                      | 9.50  | 3.53  |
| 57   | Namibia                  | 6.00  | 44.71  | 123  | Congo, Dem. Rep.           | 9.70  | 1.18  |
| 57   | Paraguay                 | 6.00  | 44.71  | 123  | Pakistan                   | 9.70  | 1.18  |
| 62   | Honduras                 | 6.10  | 43.53  | 125  | Israel                     | 9.80  | 0.00  |
| 63   | El Salvador              | 6.20  | 42.35  |      |                            |       |       |

**SOURCE:** Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>) based on the Fund for Peace Fragile States Index

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 2.2.2 Tolerance of immigrants

The percentage of respondents answering yes to the question: Is the city or area where you live a good place or not a good place to live for immigrants from other countries? | 2017

| Rank | Country                    | Value | Score  | Rank | Country                | Value | Score |
|------|----------------------------|-------|--------|------|------------------------|-------|-------|
| 1    | United Arab Emirates       | 0.91  | 100.00 | 64   | Morocco                | 0.57  | 54.05 |
| 2    | New Zealand                | 0.89  | 97.30  | 64   | Panama                 | 0.57  | 54.05 |
| 3    | Canada                     | 0.88  | 95.95  | 64   | Zimbabwe               | 0.57  | 54.05 |
| 4    | Iceland                    | 0.87  | 94.59  | 67   | Korea, Rep.            | 0.56  | 52.70 |
| 5    | Mali                       | 0.86  | 93.24  | 67   | Liberia                | 0.56  | 52.70 |
| 5    | Norway                     | 0.86  | 93.24  | 67   | Madagascar             | 0.56  | 52.70 |
| 7    | Ireland                    | 0.85  | 91.89  | 67   | Montenegro             | 0.56  | 52.70 |
| 8    | Australia                  | 0.84  | 90.54  | 67   | Serbia                 | 0.56  | 52.70 |
| 9    | Luxembourg                 | 0.83  | 89.19  | 67   | Turkey                 | 0.56  | 52.70 |
| 10   | Senegal                    | 0.82  | 87.84  | 67   | Zambia                 | 0.56  | 52.70 |
| 11   | Spain                      | 0.81  | 86.49  | 74   | Honduras               | 0.55  | 51.35 |
| 12   | Denmark                    | 0.80  | 85.14  | 74   | Sri Lanka              | 0.55  | 51.35 |
| 12   | Nepal                      | 0.80  | 85.14  | 76   | Kyrgyzstan             | 0.54  | 50.00 |
| 12   | Qatar                      | 0.80  | 85.14  | 77   | Albania                | 0.53  | 48.65 |
| 12   | Saudi Arabia               | 0.80  | 85.14  | 77   | Armenia                | 0.53  | 48.65 |
| 12   | Sweden                     | 0.80  | 85.14  | 77   | Azerbaijan             | 0.53  | 48.65 |
| 12   | United Kingdom             | 0.80  | 85.14  | 80   | Ethiopia               | 0.51  | 45.95 |
| 18   | Netherlands                | 0.79  | 83.78  | 80   | Jordan                 | 0.51  | 45.95 |
| 18   | United States of America   | 0.79  | 83.78  | 80   | Mexico                 | 0.51  | 45.95 |
| 20   | Germany                    | 0.78  | 82.43  | 80   | Tanzania, United Rep.  | 0.51  | 45.95 |
| 21   | Bahrain                    | 0.75  | 78.38  | 84   | Algeria                | 0.49  | 43.24 |
| 22   | Argentina                  | 0.74  | 77.03  | 84   | Iran, Islamic Rep.     | 0.49  | 43.24 |
| 22   | Austria                    | 0.74  | 77.03  | 84   | Japan                  | 0.49  | 43.24 |
| 22   | Paraguay                   | 0.74  | 77.03  | 87   | Bosnia and Herzegovina | 0.48  | 41.89 |
| 22   | Portugal                   | 0.74  | 77.03  | 87   | Lebanon                | 0.48  | 41.89 |
| 26   | Finland                    | 0.73  | 75.68  | 89   | Malawi                 | 0.47  | 40.54 |
| 26   | Mauritius                  | 0.73  | 75.68  | 90   | Pakistan               | 0.46  | 39.19 |
| 26   | Uruguay                    | 0.73  | 75.68  | 91   | Egypt                  | 0.45  | 37.84 |
| 29   | Bangladesh                 | 0.72  | 74.32  | 91   | Guatemala              | 0.45  | 37.84 |
| 30   | Belgium                    | 0.71  | 72.97  | 91   | Viet Nam               | 0.45  | 37.84 |
| 30   | Congo, Dem. Rep.           | 0.71  | 72.97  | 94   | El Salvador            | 0.43  | 35.14 |
| 30   | Ecuador                    | 0.71  | 72.97  | 94   | Georgia                | 0.43  | 35.14 |
| 30   | Nigeria                    | 0.71  | 72.97  | 94   | Greece                 | 0.43  | 35.14 |
| 34   | Brazil                     | 0.70  | 71.62  | 97   | Kazakhstan             | 0.42  | 33.78 |
| 34   | Chile                      | 0.70  | 71.62  | 98   | Malaysia               | 0.41  | 32.43 |
| 34   | France                     | 0.70  | 71.62  | 98   | Uganda                 | 0.41  | 32.43 |
| 34   | Kuwait                     | 0.70  | 71.62  | 100  | China                  | 0.40  | 31.08 |
| 34   | Switzerland                | 0.70  | 71.62  | 100  | Moldova, Rep.          | 0.40  | 31.08 |
| 39   | Rwanda                     | 0.69  | 70.27  | 100  | Tajikistan             | 0.40  | 31.08 |
| 40   | Trinidad and Tobago        | 0.68  | 68.92  | 103  | Russian Federation     | 0.39  | 29.73 |
| 41   | Costa Rica                 | 0.67  | 67.57  | 104  | India                  | 0.38  | 28.38 |
| 41   | Malta                      | 0.67  | 67.57  | 104  | Slovenia               | 0.38  | 28.38 |
| 41   | Mozambique                 | 0.67  | 67.57  | 106  | Ukraine                | 0.37  | 27.03 |
| 44   | Botswana                   | 0.66  | 66.22  | 107  | Czech Republic         | 0.36  | 25.68 |
| 44   | Colombia                   | 0.66  | 66.22  | 108  | Croatia                | 0.34  | 22.97 |
| 44   | Dominican Republic         | 0.66  | 66.22  | 109  | Indonesia              | 0.32  | 20.27 |
| 44   | Lesotho                    | 0.66  | 66.22  | 110  | Israel                 | 0.31  | 18.92 |
| 44   | Singapore                  | 0.66  | 66.22  | 111  | Mongolia               | 0.30  | 17.57 |
| 49   | Ghana                      | 0.65  | 64.86  | 112  | Lithuania              | 0.29  | 16.22 |
| 49   | Kenya                      | 0.65  | 64.86  | 112  | Yemen                  | 0.29  | 16.22 |
| 51   | South Africa               | 0.64  | 63.51  | 114  | Hungary                | 0.28  | 14.86 |
| 52   | Cameroon                   | 0.63  | 62.16  | 115  | Estonia                | 0.27  | 13.51 |
| 52   | Italy                      | 0.63  | 62.16  | 116  | Bulgaria               | 0.26  | 12.16 |
| 52   | Laos                       | 0.63  | 62.16  | 117  | Romania                | 0.25  | 10.81 |
| 52   | Venezuela, Bolivarian Rep. | 0.63  | 62.16  | 118  | Slovakia               | 0.23  | 8.11  |
| 56   | Cyprus                     | 0.61  | 59.46  | 118  | Thailand               | 0.23  | 8.11  |
| 56   | Peru                       | 0.61  | 59.46  | 120  | Latvia                 | 0.22  | 6.76  |
| 56   | Tunisia                    | 0.61  | 59.46  | 121  | Poland                 | 0.21  | 5.41  |
| 59   | Bhutan                     | 0.60  | 58.11  | 122  | Cambodia               | 0.17  | 0.00  |
| 59   | Philippines                | 0.60  | 58.11  |      | Brunei Darussalam      | n/a   | n/a   |
| 61   | Namibia                    | 0.59  | 56.76  |      | Gambia                 | n/a   | n/a   |
| 62   | Burundi                    | 0.58  | 55.41  |      | Oman                   | n/a   | n/a   |
| 62   | Nicaragua                  | 0.58  | 55.41  |      |                        |       |       |

**SOURCE:** Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>) based on the Gallup World Poll

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 2.2.3 Social mobility

**Average answer to the question: In your country, to what extent do individuals have the opportunity to improve their economic situation through their personal efforts regardless of the socioeconomic status of their parents? [1 = not at all; 7 = to a great extent] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Finland.....                  | 6.31  | 100.00 | 64   | Uganda.....                    | 4.24  | 49.46 |
| 1    | Switzerland.....              | 6.31  | 100.00 | 65   | Morocco.....                   | 4.22  | 48.95 |
| 3    | New Zealand.....              | 6.25  | 98.51  | 66   | Tanzania, United Rep. ....     | 4.22  | 48.93 |
| 4    | Norway.....                   | 6.12  | 95.29  | 67   | Senegal.....                   | 4.20  | 48.44 |
| 5    | Singapore.....                | 6.07  | 94.12  | 68   | Gambia.....                    | 4.18  | 48.07 |
| 6    | Australia.....                | 6.00  | 92.36  | 69   | Georgia.....                   | 4.17  | 47.88 |
| 7    | Canada.....                   | 5.97  | 91.70  | 70   | Poland.....                    | 4.17  | 47.78 |
| 8    | Iceland.....                  | 5.96  | 91.53  | 71   | Honduras.....                  | 4.16  | 47.54 |
| 9    | United Arab Emirates.....     | 5.94  | 90.97  | 72   | Paraguay.....                  | 4.13  | 46.88 |
| 10   | Netherlands.....              | 5.92  | 90.53  | 73   | Bangladesh.....                | 4.13  | 46.71 |
| 11   | Denmark.....                  | 5.89  | 89.65  | 74   | Kyrgyzstan.....                | 4.10  | 46.05 |
| 12   | Luxembourg.....               | 5.87  | 89.21  | 75   | Brazil.....                    | 4.10  | 46.02 |
| 13   | United States of America..... | 5.68  | 84.53  | 76   | Thailand.....                  | 4.08  | 45.51 |
| 14   | Austria.....                  | 5.65  | 83.99  | 77   | Jordan.....                    | 4.06  | 45.19 |
| 15   | Estonia.....                  | 5.62  | 83.26  | 78   | Zambia.....                    | 4.05  | 44.95 |
| 16   | Qatar.....                    | 5.49  | 79.89  | 79   | Philippines.....               | 4.02  | 44.14 |
| 17   | Ireland.....                  | 5.47  | 79.53  | 80   | Mali.....                      | 4.01  | 43.92 |
| 18   | Germany.....                  | 5.46  | 79.38  | 81   | Cameroon.....                  | 4.01  | 43.80 |
| 19   | Belgium.....                  | 5.44  | 78.89  | 82   | Montenegro.....                | 3.97  | 42.92 |
| 20   | Malta.....                    | 5.44  | 78.67  | 83   | Ethiopia.....                  | 3.95  | 42.53 |
| 21   | Sweden.....                   | 5.36  | 76.79  | 84   | Russian Federation.....        | 3.95  | 42.41 |
| 22   | Rwanda.....                   | 5.35  | 76.48  | 85   | South Africa.....              | 3.91  | 41.48 |
| 23   | Czech Republic.....           | 5.33  | 76.09  | 86   | Turkey.....                    | 3.91  | 41.41 |
| 24   | Bahrain.....                  | 5.26  | 74.30  | 87   | Armenia.....                   | 3.87  | 40.43 |
| 25   | United Kingdom.....           | 5.20  | 72.82  | 88   | Mexico.....                    | 3.86  | 40.34 |
| 26   | Japan.....                    | 5.14  | 71.45  | 89   | Italy.....                     | 3.86  | 40.31 |
| 27   | Malaysia.....                 | 5.13  | 71.25  | 90   | Viet Nam.....                  | 3.86  | 40.29 |
| 28   | Israel.....                   | 4.98  | 67.64  | 91   | Pakistan.....                  | 3.85  | 40.00 |
| 29   | Costa Rica.....               | 4.97  | 67.30  | 92   | Congo, Dem. Rep.....           | 3.84  | 39.75 |
| 30   | Bhutan.....                   | 4.96  | 67.06  | 93   | Iran, Islamic Rep.....         | 3.82  | 39.17 |
| 31   | Saudi Arabia.....             | 4.87  | 64.86  | 94   | Greece.....                    | 3.81  | 39.04 |
| 32   | France.....                   | 4.72  | 61.15  | 95   | Albania.....                   | 3.79  | 38.56 |
| 33   | Slovenia.....                 | 4.66  | 59.71  | 96   | Kuwait.....                    | 3.78  | 38.36 |
| 34   | Brunei Darussalam.....        | 4.65  | 59.39  | 97   | Algeria.....                   | 3.78  | 38.21 |
| 35   | Uruguay.....                  | 4.63  | 59.10  | 98   | Nepal.....                     | 3.77  | 37.95 |
| 36   | Trinidad and Tobago.....      | 4.62  | 58.78  | 99   | Malawi.....                    | 3.73  | 37.04 |
| 37   | Oman.....                     | 4.61  | 58.64  | 100  | Madagascar.....                | 3.71  | 36.63 |
| 38   | Mongolia.....                 | 4.59  | 57.98  | 101  | Egypt.....                     | 3.70  | 36.26 |
| 39   | Panama.....                   | 4.58  | 57.74  | 102  | Liberia.....                   | 3.68  | 35.92 |
| 40   | Mauritius.....                | 4.55  | 57.08  | 103  | Colombia.....                  | 3.65  | 35.19 |
| 41   | Tajikistan.....               | 4.54  | 56.83  | 104  | Cambodia.....                  | 3.65  | 35.16 |
| 42   | India.....                    | 4.53  | 56.49  | 105  | Korea, Rep.....                | 3.65  | 35.11 |
| 43   | Lithuania.....                | 4.52  | 56.37  | 106  | Dominican Republic.....        | 3.64  | 34.77 |
| 44   | China.....                    | 4.49  | 55.56  | 107  | Lebanon.....                   | 3.64  | 34.75 |
| 45   | Indonesia.....                | 4.48  | 55.32  | 108  | Nicaragua.....                 | 3.60  | 33.89 |
| 46   | Kenya.....                    | 4.45  | 54.73  | 109  | Ecuador.....                   | 3.60  | 33.85 |
| 47   | Guatemala.....                | 4.45  | 54.56  | 110  | Zimbabwe.....                  | 3.59  | 33.67 |
| 48   | Botswana.....                 | 4.44  | 54.39  | 111  | Croatia.....                   | 3.57  | 33.14 |
| 49   | Nigeria.....                  | 4.43  | 54.25  | 112  | Lesotho.....                   | 3.56  | 32.92 |
| 50   | Portugal.....                 | 4.43  | 54.22  | 113  | Argentina.....                 | 3.51  | 31.75 |
| 51   | Namibia.....                  | 4.42  | 53.88  | 114  | Moldova, Rep.....              | 3.44  | 29.89 |
| 52   | Spain.....                    | 4.40  | 53.47  | 115  | Mozambique.....                | 3.43  | 29.70 |
| 53   | Latvia.....                   | 4.40  | 53.37  | 116  | Romania.....                   | 3.42  | 29.60 |
| 54   | Laos.....                     | 4.36  | 52.49  | 117  | Burundi.....                   | 3.37  | 28.18 |
| 55   | Chile.....                    | 4.35  | 52.29  | 118  | Hungary.....                   | 3.33  | 27.31 |
| 56   | Azerbaijan.....               | 4.33  | 51.66  | 119  | Bulgaria.....                  | 3.29  | 26.28 |
| 57   | Peru.....                     | 4.33  | 51.59  | 120  | Serbia.....                    | 3.22  | 24.52 |
| 58   | Kazakhstan.....               | 4.32  | 51.46  | 121  | Bosnia and Herzegovina.....    | 3.18  | 23.57 |
| 59   | Slovakia.....                 | 4.31  | 51.24  | 121  | El Salvador.....               | 3.18  | 23.57 |
| 60   | Ghana.....                    | 4.29  | 50.73  | 123  | Ukraine.....                   | 3.17  | 23.47 |
| 61   | Tunisia.....                  | 4.26  | 50.10  | 124  | Yemen.....                     | 2.97  | 18.62 |
| 62   | Cyprus.....                   | 4.26  | 50.05  | 125  | Venezuela, Bolivarian Rep..... | 2.21  | 0.00  |
| 63   | Sri Lanka.....                | 4.24  | 49.54  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 2.2.4 Female graduates

### Female tertiary graduates (%) | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Dominican Republic.....       | 67.72 | 100.00 | 64   | France.....                    | 56.03 | 70.35 |
| 2    | Panama.....                   | 66.40 | 96.66  | 65   | Kazakhstan.....                | 56.03 | 70.34 |
| 3    | Estonia.....                  | 65.95 | 95.52  | 66   | Chile.....                     | 56.03 | 70.34 |
| 4    | Poland.....                   | 65.68 | 94.84  | 67   | Spain.....                     | 55.90 | 70.02 |
| 5    | Latvia.....                   | 65.64 | 94.74  | 68   | El Salvador.....               | 55.51 | 69.02 |
| 6    | Namibia.....                  | 65.60 | 94.62  | 69   | Azerbaijan.....                | 55.42 | 68.79 |
| 7    | Tunisia.....                  | 65.12 | 93.40  | 70   | United Arab Emirates.....      | 55.15 | 68.12 |
| 8    | Argentina.....                | 65.00 | 93.10  | 71   | Austria.....                   | 54.93 | 67.55 |
| 9    | Cyprus.....                   | 64.50 | 91.84  | 72   | Ukraine.....                   | 53.93 | 65.02 |
| 10   | Iceland.....                  | 64.45 | 91.72  | 73   | Viet Nam.....                  | 53.84 | 64.78 |
| 11   | Honduras.....                 | 64.45 | 91.72  | 74   | Egypt.....                     | 53.64 | 64.26 |
| 12   | Algeria.....                  | 64.14 | 90.93  | 75   | Malaysia.....                  | 53.59 | 64.16 |
| 13   | Uruguay.....                  | 64.12 | 90.88  | 76   | Mexico.....                    | 52.80 | 62.14 |
| 14   | Albania.....                  | 63.80 | 90.05  | 77   | Ireland.....                   | 52.18 | 60.58 |
| 15   | Brunei Darussalam.....        | 63.33 | 88.87  | 78   | Saudi Arabia.....              | 51.79 | 59.58 |
| 16   | Costa Rica.....               | 62.96 | 87.93  | 79   | China.....                     | 51.71 | 59.38 |
| 17   | Slovakia.....                 | 62.57 | 86.94  | 80   | Korea, Rep.....                | 51.07 | 57.75 |
| 18   | Lithuania.....                | 62.44 | 86.60  | 81   | India.....                     | 50.34 | 55.91 |
| 19   | Guatemala.....                | 62.38 | 86.46  | 82   | Japan.....                     | 49.43 | 53.60 |
| 20   | Sri Lanka.....                | 62.23 | 86.08  | 83   | Turkey.....                    | 49.24 | 53.11 |
| 21   | Bahrain.....                  | 61.99 | 85.46  | 84   | Laos.....                      | 48.78 | 51.96 |
| 22   | Qatar.....                    | 61.93 | 85.31  | 85   | Switzerland.....               | 48.50 | 51.22 |
| 23   | Sweden.....                   | 61.84 | 85.08  | 86   | Nepal.....                     | 48.31 | 50.74 |
| 24   | Hungary.....                  | 61.34 | 83.81  | 87   | Madagascar.....                | 48.15 | 50.34 |
| 25   | Bulgaria.....                 | 61.21 | 83.49  | 88   | Morocco.....                   | 47.61 | 48.97 |
| 26   | Brazil.....                   | 61.10 | 83.20  | 89   | Gambia.....                    | 47.42 | 48.49 |
| 27   | Slovenia.....                 | 61.00 | 82.94  | 90   | Jordan.....                    | 46.80 | 46.91 |
| 28   | Mongolia.....                 | 60.91 | 82.73  | 91   | Mozambique.....                | 46.35 | 45.77 |
| 29   | Lesotho.....                  | 60.83 | 82.52  | 92   | Rwanda.....                    | 46.26 | 45.54 |
| 30   | Czech Republic.....           | 60.52 | 81.75  | 93   | Cambodia.....                  | 42.77 | 36.70 |
| 31   | Georgia.....                  | 60.42 | 81.47  | 94   | Tajikistan.....                | 42.52 | 36.06 |
| 32   | South Africa.....             | 60.41 | 81.46  | 95   | Zimbabwe.....                  | 41.54 | 33.57 |
| 33   | Croatia.....                  | 59.84 | 80.00  | 96   | Ghana.....                     | 41.54 | 33.56 |
| 34   | Moldova, Rep.....             | 59.82 | 79.95  | 97   | Iran, Islamic Rep.....         | 41.17 | 32.64 |
| 35   | Montenegro.....               | 59.79 | 79.87  | 98   | Liberia.....                   | 38.15 | 24.98 |
| 36   | Oman.....                     | 59.55 | 79.28  | 99   | Malawi.....                    | 34.49 | 15.67 |
| 37   | Belgium.....                  | 59.51 | 79.19  | 100  | Bhutan.....                    | 34.19 | 14.92 |
| 38   | Finland.....                  | 59.34 | 78.75  | 101  | Ethiopia.....                  | 33.52 | 13.21 |
| 39   | Portugal.....                 | 59.32 | 78.69  | 102  | Senegal.....                   | 33.42 | 12.97 |
| 40   | Malta.....                    | 59.21 | 78.40  | 103  | Yemen.....                     | 33.35 | 12.78 |
| 41   | Italy.....                    | 59.02 | 77.92  | 104  | Burundi.....                   | 30.14 | 4.63  |
| 42   | Indonesia.....                | 58.82 | 77.41  | 105  | Bangladesh.....                | 28.31 | 0.00  |
| 43   | Norway.....                   | 58.78 | 77.33  |      | Cameroon.....                  | n/a   | n/a   |
| 44   | Botswana.....                 | 58.76 | 77.28  |      | Canada.....                    | n/a   | n/a   |
| 45   | Bosnia and Herzegovina.....   | 58.66 | 77.01  |      | Congo, Dem. Rep.....           | n/a   | n/a   |
| 46   | Philippines.....              | 58.61 | 76.89  |      | Germany.....                   | n/a   | n/a   |
| 47   | Kyrgyzstan.....               | 58.58 | 76.82  |      | Israel.....                    | n/a   | n/a   |
| 48   | Romania.....                  | 58.55 | 76.74  |      | Kenya.....                     | n/a   | n/a   |
| 49   | Serbia.....                   | 58.52 | 76.66  |      | Mali.....                      | n/a   | n/a   |
| 50   | United States of America..... | 58.36 | 76.25  |      | Mauritius.....                 | n/a   | n/a   |
| 51   | Kuwait.....                   | 58.28 | 76.06  |      | Nicaragua.....                 | n/a   | n/a   |
| 52   | Australia.....                | 57.86 | 74.99  |      | Nigeria.....                   | n/a   | n/a   |
| 53   | Greece.....                   | 57.78 | 74.78  |      | Pakistan.....                  | n/a   | n/a   |
| 54   | United Kingdom.....           | 57.15 | 73.18  |      | Paraguay.....                  | n/a   | n/a   |
| 55   | Armenia.....                  | 57.15 | 73.18  |      | Peru.....                      | n/a   | n/a   |
| 56   | Netherlands.....              | 56.61 | 71.81  |      | Russian Federation.....        | n/a   | n/a   |
| 57   | Ecuador.....                  | 56.53 | 71.61  |      | Singapore.....                 | n/a   | n/a   |
| 58   | Luxembourg.....               | 56.52 | 71.60  |      | Tanzania, United Rep.....      | n/a   | n/a   |
| 59   | Denmark.....                  | 56.43 | 71.36  |      | Trinidad and Tobago.....       | n/a   | n/a   |
| 60   | Thailand.....                 | 56.39 | 71.26  |      | Uganda.....                    | n/a   | n/a   |
| 61   | Colombia.....                 | 56.28 | 70.98  |      | Venezuela, Bolivarian Rep..... | n/a   | n/a   |
| 62   | Lebanon.....                  | 56.20 | 70.77  |      | Zambia.....                    | n/a   | n/a   |
| 63   | New Zealand.....              | 56.03 | 70.35  |      |                                |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 2.2.5 Gender earnings gap

### Estimated earned income ratio | 2017

| Rank | Country                        | Value | Score  | Rank | Country                     | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1    | Burundi.....                   | 1.00  | 100.00 | 64   | Ukraine.....                | 0.60  | 52.21 |
| 2    | Liberia.....                   | 0.98  | 97.85  | 65   | Uganda.....                 | 0.60  | 51.97 |
| 3    | Namibia.....                   | 0.88  | 85.42  | 66   | Czech Republic.....         | 0.60  | 51.85 |
| 4    | Botswana.....                  | 0.87  | 84.11  | 66   | South Africa.....           | 0.60  | 51.85 |
| 5    | Rwanda.....                    | 0.86  | 83.27  | 68   | Israel.....                 | 0.60  | 51.61 |
| 6    | Mozambique.....                | 0.85  | 82.32  | 69   | Kazakhstan.....             | 0.59  | 51.49 |
| 7    | Laos.....                      | 0.85  | 81.60  | 70   | Uruguay.....                | 0.59  | 51.25 |
| 8    | Viet Nam.....                  | 0.82  | 78.61  | 71   | Bahrain.....                | 0.59  | 50.90 |
| 9    | Nicaragua.....                 | 0.82  | 78.02  | 72   | El Salvador.....            | 0.59  | 50.78 |
| 10   | Slovenia.....                  | 0.81  | 76.70  | 73   | Lesotho.....                | 0.59  | 50.66 |
| 11   | Norway.....                    | 0.79  | 74.79  | 74   | Dominican Republic.....     | 0.58  | 50.30 |
| 12   | Sweden.....                    | 0.79  | 74.31  | 75   | Ireland.....                | 0.58  | 50.18 |
| 13   | Thailand.....                  | 0.77  | 72.76  | 76   | Brazil.....                 | 0.58  | 49.58 |
| 14   | Malawi.....                    | 0.75  | 70.37  | 76   | Tajikistan.....             | 0.58  | 49.58 |
| 14   | Moldova, Rep.....              | 0.75  | 70.37  | 78   | Montenegro.....             | 0.57  | 48.75 |
| 16   | Mongolia.....                  | 0.74  | 69.18  | 79   | Bhutan.....                 | 0.57  | 48.39 |
| 17   | France.....                    | 0.74  | 68.82  | 80   | Paraguay.....               | 0.56  | 47.55 |
| 18   | Cambodia.....                  | 0.73  | 67.74  | 81   | United Kingdom.....         | 0.55  | 46.59 |
| 18   | Ghana.....                     | 0.73  | 67.74  | 82   | Costa Rica.....             | 0.55  | 46.48 |
| 20   | Croatia.....                   | 0.73  | 67.38  | 83   | Armenia.....                | 0.55  | 45.76 |
| 20   | Iceland.....                   | 0.73  | 67.38  | 84   | Albania.....                | 0.53  | 43.61 |
| 22   | Portugal.....                  | 0.72  | 66.91  | 85   | Honduras.....               | 0.53  | 43.49 |
| 23   | Lithuania.....                 | 0.72  | 66.55  | 86   | Austria.....                | 0.52  | 43.13 |
| 23   | Tanzania, United Rep.....      | 0.72  | 66.55  | 86   | Japan.....                  | 0.52  | 43.13 |
| 25   | Finland.....                   | 0.71  | 65.35  | 88   | Chile.....                  | 0.52  | 42.77 |
| 26   | Singapore.....                 | 0.70  | 64.52  | 89   | Italy.....                  | 0.52  | 42.41 |
| 27   | Switzerland.....               | 0.70  | 64.28  | 90   | Guatemala.....              | 0.51  | 41.22 |
| 28   | Latvia.....                    | 0.70  | 64.16  | 91   | Senegal.....                | 0.50  | 40.74 |
| 29   | Romania.....                   | 0.69  | 63.08  | 92   | Kyrgyzstan.....             | 0.50  | 40.26 |
| 30   | Germany.....                   | 0.68  | 62.01  | 93   | Mexico.....                 | 0.50  | 39.78 |
| 31   | Colombia.....                  | 0.68  | 61.53  | 94   | Bangladesh.....             | 0.50  | 39.67 |
| 32   | Philippines.....               | 0.68  | 61.29  | 95   | Malta.....                  | 0.49  | 39.55 |
| 33   | Serbia.....                    | 0.67  | 60.69  | 96   | Indonesia.....              | 0.49  | 39.19 |
| 34   | Canada.....                    | 0.67  | 60.57  | 97   | Argentina.....              | 0.49  | 38.47 |
| 34   | Denmark.....                   | 0.67  | 60.57  | 98   | Qatar.....                  | 0.48  | 38.23 |
| 36   | Zimbabwe.....                  | 0.67  | 60.45  | 99   | Georgia.....                | 0.48  | 37.99 |
| 37   | Malaysia.....                  | 0.67  | 60.10  | 100  | Netherlands.....            | 0.48  | 37.87 |
| 38   | Cameroon.....                  | 0.66  | 59.86  | 101  | Azerbaijan.....             | 0.48  | 37.28 |
| 38   | Cyprus.....                    | 0.66  | 59.86  | 102  | Mauritius.....              | 0.47  | 36.80 |
| 40   | Madagascar.....                | 0.66  | 59.74  | 103  | Korea, Rep.....             | 0.45  | 33.93 |
| 41   | Greece.....                    | 0.66  | 59.02  | 104  | Turkey.....                 | 0.44  | 33.09 |
| 42   | Nepal.....                     | 0.65  | 58.66  | 105  | Bosnia and Herzegovina..... | 0.44  | 32.97 |
| 43   | Peru.....                      | 0.65  | 58.54  | 106  | Kuwait.....                 | 0.43  | 31.42 |
| 44   | Nigeria.....                   | 0.65  | 58.30  | 107  | Gambia.....                 | 0.42  | 30.35 |
| 45   | Bulgaria.....                  | 0.65  | 58.18  | 108  | Mali.....                   | 0.38  | 25.45 |
| 46   | Belgium.....                   | 0.65  | 57.95  | 109  | Sri Lanka.....              | 0.35  | 22.22 |
| 46   | United States of America.....  | 0.65  | 57.95  | 110  | Egypt.....                  | 0.29  | 14.58 |
| 48   | Kenya.....                     | 0.65  | 57.71  | 111  | Tunisia.....                | 0.27  | 12.78 |
| 49   | Poland.....                    | 0.64  | 56.63  | 112  | United Arab Emirates.....   | 0.27  | 12.19 |
| 50   | Spain.....                     | 0.63  | 56.03  | 112  | Yemen.....                  | 0.27  | 12.19 |
| 51   | Hungary.....                   | 0.63  | 55.91  | 114  | Morocco.....                | 0.26  | 12.07 |
| 52   | Luxembourg.....                | 0.63  | 55.44  | 115  | Lebanon.....                | 0.25  | 10.51 |
| 53   | Australia.....                 | 0.62  | 55.08  | 116  | India.....                  | 0.23  | 8.24  |
| 54   | Brunei Darussalam.....         | 0.62  | 54.96  | 117  | Saudi Arabia.....           | 0.22  | 6.45  |
| 54   | Panama.....                    | 0.62  | 54.96  | 118  | Pakistan.....               | 0.19  | 2.63  |
| 56   | China.....                     | 0.62  | 54.72  | 119  | Algeria.....                | 0.18  | 2.39  |
| 56   | New Zealand.....               | 0.62  | 54.72  | 120  | Iran, Islamic Rep.....      | 0.17  | 0.60  |
| 58   | Venezuela, Bolivarian Rep..... | 0.62  | 54.60  | 121  | Jordan.....                 | 0.16  | 0.00  |
| 59   | Estonia.....                   | 0.62  | 54.36  |      | Congo, Dem. Rep.....        | n/a   | n/a   |
| 60   | Russian Federation.....        | 0.62  | 54.24  |      | Oman.....                   | n/a   | n/a   |
| 61   | Ecuador.....                   | 0.61  | 53.52  |      | Trinidad and Tobago.....    | n/a   | n/a   |
| 62   | Ethiopia.....                  | 0.60  | 52.69  |      | Zambia.....                 | n/a   | n/a   |
| 63   | Slovakia.....                  | 0.60  | 52.57  |      |                             |       |       |

**SOURCE:** World Economic Forum, *The Global Gender Gap Report 2017* (<http://reports.weforum.org/global-gender-gap-report-2017/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 2.2.6 Leadership opportunities for women

Average answer to the question: In your country, to what extent do companies provide women with the same opportunities as men to rise to positions of leadership? [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Finland.....                  | 6.11  | 100.00 | 64   | Venezuela, Bolivarian Rep..... | 4.34  | 39.67 |
| 2    | Norway.....                   | 5.98  | 95.47  | 65   | Tunisia.....                   | 4.34  | 39.54 |
| 3    | Iceland.....                  | 5.92  | 93.29  | 66   | Zimbabwe.....                  | 4.34  | 39.50 |
| 4    | United Arab Emirates.....     | 5.91  | 93.15  | 67   | Portugal.....                  | 4.34  | 39.47 |
| 5    | Rwanda.....                   | 5.90  | 92.81  | 68   | Senegal.....                   | 4.31  | 38.48 |
| 6    | Sweden.....                   | 5.75  | 87.70  | 69   | Costa Rica.....                | 4.31  | 38.41 |
| 7    | Singapore.....                | 5.75  | 87.59  | 70   | Tanzania, United Rep.....      | 4.29  | 37.93 |
| 8    | Albania.....                  | 5.66  | 84.66  | 71   | Montenegro.....                | 4.28  | 37.39 |
| 9    | Denmark.....                  | 5.55  | 80.64  | 72   | Zambia.....                    | 4.27  | 37.25 |
| 10   | Bhutan.....                   | 5.54  | 80.47  | 73   | Mauritius.....                 | 4.27  | 37.12 |
| 11   | New Zealand.....              | 5.50  | 79.18  | 74   | Sri Lanka.....                 | 4.25  | 36.54 |
| 12   | Malaysia.....                 | 5.46  | 77.78  | 75   | Bulgaria.....                  | 4.23  | 35.89 |
| 13   | United States of America..... | 5.44  | 77.20  | 76   | Slovakia.....                  | 4.21  | 35.04 |
| 14   | Philippines.....              | 5.42  | 76.38  | 77   | Greece.....                    | 4.20  | 34.80 |
| 15   | Qatar.....                    | 5.38  | 74.98  | 78   | Honduras.....                  | 4.18  | 33.98 |
| 16   | Canada.....                   | 5.35  | 73.82  | 79   | Cyprus.....                    | 4.17  | 33.84 |
| 17   | Luxembourg.....               | 5.30  | 72.22  | 80   | Kuwait.....                    | 4.16  | 33.44 |
| 18   | Latvia.....                   | 5.28  | 71.54  | 80   | Poland.....                    | 4.16  | 33.44 |
| 19   | Bahrain.....                  | 5.28  | 71.47  | 82   | Kenya.....                     | 4.14  | 32.69 |
| 20   | Switzerland.....              | 5.25  | 70.65  | 83   | Congo, Dem. Rep.....           | 4.13  | 32.24 |
| 21   | Gambia.....                   | 5.24  | 70.38  | 84   | Madagascar.....                | 4.09  | 30.91 |
| 22   | Estonia.....                  | 5.23  | 69.90  | 85   | Viet Nam.....                  | 4.06  | 30.13 |
| 23   | Netherlands.....              | 5.17  | 67.72  | 86   | South Africa.....              | 4.06  | 29.86 |
| 24   | Australia.....                | 5.05  | 63.84  | 87   | Cameroon.....                  | 4.05  | 29.52 |
| 25   | Germany.....                  | 5.03  | 62.99  | 88   | Lebanon.....                   | 4.04  | 29.45 |
| 26   | Thailand.....                 | 5.01  | 62.41  | 89   | Uruguay.....                   | 4.02  | 28.66 |
| 27   | Oman.....                     | 5.00  | 62.00  | 90   | Burundi.....                   | 4.01  | 28.43 |
| 28   | Slovenia.....                 | 4.99  | 61.86  | 91   | Bangladesh.....                | 4.00  | 27.98 |
| 29   | Brunei Darussalam.....        | 4.95  | 60.22  | 92   | Mozambique.....                | 3.97  | 27.06 |
| 30   | Ireland.....                  | 4.94  | 60.12  | 93   | Guatemala.....                 | 3.97  | 26.86 |
| 31   | Indonesia.....                | 4.93  | 59.78  | 94   | Serbia.....                    | 3.95  | 26.41 |
| 32   | United Kingdom.....           | 4.92  | 59.48  | 95   | Colombia.....                  | 3.94  | 26.07 |
| 33   | Laos.....                     | 4.88  | 57.87  | 96   | Malawi.....                    | 3.91  | 24.98 |
| 34   | Azerbaijan.....               | 4.86  | 57.36  | 97   | Nicaragua.....                 | 3.91  | 24.81 |
| 35   | Kazakhstan.....               | 4.86  | 57.26  | 98   | Liberia.....                   | 3.90  | 24.68 |
| 36   | Lithuania.....                | 4.84  | 56.65  | 99   | Japan.....                     | 3.89  | 24.30 |
| 37   | Belgium.....                  | 4.84  | 56.54  | 100  | Morocco.....                   | 3.85  | 22.80 |
| 38   | Uganda.....                   | 4.83  | 56.13  | 101  | Argentina.....                 | 3.82  | 21.71 |
| 39   | Ukraine.....                  | 4.80  | 55.39  | 102  | Ecuador.....                   | 3.81  | 21.51 |
| 40   | Tajikistan.....               | 4.80  | 55.25  | 103  | France.....                    | 3.80  | 21.00 |
| 41   | Algeria.....                  | 4.78  | 54.40  | 104  | Dominican Republic.....        | 3.78  | 20.59 |
| 42   | Czech Republic.....           | 4.77  | 54.09  | 105  | Croatia.....                   | 3.76  | 19.90 |
| 43   | Mongolia.....                 | 4.76  | 53.85  | 106  | Mali.....                      | 3.75  | 19.33 |
| 44   | Armenia.....                  | 4.75  | 53.65  | 106  | Saudi Arabia.....              | 3.75  | 19.33 |
| 45   | Botswana.....                 | 4.73  | 53.00  | 108  | Nepal.....                     | 3.73  | 18.92 |
| 46   | Israel.....                   | 4.68  | 50.99  | 109  | Bosnia and Herzegovina.....    | 3.73  | 18.88 |
| 46   | Trinidad and Tobago.....      | 4.68  | 50.99  | 110  | Ethiopia.....                  | 3.72  | 18.58 |
| 48   | Austria.....                  | 4.65  | 50.20  | 111  | Pakistan.....                  | 3.71  | 18.00 |
| 49   | Malta.....                    | 4.63  | 49.45  | 112  | Spain.....                     | 3.67  | 16.60 |
| 50   | Cambodia.....                 | 4.60  | 48.30  | 113  | Brazil.....                    | 3.63  | 15.20 |
| 51   | Russian Federation.....       | 4.57  | 47.44  | 114  | Paraguay.....                  | 3.62  | 15.03 |
| 52   | China.....                    | 4.56  | 47.10  | 115  | Iran, Islamic Rep.....         | 3.61  | 14.79 |
| 53   | Panama.....                   | 4.54  | 46.25  | 116  | Chile.....                     | 3.60  | 14.25 |
| 54   | Kyrgyzstan.....               | 4.53  | 46.05  | 117  | Korea, Rep.....                | 3.57  | 13.19 |
| 55   | India.....                    | 4.51  | 45.40  | 118  | Peru.....                      | 3.52  | 11.76 |
| 56   | Jordan.....                   | 4.49  | 44.58  | 119  | Turkey.....                    | 3.52  | 11.72 |
| 57   | Georgia.....                  | 4.48  | 44.31  | 120  | Hungary.....                   | 3.46  | 9.71  |
| 58   | Egypt.....                    | 4.43  | 42.74  | 121  | Mexico.....                    | 3.38  | 6.85  |
| 59   | Namibia.....                  | 4.43  | 42.47  | 122  | Italy.....                     | 3.30  | 4.16  |
| 60   | Ghana.....                    | 4.42  | 42.19  | 123  | Lesotho.....                   | 3.30  | 4.09  |
| 61   | Moldova, Rep.....             | 4.40  | 41.72  | 124  | El Salvador.....               | 3.29  | 3.89  |
| 62   | Romania.....                  | 4.40  | 41.55  | 125  | Yemen.....                     | 3.18  | 0.00  |
| 63   | Nigeria.....                  | 4.37  | 40.73  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.



# Pillar 3

Grow

## 3.1.1 Vocational enrolment

### Vocational enrolment (%) | 2017

| Rank | Country                     | Value | Score  | Rank | Country                        | Value | Score |
|------|-----------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Finland.....                | 47.88 | 100.00 | 64   | Armenia.....                   | 10.52 | 21.91 |
| 2    | Belgium.....                | 45.14 | 94.26  | 65   | Thailand.....                  | 10.14 | 21.10 |
| 3    | Slovenia.....               | 41.76 | 87.19  | 66   | Lithuania.....                 | 9.74  | 20.28 |
| 4    | Croatia.....                | 39.83 | 83.17  | 67   | Gambia.....                    | 9.62  | 20.01 |
| 5    | Honduras.....               | 38.86 | 81.14  | 68   | Korea, Rep.....                | 9.43  | 19.63 |
| 6    | Czech Republic.....         | 38.25 | 79.87  | 69   | Kyrgyzstan.....                | 9.30  | 19.35 |
| 7    | Bosnia and Herzegovina..... | 37.99 | 79.31  | 70   | Mauritius.....                 | 9.25  | 19.25 |
| 8    | Switzerland.....            | 37.46 | 78.21  | 71   | Tunisia.....                   | 9.07  | 18.88 |
| 9    | Australia.....              | 37.34 | 77.96  | 72   | Malta.....                     | 8.98  | 18.68 |
| 10   | Netherlands.....            | 36.28 | 75.74  | 73   | Albania.....                   | 8.64  | 17.97 |
| 11   | Austria.....                | 35.13 | 73.34  | 74   | Algeria.....                   | 8.33  | 17.33 |
| 12   | Serbia.....                 | 35.00 | 73.07  | 75   | Cyprus.....                    | 8.20  | 17.05 |
| 13   | Italy.....                  | 34.32 | 71.65  | 76   | Ukraine.....                   | 8.01  | 16.65 |
| 14   | Luxembourg.....             | 33.10 | 69.10  | 77   | Colombia.....                  | 7.46  | 15.50 |
| 15   | Montenegro.....             | 32.28 | 67.39  | 78   | Liberia.....                   | 7.39  | 15.36 |
| 16   | Slovakia.....               | 31.84 | 66.47  | 79   | South Africa.....              | 7.09  | 14.74 |
| 17   | United Kingdom.....         | 29.53 | 61.64  | 80   | Burundi.....                   | 7.03  | 14.62 |
| 18   | Bulgaria.....               | 29.44 | 61.45  | 81   | Ethiopia.....                  | 7.00  | 14.55 |
| 19   | Norway.....                 | 29.05 | 60.63  | 82   | Bahrain.....                   | 6.65  | 13.82 |
| 20   | Poland.....                 | 28.34 | 59.15  | 83   | Morocco.....                   | 6.09  | 12.63 |
| 21   | Mexico.....                 | 27.57 | 57.54  | 84   | Saudi Arabia.....              | 5.39  | 11.19 |
| 22   | Romania.....                | 27.54 | 57.48  | 85   | Dominican Republic.....        | 5.03  | 10.44 |
| 23   | Portugal.....               | 25.81 | 53.87  | 86   | Mozambique.....                | 4.88  | 10.12 |
| 24   | Turkey.....                 | 25.42 | 53.04  | 87   | Canada.....                    | 4.73  | 9.81  |
| 25   | Guatemala.....              | 24.50 | 51.12  | 88   | Senegal.....                   | 4.71  | 9.75  |
| 26   | Costa Rica.....             | 24.33 | 50.76  | 89   | Venezuela, Bolivarian Rep..... | 4.43  | 9.18  |
| 27   | Sweden.....                 | 23.47 | 48.96  | 90   | Georgia.....                   | 4.41  | 9.13  |
| 28   | Denmark.....                | 22.58 | 47.11  | 91   | Sri Lanka.....                 | 4.22  | 8.74  |
| 29   | Uruguay.....                | 22.12 | 46.16  | 92   | Bangladesh.....                | 3.97  | 8.21  |
| 30   | Cameroon.....               | 21.62 | 45.11  | 93   | Brazil.....                    | 3.80  | 7.86  |
| 31   | Iceland.....                | 21.46 | 44.77  | 94   | Jordan.....                    | 3.77  | 7.80  |
| 32   | Latvia.....                 | 21.41 | 44.67  | 95   | Lesotho.....                   | 3.55  | 7.33  |
| 33   | Egypt.....                  | 21.17 | 44.17  | 96   | Pakistan.....                  | 2.58  | 5.30  |
| 34   | Israel.....                 | 19.76 | 41.22  | 97   | Kuwait.....                    | 2.41  | 4.95  |
| 35   | China.....                  | 19.74 | 41.17  | 98   | Ghana.....                     | 2.32  | 4.76  |
| 36   | Chile.....                  | 19.62 | 40.93  | 99   | Cambodia.....                  | 2.28  | 4.67  |
| 37   | Estonia.....                | 19.24 | 40.13  | 100  | Madagascar.....                | 2.04  | 4.18  |
| 38   | Congo, Dem. Rep.....        | 18.86 | 39.33  | 101  | Bhutan.....                    | 2.00  | 4.09  |
| 39   | Germany.....                | 18.57 | 38.73  | 102  | United Arab Emirates.....      | 1.89  | 3.88  |
| 40   | Spain.....                  | 18.45 | 38.47  | 103  | Peru.....                      | 1.64  | 3.35  |
| 41   | Indonesia.....              | 18.34 | 38.26  | 104  | Nicaragua.....                 | 1.48  | 3.01  |
| 42   | France.....                 | 18.07 | 37.69  | 105  | Tajikistan.....                | 1.41  | 2.87  |
| 43   | El Salvador.....            | 17.63 | 36.77  | 106  | India.....                     | 1.33  | 2.70  |
| 44   | Rwanda.....                 | 16.36 | 34.11  | 107  | Laos.....                      | 1.28  | 2.59  |
| 45   | Panama.....                 | 16.2  | 33.77  | 108  | Qatar.....                     | 0.73  | 1.45  |
| 46   | Ireland.....                | 16.18 | 33.73  | 109  | Nepal.....                     | 0.65  | 1.28  |
| 47   | Greece.....                 | 16.12 | 33.60  | 110  | Kenya.....                     | 0.49  | 0.94  |
| 48   | Russian Federation.....     | 15.84 | 33.03  | 111  | Yemen.....                     | 0.25  | 0.44  |
| 49   | Paraguay.....               | 15.56 | 32.44  | 112  | Oman.....                      | 0.04  | 0.00  |
| 50   | New Zealand.....            | 15.18 | 31.64  |      | Argentina.....                 | n/a   | n/a   |
| 51   | Ecuador.....                | 15.14 | 31.56  |      | Azerbaijan.....                | n/a   | n/a   |
| 52   | Iran, Islamic Rep.....      | 14.57 | 30.36  |      | Botswana.....                  | n/a   | n/a   |
| 53   | Lebanon.....                | 14.12 | 29.42  |      | Malawi.....                    | n/a   | n/a   |
| 54   | Moldova, Rep.....           | 13.35 | 27.82  |      | Namibia.....                   | n/a   | n/a   |
| 55   | Mali.....                   | 12.95 | 26.99  |      | Nigeria.....                   | n/a   | n/a   |
| 56   | Tanzania, United Rep.....   | 12.10 | 25.20  |      | Philippines.....               | n/a   | n/a   |
| 57   | Hungary.....                | 11.66 | 24.29  |      | Trinidad and Tobago.....       | n/a   | n/a   |
| 58   | Singapore.....              | 11.57 | 24.09  |      | Uganda.....                    | n/a   | n/a   |
| 59   | Mongolia.....               | 11.55 | 24.06  |      | United States of America.....  | n/a   | n/a   |
| 60   | Japan.....                  | 11.53 | 24.02  |      | Viet Nam.....                  | n/a   | n/a   |
| 61   | Kazakhstan.....             | 10.98 | 22.86  |      | Zambia.....                    | n/a   | n/a   |
| 62   | Malaysia.....               | 10.91 | 22.73  |      | Zimbabwe.....                  | n/a   | n/a   |
| 63   | Brunei Darussalam.....      | 10.66 | 22.19  |      |                                |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 3.1.2 Tertiary enrolment

### Tertiary enrolment (%) | 2017

| Rank | Country                    | Value  | Score  | Rank | Country                  | Value | Score |
|------|----------------------------|--------|--------|------|--------------------------|-------|-------|
| 1    | Australia                  | 121.86 | 100.00 | 64   | Algeria                  | 42.66 | 34.59 |
| 2    | Greece                     | 117.43 | 96.34  | 65   | Moldova, Rep.            | 41.21 | 33.40 |
| 3    | Turkey                     | 95.43  | 78.18  | 66   | Mauritius                | 38.84 | 31.44 |
| 4    | Korea, Rep.                | 93.26  | 76.38  | 67   | Lebanon                  | 38.20 | 30.91 |
| 5    | Spain                      | 91.18  | 74.66  | 68   | Mexico                   | 36.85 | 29.79 |
| 6    | Chile                      | 90.32  | 73.96  | 69   | United Arab Emirates     | 36.85 | 29.79 |
| 7    | Finland                    | 86.99  | 71.20  | 70   | Jordan                   | 36.26 | 29.31 |
| 8    | Argentina                  | 85.71  | 70.15  | 71   | Philippines              | 35.28 | 28.50 |
| 9    | Ireland                    | 83.53  | 68.35  | 72   | Paraguay                 | 35.08 | 28.33 |
| 10   | Austria                    | 83.46  | 68.28  | 73   | Egypt                    | 34.44 | 27.80 |
| 11   | Ukraine                    | 83.42  | 68.26  | 74   | Tunisia                  | 32.58 | 26.27 |
| 12   | Russian Federation         | 81.82  | 66.93  | 75   | Kuwait                   | 32.57 | 26.26 |
| 13   | New Zealand                | 81.75  | 66.88  | 76   | Morocco                  | 31.96 | 25.75 |
| 14   | Denmark                    | 81.06  | 66.30  | 77   | Tajikistan               | 30.87 | 24.86 |
| 15   | Norway                     | 80.55  | 65.88  | 78   | Brunei Darussalam        | 30.86 | 24.85 |
| 16   | Netherlands                | 80.36  | 65.73  | 79   | Viet Nam                 | 28.26 | 22.70 |
| 17   | Slovenia                   | 80.05  | 65.47  | 80   | El Salvador              | 28.03 | 22.51 |
| 18   | Venezuela, Bolivarian Rep. | 76.99  | 62.95  | 81   | Indonesia                | 27.94 | 22.43 |
| 19   | Iceland                    | 75.77  | 61.93  | 82   | Azerbaijan               | 27.24 | 21.85 |
| 20   | Belgium                    | 74.56  | 60.94  | 83   | India                    | 26.93 | 21.60 |
| 21   | Estonia                    | 72.05  | 58.86  | 84   | Botswana                 | 23.38 | 18.67 |
| 22   | Bulgaria                   | 71.23  | 58.19  | 85   | Guatemala                | 21.28 | 16.94 |
| 23   | Iran, Islamic Rep.         | 68.85  | 56.22  | 86   | Honduras                 | 20.49 | 16.28 |
| 24   | Latvia                     | 68.18  | 55.67  | 87   | South Africa             | 19.78 | 15.70 |
| 25   | Croatia                    | 67.48  | 55.09  | 88   | Luxembourg               | 19.71 | 15.64 |
| 26   | Saudi Arabia               | 66.60  | 54.36  | 89   | Sri Lanka                | 18.86 | 14.93 |
| 27   | Poland                     | 66.56  | 54.33  | 90   | Cameroon                 | 17.41 | 13.74 |
| 28   | Germany                    | 66.28  | 54.10  | 91   | Bangladesh               | 17.33 | 13.67 |
| 29   | Lithuania                  | 65.99  | 53.86  | 92   | Laos                     | 17.21 | 13.57 |
| 30   | France                     | 65.26  | 53.26  | 93   | Ghana                    | 16.07 | 12.63 |
| 31   | Mongolia                   | 64.56  | 52.68  | 94   | Qatar                    | 15.42 | 12.10 |
| 32   | Czech Republic             | 64.46  | 52.59  | 95   | Cambodia                 | 13.14 | 10.21 |
| 33   | Israel                     | 64.16  | 52.35  | 96   | Nepal                    | 11.80 | 9.11  |
| 34   | Japan                      | 63.24  | 51.59  | 97   | Liberia                  | 11.67 | 9.00  |
| 35   | Portugal                   | 62.94  | 51.34  | 98   | Senegal                  | 10.58 | 8.10  |
| 36   | Italy                      | 62.87  | 51.29  | 99   | Bhutan                   | 10.51 | 8.04  |
| 37   | Sweden                     | 62.28  | 50.80  | 100  | Nigeria                  | 10.17 | 7.76  |
| 38   | Serbia                     | 62.14  | 50.68  | 101  | Yemen                    | 9.97  | 7.60  |
| 39   | Albania                    | 61.21  | 49.91  | 102  | Pakistan                 | 9.73  | 7.40  |
| 40   | Cyprus                     | 60.10  | 49.00  | 103  | Namibia                  | 9.33  | 7.06  |
| 41   | Colombia                   | 58.72  | 47.86  | 104  | Lesotho                  | 9.10  | 6.88  |
| 42   | Switzerland                | 57.87  | 47.15  | 105  | Zimbabwe                 | 8.48  | 6.37  |
| 43   | United Kingdom             | 57.29  | 46.68  | 106  | Ethiopia                 | 8.12  | 6.07  |
| 44   | Montenegro                 | 56.88  | 46.33  | 107  | Rwanda                   | 8.00  | 5.97  |
| 45   | Uruguay                    | 55.57  | 45.25  | 108  | Mozambique               | 7.04  | 5.18  |
| 46   | Costa Rica                 | 53.99  | 43.95  | 109  | Congo, Dem. Rep.         | 6.94  | 5.09  |
| 47   | Dominican Republic         | 52.99  | 43.13  | 110  | Mali                     | 5.49  | 3.89  |
| 48   | Slovakia                   | 52.68  | 42.86  | 111  | Burundi                  | 5.30  | 3.74  |
| 49   | Georgia                    | 51.88  | 42.21  | 112  | Madagascar               | 4.81  | 3.33  |
| 50   | Armenia                    | 51.08  | 41.55  | 113  | Uganda                   | 4.62  | 3.18  |
| 51   | Brazil                     | 50.60  | 41.15  | 114  | Kenya                    | 4.04  | 2.70  |
| 52   | Kazakhstan                 | 49.57  | 40.30  | 115  | Zambia                   | 4.01  | 2.68  |
| 53   | Malta                      | 48.84  | 39.69  | 116  | Tanzania, United Rep.    | 3.92  | 2.60  |
| 54   | China                      | 48.44  | 39.37  | 117  | Gambia                   | 3.09  | 1.92  |
| 55   | Hungary                    | 48.03  | 39.03  | 118  | Malawi                   | 0.77  | 0.00  |
| 56   | Romania                    | 48.02  | 39.02  |      | Bosnia and Herzegovina   | n/a   | n/a   |
| 57   | Panama                     | 47.27  | 38.40  |      | Canada                   | n/a   | n/a   |
| 58   | Bahrain                    | 46.57  | 37.82  |      | Nicaragua                | n/a   | n/a   |
| 59   | Kyrgyzstan                 | 45.89  | 37.26  |      | Peru                     | n/a   | n/a   |
| 60   | Thailand                   | 45.89  | 37.26  |      | Singapore                | n/a   | n/a   |
| 61   | Ecuador                    | 45.55  | 36.98  |      | Trinidad and Tobago      | n/a   | n/a   |
| 62   | Oman                       | 44.60  | 36.19  |      | United States of America | n/a   | n/a   |
| 63   | Malaysia                   | 44.12  | 35.79  |      |                          |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

### 3.1.3 Tertiary education expenditure

#### Government expenditure on tertiary education (%) | 2017

| Rank | Country                        | Value | Score  | Rank | Country                     | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1    | Lesotho.....                   | 4.14  | 100.00 | 64   | Israel.....                 | 0.88  | 19.98 |
| 2    | Botswana.....                  | 4.00  | 96.44  | 65   | Liberia.....                | 0.87  | 19.85 |
| 3    | Denmark.....                   | 2.34  | 55.90  | 66   | Viet Nam.....               | 0.85  | 19.31 |
| 4    | Senegal.....                   | 2.28  | 54.41  | 67   | Brunei Darussalam.....      | 0.84  | 19.01 |
| 5    | Norway.....                    | 2.19  | 52.27  | 68   | Russian Federation.....     | 0.80  | 18.17 |
| 6    | Ecuador.....                   | 2.18  | 51.80  | 69   | Czech Republic.....         | 0.80  | 18.13 |
| 7    | Finland.....                   | 2.00  | 47.41  | 70   | Italy.....                  | 0.80  | 18.08 |
| 8    | Sweden.....                    | 1.94  | 46.07  | 71   | Mali.....                   | 0.79  | 17.88 |
| 9    | Namibia.....                   | 1.93  | 45.73  | 72   | Jordan.....                 | 0.78  | 17.56 |
| 10   | Ethiopia.....                  | 1.92  | 45.58  | 73   | Hungary.....                | 0.76  | 17.19 |
| 11   | Ukraine.....                   | 1.85  | 43.88  | 74   | Japan.....                  | 0.75  | 16.79 |
| 12   | Austria.....                   | 1.77  | 41.92  | 75   | Tanzania, United Rep.....   | 0.75  | 16.78 |
| 13   | Netherlands.....               | 1.69  | 39.93  | 76   | South Africa.....           | 0.74  | 16.58 |
| 14   | Canada.....                    | 1.63  | 38.47  | 77   | Albania.....                | 0.73  | 16.43 |
| 15   | New Zealand.....               | 1.62  | 38.25  | 78   | Lebanon.....                | 0.71  | 15.99 |
| 16   | Costa Rica.....                | 1.62  | 38.24  | 79   | Panama.....                 | 0.71  | 15.80 |
| 17   | Tunisia.....                   | 1.58  | 37.21  | 80   | Kenya.....                  | 0.69  | 15.41 |
| 18   | Venezuela, Bolivarian Rep..... | 1.55  | 36.58  | 81   | Romania.....                | 0.68  | 15.12 |
| 19   | Turkey.....                    | 1.55  | 36.51  | 82   | Bulgaria.....               | 0.65  | 14.37 |
| 20   | Iceland.....                   | 1.50  | 35.33  | 83   | Peru.....                   | 0.65  | 14.37 |
| 21   | Belgium.....                   | 1.45  | 34.15  | 84   | Thailand.....               | 0.64  | 14.24 |
| 22   | Estonia.....                   | 1.44  | 33.73  | 85   | Bhutan.....                 | 0.61  | 13.47 |
| 23   | Malta.....                     | 1.40  | 32.74  | 86   | Bahrain.....                | 0.60  | 13.34 |
| 24   | Slovakia.....                  | 1.39  | 32.59  | 87   | Mongolia.....               | 0.57  | 12.45 |
| 25   | Australia.....                 | 1.38  | 32.28  | 88   | Indonesia.....              | 0.57  | 12.40 |
| 26   | United States of America.....  | 1.37  | 32.14  | 89   | Congo, Dem. Rep.....        | 0.55  | 11.89 |
| 27   | Switzerland.....               | 1.33  | 31.16  | 90   | Tajikistan.....             | 0.52  | 11.28 |
| 28   | Lithuania.....                 | 1.33  | 31.06  | 91   | Luxembourg.....             | 0.51  | 10.91 |
| 29   | Burundi.....                   | 1.31  | 30.67  | 92   | Sri Lanka.....              | 0.42  | 8.91  |
| 30   | Germany.....                   | 1.31  | 30.64  | 93   | Bangladesh.....             | 0.42  | 8.88  |
| 31   | United Kingdom.....            | 1.29  | 30.01  | 94   | Georgia.....                | 0.42  | 8.81  |
| 32   | Oman.....                      | 1.27  | 29.73  | 95   | Madagascar.....             | 0.42  | 8.71  |
| 33   | Zimbabwe.....                  | 1.27  | 29.58  | 96   | Guatemala.....              | 0.41  | 8.68  |
| 34   | Chile.....                     | 1.26  | 29.37  | 97   | Laos.....                   | 0.41  | 8.48  |
| 35   | France.....                    | 1.25  | 29.08  | 98   | Nepal.....                  | 0.40  | 8.33  |
| 36   | Serbia.....                    | 1.22  | 28.33  | 99   | Azerbaijan.....             | 0.38  | 7.80  |
| 37   | Argentina.....                 | 1.21  | 28.08  | 100  | Uganda.....                 | 0.37  | 7.52  |
| 38   | Poland.....                    | 1.18  | 27.55  | 101  | Armenia.....                | 0.36  | 7.42  |
| 39   | Algeria.....                   | 1.17  | 27.18  | 102  | Kazakhstan.....             | 0.35  | 7.03  |
| 40   | Uruguay.....                   | 1.17  | 27.15  | 103  | Mauritius.....              | 0.32  | 6.31  |
| 41   | Nicaragua.....                 | 1.17  | 27.14  | 104  | Philippines.....            | 0.32  | 6.31  |
| 42   | Brazil.....                    | 1.15  | 26.61  | 105  | Gambia.....                 | 0.30  | 5.85  |
| 43   | Mexico.....                    | 1.14  | 26.35  | 106  | Dominican Republic.....     | 0.30  | 5.82  |
| 44   | Malaysia.....                  | 1.13  | 26.19  | 107  | Cameroon.....               | 0.28  | 5.46  |
| 45   | Ghana.....                     | 1.13  | 26.09  | 108  | Pakistan.....               | 0.28  | 5.41  |
| 46   | Latvia.....                    | 1.12  | 26.03  | 109  | El Salvador.....            | 0.28  | 5.33  |
| 47   | Paraguay.....                  | 1.11  | 25.76  | 110  | Kyrgyzstan.....             | 0.26  | 4.82  |
| 48   | Malawi.....                    | 1.10  | 25.40  | 111  | Cambodia.....               | 0.12  | 1.56  |
| 49   | India.....                     | 1.10  | 25.39  | 112  | Rwanda.....                 | 0.06  | 0.00  |
| 50   | Moldova, Rep.....              | 1.09  | 25.18  |      | Bosnia and Herzegovina..... | n/a   | n/a   |
| 51   | Cyprus.....                    | 1.08  | 24.87  |      | China.....                  | n/a   | n/a   |
| 52   | Morocco.....                   | 1.06  | 24.54  |      | Egypt.....                  | n/a   | n/a   |
| 53   | Korea, Rep.....                | 1.05  | 24.29  |      | Greece.....                 | n/a   | n/a   |
| 54   | Slovenia.....                  | 1.05  | 24.16  |      | Kuwait.....                 | n/a   | n/a   |
| 55   | Colombia.....                  | 1.03  | 23.76  |      | Montenegro.....             | n/a   | n/a   |
| 56   | Singapore.....                 | 1.03  | 23.70  |      | Nigeria.....                | n/a   | n/a   |
| 57   | Ireland.....                   | 1.02  | 23.49  |      | Qatar.....                  | n/a   | n/a   |
| 58   | Iran, Islamic Rep.....         | 1.00  | 23.12  |      | Saudi Arabia.....           | n/a   | n/a   |
| 59   | Croatia.....                   | 1.00  | 23.09  |      | Trinidad and Tobago.....    | n/a   | n/a   |
| 60   | Spain.....                     | 0.96  | 22.11  |      | United Arab Emirates.....   | n/a   | n/a   |
| 61   | Portugal.....                  | 0.91  | 20.90  |      | Yemen.....                  | n/a   | n/a   |
| 62   | Mozambique.....                | 0.89  | 20.26  |      | Zambia.....                 | n/a   | n/a   |
| 63   | Honduras.....                  | 0.88  | 20.18  |      |                             |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

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## 3.1.4 Reading, maths, and science

### PISA average scores in reading, mathematics, and science | 2015

| Rank | Country                  | Value  | Score  | Rank | Country                    | Value  | Score |
|------|--------------------------|--------|--------|------|----------------------------|--------|-------|
| 1    | Singapore                | 551.62 | 100.00 | 64   | Lebanon                    | 376.43 | 17.59 |
| 2    | Japan                    | 528.93 | 89.33  | 65   | Tunisia                    | 371.43 | 15.24 |
| 3    | Estonia                  | 524.29 | 87.14  | 66   | Algeria                    | 361.74 | 10.68 |
| 4    | Canada                   | 523.34 | 86.70  | 67   | Dominican Republic         | 339.03 | 0.00  |
| 5    | Finland                  | 522.72 | 86.41  |      | Armenia                    | n/a    | n/a   |
| 6    | Korea, Rep.              | 519.12 | 84.71  |      | Azerbaijan                 | n/a    | n/a   |
| 7    | China                    | 514.34 | 82.46  |      | Bahrain                    | n/a    | n/a   |
| 8    | Slovenia                 | 509.33 | 80.11  |      | Bangladesh                 | n/a    | n/a   |
| 9    | Ireland                  | 509.04 | 79.97  |      | Bhutan                     | n/a    | n/a   |
| 10   | Germany                  | 508.07 | 79.51  |      | Bosnia and Herzegovina     | n/a    | n/a   |
| 11   | Netherlands              | 507.93 | 79.45  |      | Botswana                   | n/a    | n/a   |
| 12   | Switzerland              | 506.32 | 78.69  |      | Brunei Darussalam          | n/a    | n/a   |
| 13   | New Zealand              | 505.93 | 78.51  |      | Burundi                    | n/a    | n/a   |
| 14   | Norway                   | 504.47 | 77.82  |      | Cambodia                   | n/a    | n/a   |
| 15   | Denmark                  | 504.28 | 77.73  |      | Cameroon                   | n/a    | n/a   |
| 16   | Poland                   | 503.87 | 77.54  |      | Congo, Dem. Rep.           | n/a    | n/a   |
| 17   | Belgium                  | 502.50 | 76.89  |      | Ecuador                    | n/a    | n/a   |
| 18   | Australia                | 502.26 | 76.78  |      | Egypt                      | n/a    | n/a   |
| 19   | Viet Nam                 | 501.98 | 76.65  |      | El Salvador                | n/a    | n/a   |
| 20   | United Kingdom           | 499.89 | 75.67  |      | Ethiopia                   | n/a    | n/a   |
| 21   | Portugal                 | 496.95 | 74.28  |      | Gambia                     | n/a    | n/a   |
| 22   | Sweden                   | 495.83 | 73.76  |      | Ghana                      | n/a    | n/a   |
| 23   | France                   | 495.73 | 73.71  |      | Guatemala                  | n/a    | n/a   |
| 24   | Austria                  | 492.22 | 72.06  |      | Honduras                   | n/a    | n/a   |
| 25   | Russian Federation       | 491.77 | 71.85  |      | India                      | n/a    | n/a   |
| 26   | Spain                    | 491.40 | 71.67  |      | Iran, Islamic Rep.         | n/a    | n/a   |
| 27   | Czech Republic           | 490.80 | 71.39  |      | Kenya                      | n/a    | n/a   |
| 28   | United States of America | 487.60 | 69.89  |      | Kuwait                     | n/a    | n/a   |
| 29   | Latvia                   | 486.76 | 69.49  |      | Kyrgyzstan                 | n/a    | n/a   |
| 30   | Italy                    | 485.01 | 68.67  |      | Laos                       | n/a    | n/a   |
| 31   | Luxembourg               | 483.34 | 67.88  |      | Lesotho                    | n/a    | n/a   |
| 32   | Iceland                  | 480.93 | 66.75  |      | Liberia                    | n/a    | n/a   |
| 33   | Croatia                  | 475.43 | 64.16  |      | Madagascar                 | n/a    | n/a   |
| 34   | Lithuania                | 475.40 | 64.15  |      | Malawi                     | n/a    | n/a   |
| 35   | Hungary                  | 474.37 | 63.66  |      | Mali                       | n/a    | n/a   |
| 36   | Israel                   | 471.73 | 62.42  |      | Mauritius                  | n/a    | n/a   |
| 37   | Malta                    | 463.36 | 58.48  |      | Mongolia                   | n/a    | n/a   |
| 38   | Slovakia                 | 462.84 | 58.24  |      | Morocco                    | n/a    | n/a   |
| 39   | Greece                   | 458.50 | 56.20  |      | Mozambique                 | n/a    | n/a   |
| 40   | Kazakhstan               | 447.81 | 51.17  |      | Namibia                    | n/a    | n/a   |
| 41   | Chile                    | 442.73 | 48.78  |      | Nepal                      | n/a    | n/a   |
| 42   | Malaysia                 | 439.88 | 47.44  |      | Nicaragua                  | n/a    | n/a   |
| 43   | Bulgaria                 | 439.56 | 47.29  |      | Nigeria                    | n/a    | n/a   |
| 44   | Cyprus                   | 437.51 | 46.32  |      | Oman                       | n/a    | n/a   |
| 45   | Romania                  | 437.49 | 46.31  |      | Pakistan                   | n/a    | n/a   |
| 46   | United Arab Emirates     | 432.59 | 44.01  |      | Panama                     | n/a    | n/a   |
| 47   | Uruguay                  | 429.98 | 42.78  |      | Paraguay                   | n/a    | n/a   |
| 48   | Turkey                   | 424.76 | 40.33  |      | Philippines                | n/a    | n/a   |
| 49   | Trinidad and Tobago      | 423.04 | 39.52  |      | Rwanda                     | n/a    | n/a   |
| 50   | Argentina                | 422.19 | 39.12  |      | Saudi Arabia               | n/a    | n/a   |
| 51   | Moldova, Rep.            | 421.30 | 38.70  |      | Senegal                    | n/a    | n/a   |
| 52   | Montenegro               | 418.71 | 37.48  |      | Serbia                     | n/a    | n/a   |
| 53   | Costa Rica               | 415.78 | 36.10  |      | South Africa               | n/a    | n/a   |
| 54   | Mexico                   | 415.67 | 36.05  |      | Sri Lanka                  | n/a    | n/a   |
| 55   | Thailand                 | 415.31 | 35.88  |      | Tajikistan                 | n/a    | n/a   |
| 56   | Albania                  | 415.21 | 35.83  |      | Tanzania, United Rep.      | n/a    | n/a   |
| 57   | Colombia                 | 410.09 | 33.43  |      | Uganda                     | n/a    | n/a   |
| 58   | Qatar                    | 407.30 | 32.11  |      | Ukraine                    | n/a    | n/a   |
| 59   | Georgia                  | 405.42 | 31.23  |      | Venezuela, Bolivarian Rep. | n/a    | n/a   |
| 60   | Jordan                   | 399.01 | 28.21  |      | Yemen                      | n/a    | n/a   |
| 61   | Indonesia                | 395.49 | 26.56  |      | Zambia                     | n/a    | n/a   |
| 62   | Brazil                   | 395.03 | 26.34  |      | Zimbabwe                   | n/a    | n/a   |
| 63   | Peru                     | 393.60 | 25.67  |      |                            |        |       |

**SOURCE:** OECD Programme for International Student Assessment (PISA) ([www.oecd.org/pisa](http://www.oecd.org/pisa))

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## 3.1.5 University ranking

### QS World University Ranking | 2019

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | United States of America..... | 99.03 | 100.00 | 64   | Slovakia .....                 | 13.83 | 13.97 |
| 2    | United Kingdom .....          | 95.23 | 96.16  | 65   | Venezuela, Bolivarian Rep..... | 13.73 | 13.87 |
| 3    | China.....                    | 82.47 | 83.27  | 66   | Ecuador .....                  | 13.63 | 13.77 |
| 4    | Switzerland.....              | 81.57 | 82.36  | 67   | Bahrain.....                   | 13.60 | 13.73 |
| 5    | Australia .....               | 80.93 | 81.72  | 68   | Kuwait .....                   | 13.50 | 13.63 |
| 6    | Canada.....                   | 80.17 | 80.95  | 69   | Latvia .....                   | 13.07 | 13.19 |
| 7    | Japan.....                    | 79.17 | 79.94  | 70   | Bangladesh.....                | 11.95 | 12.07 |
| 8    | Korea, Rep.....               | 74.10 | 74.82  | 71   | Romania.....                   | 11.90 | 12.02 |
| 9    | France.....                   | 69.27 | 69.94  | 72   | Azerbaijan.....                | 11.00 | 11.11 |
| 10   | Germany.....                  | 69.13 | 69.81  | 73   | Morocco.....                   | 10.60 | 10.70 |
| 11   | Singapore.....                | 68.93 | 69.61  | 74   | Panama.....                    | 10.30 | 10.40 |
| 12   | Netherlands.....              | 68.07 | 68.73  | 75   | Sri Lanka.....                 | 9.70  | 9.79  |
| 13   | Sweden.....                   | 59.07 | 59.64  | 76   | Serbia.....                    | 8.80  | 8.89  |
| 14   | Denmark.....                  | 57.10 | 57.66  | 77   | Kenya .....                    | 7.40  | 7.47  |
| 15   | Belgium.....                  | 54.20 | 54.73  | 78   | Albania.....                   | 0.00  | 0.00  |
| 16   | Malaysia.....                 | 50.63 | 51.13  | 78   | Algeria.....                   | 0.00  | 0.00  |
| 17   | New Zealand .....             | 50.07 | 50.56  | 78   | Armenia.....                   | 0.00  | 0.00  |
| 18   | Finland.....                  | 48.00 | 48.47  | 78   | Bhutan.....                    | 0.00  | 0.00  |
| 19   | Italy.....                    | 47.60 | 48.06  | 78   | Botswana.....                  | 0.00  | 0.00  |
| 20   | India.....                    | 47.30 | 47.76  | 78   | Burundi.....                   | 0.00  | 0.00  |
| 21   | Ireland.....                  | 47.03 | 47.49  | 78   | Cambodia.....                  | 0.00  | 0.00  |
| 22   | Spain .....                   | 47.00 | 47.46  | 78   | Cameroon.....                  | 0.00  | 0.00  |
| 23   | Russian Federation.....       | 46.73 | 47.19  | 78   | Congo, Dem. Rep.....           | 0.00  | 0.00  |
| 24   | Brazil.....                   | 43.03 | 43.45  | 78   | Cyprus.....                    | 0.00  | 0.00  |
| 25   | Norway.....                   | 42.93 | 43.35  | 78   | Dominican Republic.....        | 0.00  | 0.00  |
| 26   | Israel.....                   | 42.60 | 43.02  | 78   | El Salvador.....               | 0.00  | 0.00  |
| 27   | Austria.....                  | 42.03 | 42.44  | 78   | Ethiopia.....                  | 0.00  | 0.00  |
| 28   | Argentina.....                | 41.93 | 42.34  | 78   | Gambia.....                    | 0.00  | 0.00  |
| 29   | Mexico .....                  | 41.20 | 41.60  | 78   | Georgia.....                   | 0.00  | 0.00  |
| 30   | Saudi Arabia.....             | 40.90 | 41.30  | 78   | Ghana.....                     | 0.00  | 0.00  |
| 31   | Chile.....                    | 39.50 | 39.89  | 78   | Guatemala.....                 | 0.00  | 0.00  |
| 32   | South Africa.....             | 33.60 | 33.93  | 78   | Honduras.....                  | 0.00  | 0.00  |
| 33   | Colombia.....                 | 33.23 | 33.56  | 78   | Iceland .....                  | 0.00  | 0.00  |
| 34   | Qatar.....                    | 32.00 | 32.31  | 78   | Kyrgyzstan.....                | 0.00  | 0.00  |
| 35   | Kazakhstan.....               | 31.67 | 31.98  | 78   | Laos.....                      | 0.00  | 0.00  |
| 36   | Indonesia.....                | 31.27 | 31.57  | 78   | Lesotho.....                   | 0.00  | 0.00  |
| 37   | United Arab Emirates.....     | 31.20 | 31.50  | 78   | Liberia.....                   | 0.00  | 0.00  |
| 38   | Portugal .....                | 30.27 | 30.56  | 78   | Luxembourg.....                | 0.00  | 0.00  |
| 39   | Brunei Darussalam.....        | 29.40 | 29.69  | 78   | Madagascar.....                | 0.00  | 0.00  |
| 40   | Thailand.....                 | 28.03 | 28.31  | 78   | Malawi.....                    | 0.00  | 0.00  |
| 41   | Lebanon.....                  | 27.60 | 27.87  | 78   | Mali.....                      | 0.00  | 0.00  |
| 42   | Pakistan.....                 | 25.73 | 25.98  | 78   | Malta .....                    | 0.00  | 0.00  |
| 43   | Oman.....                     | 25.70 | 25.95  | 78   | Mauritius.....                 | 0.00  | 0.00  |
| 44   | Czech Republic.....           | 25.43 | 25.68  | 78   | Moldova, Rep.....              | 0.00  | 0.00  |
| 44   | Poland.....                   | 25.43 | 25.68  | 78   | Mongolia.....                  | 0.00  | 0.00  |
| 46   | Turkey .....                  | 24.80 | 25.04  | 78   | Montenegro.....                | 0.00  | 0.00  |
| 47   | Iran, Islamic Rep.....        | 23.37 | 23.59  | 78   | Mozambique.....                | 0.00  | 0.00  |
| 48   | Ukraine.....                  | 21.97 | 22.18  | 78   | Namibia.....                   | 0.00  | 0.00  |
| 49   | Greece.....                   | 21.93 | 22.15  | 78   | Nepal.....                     | 0.00  | 0.00  |
| 50   | Egypt.....                    | 21.87 | 22.08  | 78   | Nicaragua.....                 | 0.00  | 0.00  |
| 51   | Estonia .....                 | 21.60 | 21.81  | 78   | Nigeria.....                   | 0.00  | 0.00  |
| 52   | Bosnia and Herzegovina.....   | 20.90 | 21.10  | 78   | Paraguay.....                  | 0.00  | 0.00  |
| 53   | Hungary.....                  | 20.53 | 20.73  | 78   | Rwanda.....                    | 0.00  | 0.00  |
| 54   | Philippines.....              | 19.93 | 20.13  | 78   | Senegal.....                   | 0.00  | 0.00  |
| 55   | Lithuania.....                | 19.80 | 19.99  | 78   | Tajikistan.....                | 0.00  | 0.00  |
| 56   | Uruguay .....                 | 17.95 | 18.13  | 78   | Tanzania, United Rep.....      | 0.00  | 0.00  |
| 57   | Costa Rica.....               | 17.10 | 17.27  | 78   | Trinidad and Tobago.....       | 0.00  | 0.00  |
| 58   | Jordan.....                   | 17.07 | 17.23  | 78   | Tunisia.....                   | 0.00  | 0.00  |
| 59   | Slovenia.....                 | 15.80 | 15.95  | 78   | Uganda.....                    | 0.00  | 0.00  |
| 60   | Viet Nam.....                 | 14.90 | 15.05  | 78   | Yemen.....                     | 0.00  | 0.00  |
| 61   | Peru.....                     | 14.83 | 14.98  | 78   | Zambia.....                    | 0.00  | 0.00  |
| 62   | Bulgaria.....                 | 14.10 | 14.24  | 78   | Zimbabwe.....                  | 0.00  | 0.00  |
| 62   | Croatia.....                  | 14.10 | 14.24  |      |                                |       |       |

**SOURCE:** Quacquarelli Symonds Ltd (QS), QS World University Ranking 2019, Top Universities ([www.topuniversities.com/university-rankings/world-university-rankings](http://www.topuniversities.com/university-rankings/world-university-rankings))  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 3.2.1 Quality of management schools

Average answer to the question: In your country, how do you assess the quality of business schools?  
[1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 6.39  | 100.00 | 64   | Venezuela, Bolivarian Rep..... | 4.21  | 41.57 |
| 2    | United Kingdom.....           | 6.03  | 90.51  | 65   | Korea, Rep.....                | 4.21  | 41.44 |
| 3    | Netherlands.....              | 6.01  | 89.76  | 66   | Poland.....                    | 4.20  | 41.14 |
| 4    | Singapore.....                | 5.96  | 88.42  | 67   | Azerbaijan.....                | 4.17  | 40.39 |
| 5    | Belgium.....                  | 5.88  | 86.32  | 68   | Cyprus.....                    | 4.15  | 39.77 |
| 6    | United States of America..... | 5.85  | 85.60  | 69   | Montenegro.....                | 4.12  | 39.05 |
| 7    | Qatar.....                    | 5.80  | 84.33  | 70   | Madagascar.....                | 4.11  | 38.73 |
| 8    | Canada.....                   | 5.78  | 83.71  | 71   | Albania.....                   | 4.09  | 38.24 |
| 9    | Lebanon.....                  | 5.66  | 80.44  | 72   | Thailand.....                  | 4.08  | 38.05 |
| 10   | France.....                   | 5.61  | 78.98  | 73   | Greece.....                    | 4.08  | 37.87 |
| 11   | Finland.....                  | 5.60  | 78.90  | 74   | Laos.....                      | 4.04  | 36.79 |
| 12   | Spain.....                    | 5.58  | 78.23  | 75   | Lithuania.....                 | 4.03  | 36.68 |
| 13   | Denmark.....                  | 5.56  | 77.77  | 76   | Nepal.....                     | 4.02  | 36.36 |
| 14   | United Arab Emirates.....     | 5.48  | 75.54  | 77   | Tajikistan.....                | 4.02  | 36.28 |
| 15   | Ireland.....                  | 5.44  | 74.66  | 77   | Tunisia.....                   | 4.02  | 36.28 |
| 16   | Australia.....                | 5.43  | 74.31  | 79   | Serbia.....                    | 4.01  | 36.23 |
| 17   | Israel.....                   | 5.41  | 73.77  | 80   | Morocco.....                   | 4.01  | 36.07 |
| 18   | Norway.....                   | 5.39  | 73.26  | 81   | Burundi.....                   | 4.00  | 35.90 |
| 19   | Iceland.....                  | 5.39  | 73.07  | 82   | Ukraine.....                   | 3.99  | 35.61 |
| 20   | Costa Rica.....               | 5.34  | 71.89  | 83   | Panama.....                    | 3.98  | 35.31 |
| 21   | Sweden.....                   | 5.34  | 71.78  | 84   | Peru.....                      | 3.96  | 34.72 |
| 22   | Germany.....                  | 5.32  | 71.30  | 85   | Ecuador.....                   | 3.95  | 34.56 |
| 23   | New Zealand.....              | 5.31  | 71.00  | 86   | Iran, Islamic Rep.....         | 3.89  | 32.92 |
| 24   | Malaysia.....                 | 5.29  | 70.55  | 87   | Croatia.....                   | 3.84  | 31.44 |
| 25   | Italy.....                    | 5.28  | 70.12  | 88   | Nigeria.....                   | 3.83  | 31.34 |
| 26   | Chile.....                    | 5.27  | 69.98  | 89   | Brazil.....                    | 3.83  | 31.20 |
| 27   | Austria.....                  | 5.00  | 62.83  | 90   | Zambia.....                    | 3.82  | 30.96 |
| 28   | Lesotho.....                  | 4.98  | 62.13  | 91   | Dominican Republic.....        | 3.82  | 30.91 |
| 29   | Portugal.....                 | 4.97  | 61.81  | 91   | Mali.....                      | 3.82  | 30.91 |
| 30   | Estonia.....                  | 4.97  | 61.78  | 93   | Zimbabwe.....                  | 3.80  | 30.42 |
| 31   | Malta.....                    | 4.89  | 59.74  | 94   | Kazakhstan.....                | 3.78  | 29.86 |
| 32   | Bahrain.....                  | 4.89  | 59.69  | 95   | Ethiopia.....                  | 3.77  | 29.59 |
| 33   | Trinidad and Tobago.....      | 4.84  | 58.32  | 96   | Pakistan.....                  | 3.77  | 29.56 |
| 34   | Kenya.....                    | 4.76  | 56.19  | 97   | Uganda.....                    | 3.73  | 28.51 |
| 35   | Philippines.....              | 4.76  | 56.14  | 98   | Bangladesh.....                | 3.70  | 27.76 |
| 36   | Argentina.....                | 4.75  | 56.11  | 99   | Slovakia.....                  | 3.68  | 27.17 |
| 37   | Senegal.....                  | 4.75  | 56.03  | 100  | Armenia.....                   | 3.66  | 26.79 |
| 38   | India.....                    | 4.65  | 53.27  | 101  | Congo, Dem. Rep.....           | 3.64  | 26.10 |
| 39   | Indonesia.....                | 4.61  | 52.35  | 102  | Turkey.....                    | 3.63  | 25.93 |
| 40   | Mauritius.....                | 4.57  | 51.12  | 103  | Botswana.....                  | 3.63  | 25.91 |
| 41   | Cameroon.....                 | 4.54  | 50.47  | 104  | Honduras.....                  | 3.62  | 25.64 |
| 42   | South Africa.....             | 4.53  | 49.96  | 105  | Kuwait.....                    | 3.61  | 25.37 |
| 43   | Guatemala.....                | 4.51  | 49.58  | 106  | Algeria.....                   | 3.56  | 23.95 |
| 44   | Ghana.....                    | 4.51  | 49.42  | 107  | Georgia.....                   | 3.55  | 23.81 |
| 44   | Luxembourg.....               | 4.51  | 49.42  | 108  | El Salvador.....               | 3.55  | 23.76 |
| 46   | Sri Lanka.....                | 4.48  | 48.80  | 109  | Namibia.....                   | 3.53  | 23.17 |
| 47   | China.....                    | 4.48  | 48.72  | 110  | Oman.....                      | 3.50  | 22.33 |
| 48   | Latvia.....                   | 4.41  | 46.76  | 111  | Bulgaria.....                  | 3.44  | 20.72 |
| 49   | Saudi Arabia.....             | 4.40  | 46.49  | 112  | Moldova, Rep.....              | 3.35  | 18.27 |
| 50   | Slovenia.....                 | 4.39  | 46.33  | 113  | Tanzania, United Rep.....      | 3.33  | 17.95 |
| 51   | Bhutan.....                   | 4.37  | 45.79  | 114  | Viet Nam.....                  | 3.32  | 17.52 |
| 52   | Rwanda.....                   | 4.37  | 45.74  | 115  | Romania.....                   | 3.27  | 16.23 |
| 53   | Uruguay.....                  | 4.35  | 45.15  | 116  | Bosnia and Herzegovina.....    | 3.25  | 15.78 |
| 54   | Jordan.....                   | 4.34  | 44.96  | 117  | Cambodia.....                  | 3.24  | 15.37 |
| 55   | Japan.....                    | 4.33  | 44.75  | 118  | Egypt.....                     | 3.19  | 14.03 |
| 56   | Gambia.....                   | 4.32  | 44.32  | 119  | Paraguay.....                  | 3.16  | 13.25 |
| 57   | Czech Republic.....           | 4.30  | 43.94  | 120  | Malawi.....                    | 3.11  | 11.93 |
| 58   | Nicaragua.....                | 4.29  | 43.54  | 121  | Liberia.....                   | 3.06  | 10.56 |
| 59   | Colombia.....                 | 4.27  | 43.16  | 122  | Mongolia.....                  | 2.93  | 6.99  |
| 60   | Brunei Darussalam.....        | 4.26  | 42.78  | 123  | Kyrgyzstan.....                | 2.83  | 4.43  |
| 61   | Russian Federation.....       | 4.23  | 41.92  | 124  | Mozambique.....                | 2.78  | 3.12  |
| 62   | Hungary.....                  | 4.22  | 41.82  | 125  | Yemen.....                     | 2.67  | 0.00  |
| 63   | Mexico.....                   | 4.21  | 41.60  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 3.2.2 Prevalence of training in firms

### Proportion of firms offering formal training (%) | 2017

| Rank | Country                        | Value | Score  | Rank | Country                       | Value | Score |
|------|--------------------------------|-------|--------|------|-------------------------------|-------|-------|
| 1    | China.....                     | 79.20 | 100.00 | 64   | Montenegro.....               | 23.70 | 26.78 |
| 2    | Ecuador.....                   | 73.70 | 92.74  | 65   | Dominican Republic.....       | 23.40 | 26.39 |
| 3    | Sweden.....                    | 70.30 | 88.26  | 66   | Liberia.....                  | 22.80 | 25.59 |
| 4    | Peru.....                      | 65.90 | 82.45  | 67   | Ukraine.....                  | 22.60 | 25.33 |
| 5    | Colombia.....                  | 63.00 | 78.63  | 68   | Cambodia.....                 | 22.20 | 24.80 |
| 6    | Kyrgyzstan.....                | 62.70 | 78.23  | 68   | Viet Nam.....                 | 22.20 | 24.80 |
| 7    | Mongolia.....                  | 60.90 | 75.86  | 70   | Mozambique.....               | 22.10 | 24.67 |
| 8    | Philippines.....               | 59.80 | 74.41  | 71   | Bangladesh.....               | 21.90 | 24.41 |
| 9    | Chile.....                     | 57.50 | 71.37  | 72   | Ethiopia.....                 | 20.80 | 22.96 |
| 10   | Nicaragua.....                 | 57.30 | 71.11  | 73   | Azerbaijan.....               | 20.20 | 22.16 |
| 11   | Venezuela, Bolivarian Rep..... | 56.00 | 69.39  | 74   | Israel.....                   | 18.60 | 20.05 |
| 12   | Guatemala.....                 | 55.70 | 69.00  | 75   | Malaysia.....                 | 18.50 | 19.92 |
| 13   | Rwanda.....                    | 55.40 | 68.60  | 76   | Sri Lanka.....                | 18.40 | 19.79 |
| 14   | Czech Republic.....            | 55.10 | 68.21  | 77   | Thailand.....                 | 18.00 | 19.26 |
| 15   | Costa Rica.....                | 54.70 | 67.68  | 78   | Mali.....                     | 17.70 | 18.87 |
| 16   | El Salvador.....               | 53.80 | 66.49  | 79   | Senegal.....                  | 17.40 | 18.47 |
| 17   | Uruguay.....                   | 53.30 | 65.83  | 80   | Congo, Dem. Rep.....          | 17.00 | 17.94 |
| 18   | Bosnia and Herzegovina.....    | 52.40 | 64.64  | 81   | Armenia.....                  | 16.20 | 16.89 |
| 19   | Botswana.....                  | 51.90 | 63.98  | 82   | Hungary.....                  | 15.80 | 16.36 |
| 20   | Mexico.....                    | 50.80 | 62.53  | 83   | Yemen.....                    | 14.30 | 14.38 |
| 21   | Croatia.....                   | 49.30 | 60.55  | 84   | Madagascar.....               | 12.70 | 12.27 |
| 22   | Honduras.....                  | 47.70 | 58.44  | 85   | Panama.....                   | 11.00 | 10.03 |
| 23   | Paraguay.....                  | 46.40 | 56.73  | 86   | Georgia.....                  | 10.50 | 9.37  |
| 24   | Russian Federation.....        | 46.20 | 56.46  | 87   | Egypt.....                    | 10.00 | 8.71  |
| 25   | Slovakia.....                  | 43.50 | 52.90  | 88   | Indonesia.....                | 7.70  | 5.67  |
| 26   | Bulgaria.....                  | 42.70 | 51.85  | 89   | Laos.....                     | 6.50  | 4.09  |
| 27   | Brazil.....                    | 42.20 | 51.19  | 90   | Jordan.....                   | 3.40  | 0.00  |
| 28   | Lithuania.....                 | 42.00 | 50.92  | 88   | Algeria.....                  | 10.50 | 9.37  |
| 29   | Slovenia.....                  | 41.50 | 50.26  | 89   | Australia.....                | 7.70  | 5.67  |
| 30   | Romania.....                   | 40.70 | 49.21  | 90   | Austria.....                  | 6.50  | 4.09  |
| 31   | Kenya.....                     | 40.60 | 49.08  | 91   | Bahrain.....                  | 5.20  | 2.37  |
| 32   | Argentina.....                 | 40.20 | 48.55  | 92   | Belgium.....                  | 3.40  | 0.00  |
| 33   | Ghana.....                     | 40.10 | 48.42  |      | Brunei Darussalam.....        | n/a   | n/a   |
| 34   | Serbia.....                    | 37.80 | 45.38  |      | Canada.....                   | n/a   | n/a   |
| 35   | Cameroon.....                  | 37.60 | 45.12  |      | Cyprus.....                   | n/a   | n/a   |
| 36   | South Africa.....              | 36.80 | 44.06  |      | Denmark.....                  | n/a   | n/a   |
| 37   | India.....                     | 35.90 | 42.88  |      | Finland.....                  | n/a   | n/a   |
| 38   | Estonia.....                   | 35.20 | 41.95  |      | France.....                   | n/a   | n/a   |
| 39   | Uganda.....                    | 34.70 | 41.29  |      | Germany.....                  | n/a   | n/a   |
| 40   | Poland.....                    | 34.60 | 41.16  |      | Greece.....                   | n/a   | n/a   |
| 41   | Tajikistan.....                | 33.10 | 39.18  |      | Iceland.....                  | n/a   | n/a   |
| 42   | Malawi.....                    | 32.90 | 38.92  |      | Iran, Islamic Rep.....        | n/a   | n/a   |
| 43   | Moldova, Rep.....              | 32.40 | 38.26  |      | Ireland.....                  | n/a   | n/a   |
| 44   | Burundi.....                   | 32.00 | 37.73  |      | Italy.....                    | n/a   | n/a   |
| 44   | Pakistan.....                  | 32    | 37.73  |      | Japan.....                    | n/a   | n/a   |
| 46   | Nepal.....                     | 31.90 | 37.60  |      | Korea, Rep.....               | n/a   | n/a   |
| 47   | Lesotho.....                   | 31.20 | 36.68  |      | Kuwait.....                   | n/a   | n/a   |
| 48   | Nigeria.....                   | 30.70 | 36.02  |      | Luxembourg.....               | n/a   | n/a   |
| 48   | Tanzania, United Rep.....      | 30.70 | 36.02  |      | Malta.....                    | n/a   | n/a   |
| 50   | Tunisia.....                   | 28.90 | 33.64  |      | Netherlands.....              | n/a   | n/a   |
| 51   | Turkey.....                    | 28.40 | 32.98  |      | New Zealand.....              | n/a   | n/a   |
| 52   | Kazakhstan.....                | 28.30 | 32.85  |      | Norway.....                   | n/a   | n/a   |
| 53   | Zambia.....                    | 28.20 | 32.72  |      | Oman.....                     | n/a   | n/a   |
| 54   | Trinidad and Tobago.....       | 28.00 | 32.45  |      | Portugal.....                 | n/a   | n/a   |
| 55   | Lebanon.....                   | 26.60 | 30.61  |      | Qatar.....                    | n/a   | n/a   |
| 56   | Zimbabwe.....                  | 26.40 | 30.34  |      | Saudi Arabia.....             | n/a   | n/a   |
| 57   | Morocco.....                   | 26.30 | 30.21  |      | Singapore.....                | n/a   | n/a   |
| 58   | Bhutan.....                    | 26.00 | 29.82  |      | Spain.....                    | n/a   | n/a   |
| 59   | Gambia.....                    | 25.60 | 29.29  |      | Switzerland.....              | n/a   | n/a   |
| 59   | Mauritius.....                 | 25.60 | 29.29  |      | United Arab Emirates.....     | n/a   | n/a   |
| 61   | Namibia.....                   | 25.40 | 29.02  |      | United Kingdom.....           | n/a   | n/a   |
| 62   | Latvia.....                    | 25.20 | 28.76  |      | United States of America..... | n/a   | n/a   |
| 63   | Albania.....                   | 23.80 | 26.91  |      |                               |       |       |

SOURCE: World Bank, Enterprise Surveys ([www.enterprisesurveys.org](http://www.enterprisesurveys.org))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.



## 3.2.3 Employee development

Average answer to the question: In your country, to what extent do companies invest in training and employee development? [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 5.75  | 100.00 | 64   | Kazakhstan.....                | 3.90  | 38.15 |
| 2    | United States of America..... | 5.49  | 91.44  | 65   | Viet Nam.....                  | 3.88  | 37.27 |
| 3    | Norway.....                   | 5.44  | 89.72  | 66   | Albania.....                   | 3.83  | 35.73 |
| 4    | Luxembourg.....               | 5.41  | 88.68  | 67   | Lebanon.....                   | 3.81  | 34.86 |
| 5    | Singapore.....                | 5.39  | 88.11  | 68   | Laos.....                      | 3.80  | 34.75 |
| 6    | Germany.....                  | 5.38  | 87.54  | 69   | Nigeria.....                   | 3.79  | 34.32 |
| 7    | Netherlands.....              | 5.36  | 87.00  | 70   | Gambia.....                    | 3.79  | 34.28 |
| 8    | Sweden.....                   | 5.36  | 86.94  | 71   | Malawi.....                    | 3.78  | 33.92 |
| 9    | Malaysia.....                 | 5.32  | 85.59  | 72   | Russian Federation.....        | 3.77  | 33.55 |
| 10   | Finland.....                  | 5.29  | 84.82  | 73   | Mali.....                      | 3.76  | 33.31 |
| 11   | Denmark.....                  | 5.22  | 82.20  | 74   | Mexico.....                    | 3.76  | 33.18 |
| 12   | Japan.....                    | 5.20  | 81.50  | 75   | Argentina.....                 | 3.75  | 32.84 |
| 13   | Qatar.....                    | 5.17  | 80.49  | 76   | Cameroon.....                  | 3.74  | 32.64 |
| 14   | United Arab Emirates.....     | 5.15  | 80.12  | 77   | Greece.....                    | 3.72  | 31.90 |
| 15   | Belgium.....                  | 5.12  | 79.05  | 78   | Cambodia.....                  | 3.72  | 31.80 |
| 16   | Austria.....                  | 5.10  | 78.34  | 79   | Spain.....                     | 3.71  | 31.60 |
| 17   | Iceland.....                  | 5.06  | 76.86  | 80   | Kuwait.....                    | 3.69  | 30.79 |
| 18   | New Zealand.....              | 4.99  | 74.68  | 81   | Liberia.....                   | 3.67  | 30.36 |
| 19   | Ireland.....                  | 4.95  | 73.14  | 82   | Ukraine.....                   | 3.67  | 30.22 |
| 20   | Australia.....                | 4.94  | 72.83  | 82   | Zimbabwe.....                  | 3.67  | 30.22 |
| 21   | Canada.....                   | 4.87  | 70.48  | 84   | Zambia.....                    | 3.67  | 30.12 |
| 22   | Israel.....                   | 4.82  | 68.74  | 85   | Uruguay.....                   | 3.65  | 29.65 |
| 23   | France.....                   | 4.78  | 67.63  | 86   | Colombia.....                  | 3.64  | 29.31 |
| 24   | United Kingdom.....           | 4.77  | 67.26  | 87   | Pakistan.....                  | 3.64  | 29.21 |
| 25   | Bahrain.....                  | 4.71  | 65.25  | 88   | Uganda.....                    | 3.64  | 29.11 |
| 26   | Czech Republic.....           | 4.65  | 63.30  | 89   | Senegal.....                   | 3.63  | 28.91 |
| 27   | Indonesia.....                | 4.64  | 63.00  | 90   | Armenia.....                   | 3.63  | 28.81 |
| 28   | Estonia.....                  | 4.64  | 62.76  | 91   | Italy.....                     | 3.59  | 27.57 |
| 29   | Lithuania.....                | 4.56  | 60.01  | 92   | Iran, Islamic Rep.....         | 3.59  | 27.54 |
| 30   | Mauritius.....                | 4.54  | 59.37  | 93   | Ethiopia.....                  | 3.57  | 26.90 |
| 31   | India.....                    | 4.51  | 58.46  | 94   | Ecuador.....                   | 3.56  | 26.56 |
| 32   | Malta.....                    | 4.50  | 58.23  | 95   | Venezuela, Bolivarian Rep..... | 3.52  | 25.39 |
| 33   | China.....                    | 4.50  | 58.03  | 96   | Turkey.....                    | 3.52  | 25.18 |
| 34   | Costa Rica.....               | 4.42  | 55.41  | 97   | Hungary.....                   | 3.51  | 24.85 |
| 35   | Philippines.....              | 4.37  | 53.63  | 98   | Madagascar.....                | 3.51  | 24.82 |
| 36   | South Africa.....             | 4.33  | 52.52  | 99   | Peru.....                      | 3.51  | 24.78 |
| 37   | Guatemala.....                | 4.32  | 52.25  | 100  | Tunisia.....                   | 3.50  | 24.68 |
| 38   | Korea, Rep.....               | 4.32  | 52.01  | 101  | Mongolia.....                  | 3.47  | 23.54 |
| 39   | Trinidad and Tobago.....      | 4.29  | 51.11  | 102  | Tanzania, United Rep.....      | 3.46  | 23.07 |
| 40   | Kenya.....                    | 4.26  | 50.00  | 103  | Montenegro.....                | 3.45  | 22.73 |
| 41   | Namibia.....                  | 4.24  | 49.43  | 104  | Dominican Republic.....        | 3.44  | 22.40 |
| 42   | Rwanda.....                   | 4.19  | 47.62  | 105  | Nicaragua.....                 | 3.43  | 22.30 |
| 43   | Thailand.....                 | 4.19  | 47.58  | 106  | El Salvador.....               | 3.42  | 22.03 |
| 44   | Oman.....                     | 4.18  | 47.28  | 107  | Serbia.....                    | 3.42  | 21.89 |
| 45   | Cyprus.....                   | 4.16  | 46.74  | 108  | Paraguay.....                  | 3.38  | 20.48 |
| 46   | Azerbaijan.....               | 4.15  | 46.41  | 109  | Egypt.....                     | 3.36  | 19.78 |
| 47   | Slovenia.....                 | 4.15  | 46.37  | 110  | Morocco.....                   | 3.35  | 19.68 |
| 48   | Chile.....                    | 4.13  | 45.74  | 111  | Bulgaria.....                  | 3.34  | 19.14 |
| 49   | Bhutan.....                   | 4.12  | 45.27  | 112  | Bangladesh.....                | 3.32  | 18.60 |
| 50   | Brunei Darussalam.....        | 4.11  | 45.16  | 113  | Nepal.....                     | 3.32  | 18.47 |
| 51   | Portugal.....                 | 4.11  | 45.10  | 114  | Lesotho.....                   | 3.30  | 17.86 |
| 52   | Jordan.....                   | 4.10  | 44.73  | 115  | Romania.....                   | 3.30  | 17.80 |
| 53   | Sri Lanka.....                | 4.08  | 44.12  | 116  | Burundi.....                   | 3.29  | 17.66 |
| 54   | Honduras.....                 | 4.07  | 43.82  | 117  | Georgia.....                   | 3.28  | 17.33 |
| 55   | Latvia.....                   | 4.07  | 43.62  | 118  | Moldova, Rep.....              | 3.24  | 15.95 |
| 56   | Botswana.....                 | 4.07  | 43.59  | 119  | Kyrgyzstan.....                | 3.22  | 15.31 |
| 57   | Brazil.....                   | 4.03  | 42.51  | 120  | Congo, Dem. Rep.....           | 3.21  | 14.98 |
| 58   | Saudi Arabia.....             | 4.03  | 42.44  | 121  | Algeria.....                   | 3.19  | 14.04 |
| 59   | Tajikistan.....               | 4.03  | 42.24  | 122  | Croatia.....                   | 3.14  | 12.42 |
| 60   | Slovakia.....                 | 4.02  | 41.91  | 123  | Bosnia and Herzegovina.....    | 3.06  | 9.81  |
| 61   | Ghana.....                    | 4.01  | 41.71  | 124  | Mozambique.....                | 3.00  | 7.82  |
| 62   | Panama.....                   | 3.97  | 40.36  | 125  | Yemen.....                     | 2.77  | 0.00  |
| 63   | Poland.....                   | 3.96  | 40.06  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 3.3.1 Delegation of authority

Average answer to the question: In your country, to what extent does senior management delegate authority to subordinates? [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                    | Value | Score  | Rank | Country                | Value | Score |
|------|----------------------------|-------|--------|------|------------------------|-------|-------|
| 1    | Denmark                    | 6.19  | 100.00 | 64   | Ghana                  | 4.33  | 46.03 |
| 2    | Sweden                     | 6.17  | 99.31  | 65   | Uganda                 | 4.33  | 45.92 |
| 3    | Norway                     | 6.07  | 96.41  | 66   | Honduras               | 4.31  | 45.43 |
| 4    | Finland                    | 5.87  | 90.71  | 67   | Kazakhstan             | 4.27  | 44.24 |
| 5    | New Zealand                | 5.82  | 89.32  | 68   | Colombia               | 4.26  | 44.04 |
| 6    | Netherlands                | 5.80  | 88.48  | 69   | Peru                   | 4.25  | 43.86 |
| 7    | Switzerland                | 5.79  | 88.30  | 70   | Portugal               | 4.25  | 43.66 |
| 8    | United States of America   | 5.72  | 86.22  | 71   | Oman                   | 4.24  | 43.40 |
| 9    | Australia                  | 5.69  | 85.44  | 72   | Uruguay                | 4.21  | 42.59 |
| 10   | Canada                     | 5.64  | 84.08  | 73   | Korea, Rep.            | 4.21  | 42.47 |
| 11   | Ireland                    | 5.61  | 83.15  | 74   | Tajikistan             | 4.20  | 42.15 |
| 12   | Belgium                    | 5.55  | 81.41  | 75   | Russian Federation     | 4.18  | 41.57 |
| 13   | Germany                    | 5.55  | 81.30  | 76   | Cyprus                 | 4.16  | 41.20 |
| 14   | Iceland                    | 5.54  | 80.95  | 77   | Liberia                | 4.14  | 40.65 |
| 15   | United Kingdom             | 5.53  | 80.80  | 78   | Poland                 | 4.09  | 38.97 |
| 16   | Luxembourg                 | 5.48  | 79.33  | 79   | Albania                | 4.07  | 38.45 |
| 17   | Singapore                  | 5.46  | 78.81  | 80   | Dominican Republic     | 4.05  | 37.84 |
| 18   | Malaysia                   | 5.39  | 76.64  | 80   | Malawi                 | 4.05  | 37.84 |
| 19   | Austria                    | 5.38  | 76.35  | 82   | Hungary                | 4.02  | 37.15 |
| 20   | United Arab Emirates       | 5.34  | 75.22  | 83   | Ecuador                | 4.00  | 36.57 |
| 21   | Qatar                      | 5.32  | 74.78  | 84   | Serbia                 | 3.99  | 36.13 |
| 22   | Gambia                     | 5.31  | 74.44  | 85   | Jordan                 | 3.98  | 35.93 |
| 23   | Israel                     | 5.24  | 72.35  | 86   | Greece                 | 3.97  | 35.73 |
| 24   | South Africa               | 5.01  | 65.72  | 87   | Tanzania, United Rep.  | 3.97  | 35.67 |
| 25   | Indonesia                  | 4.98  | 64.91  | 87   | Ukraine                | 3.97  | 35.67 |
| 26   | Czech Republic             | 4.98  | 64.77  | 89   | Viet Nam               | 3.97  | 35.64 |
| 27   | Estonia                    | 4.97  | 64.45  | 90   | Turkey                 | 3.95  | 35.06 |
| 28   | Japan                      | 4.86  | 61.32  | 91   | Morocco                | 3.95  | 35.03 |
| 29   | Malta                      | 4.85  | 61.06  | 92   | Lebanon                | 3.92  | 34.28 |
| 30   | Rwanda                     | 4.82  | 60.19  | 93   | Bulgaria               | 3.92  | 34.22 |
| 31   | France                     | 4.79  | 59.35  | 94   | Pakistan               | 3.90  | 33.73 |
| 32   | Kenya                      | 4.78  | 59.21  | 95   | Georgia                | 3.90  | 33.64 |
| 33   | Costa Rica                 | 4.74  | 57.93  | 96   | Armenia                | 3.90  | 33.58 |
| 34   | Lithuania                  | 4.72  | 57.27  | 97   | Burundi                | 3.88  | 32.92 |
| 35   | Bahrain                    | 4.67  | 56.02  | 98   | Moldova, Rep.          | 3.86  | 32.46 |
| 36   | Namibia                    | 4.67  | 55.82  | 99   | Kuwait                 | 3.84  | 31.76 |
| 37   | Nigeria                    | 4.62  | 54.46  | 100  | Madagascar             | 3.82  | 31.38 |
| 38   | Chile                      | 4.59  | 53.68  | 101  | El Salvador            | 3.82  | 31.33 |
| 39   | Mauritius                  | 4.59  | 53.62  | 102  | Montenegro             | 3.80  | 30.80 |
| 40   | Philippines                | 4.59  | 53.56  | 103  | Nepal                  | 3.80  | 30.66 |
| 41   | India                      | 4.55  | 52.40  | 104  | Cambodia               | 3.78  | 30.05 |
| 42   | Panama                     | 4.51  | 51.27  | 105  | Nicaragua              | 3.77  | 29.73 |
| 43   | China                      | 4.51  | 51.22  | 106  | Bangladesh             | 3.75  | 29.30 |
| 44   | Saudi Arabia               | 4.51  | 51.19  | 107  | Croatia                | 3.74  | 28.92 |
| 45   | Brazil                     | 4.5   | 50.96  | 108  | Italy                  | 3.73  | 28.58 |
| 46   | Brunei Darussalam          | 4.50  | 50.93  | 109  | Bosnia and Herzegovina | 3.72  | 28.29 |
| 47   | Bhutan                     | 4.49  | 50.72  | 110  | Egypt                  | 3.70  | 27.74 |
| 48   | Thailand                   | 4.47  | 50.17  | 111  | Cameroon               | 3.64  | 25.94 |
| 49   | Trinidad and Tobago        | 4.47  | 50.14  | 112  | Senegal                | 3.62  | 25.36 |
| 50   | Azerbaijan                 | 4.47  | 49.97  | 113  | Tunisia                | 3.57  | 24.00 |
| 51   | Sri Lanka                  | 4.46  | 49.91  | 114  | Congo, Dem. Rep.       | 3.56  | 23.62 |
| 52   | Zambia                     | 4.46  | 49.88  | 115  | Kyrgyzstan             | 3.53  | 22.96 |
| 53   | Botswana                   | 4.46  | 49.77  | 116  | Paraguay               | 3.53  | 22.84 |
| 54   | Slovakia                   | 4.45  | 49.57  | 117  | Mozambique             | 3.53  | 22.81 |
| 55   | Slovenia                   | 4.44  | 49.13  | 118  | Mali                   | 3.52  | 22.73 |
| 56   | Spain                      | 4.44  | 49.10  | 119  | Iran, Islamic Rep.     | 3.48  | 21.45 |
| 57   | Zimbabwe                   | 4.42  | 48.76  | 120  | Romania                | 3.45  | 20.44 |
| 58   | Guatemala                  | 4.41  | 48.29  | 121  | Ethiopia               | 3.39  | 18.93 |
| 59   | Laos                       | 4.40  | 48.12  | 122  | Lesotho                | 3.27  | 15.32 |
| 60   | Latvia                     | 4.38  | 47.57  | 123  | Algeria                | 3.09  | 10.05 |
| 61   | Argentina                  | 4.35  | 46.76  | 124  | Mongolia               | 3.08  | 9.84  |
| 62   | Venezuela, Bolivarian Rep. | 4.35  | 46.64  | 125  | Yemen                  | 2.74  | 0.00  |
| 63   | Mexico                     | 4.34  | 46.27  |      |                        |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 3.3.2 Personal rights

### Personal rights indicator | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Denmark                  | 97.89 | 100.00 | 64   | Philippines                | 63.31 | 58.18 |
| 2    | Norway                   | 96.32 | 98.10  | 65   | Ukraine                    | 62.99 | 57.79 |
| 3    | Finland                  | 95.77 | 97.44  | 66   | Dominican Republic         | 62.20 | 56.83 |
| 4    | Canada                   | 94.32 | 95.68  | 67   | Montenegro                 | 62.05 | 56.65 |
| 5    | New Zealand              | 94.08 | 95.39  | 68   | Liberia                    | 61.87 | 56.43 |
| 6    | Austria                  | 93.93 | 95.21  | 69   | Bhutan                     | 61.46 | 55.94 |
| 7    | Netherlands              | 93.60 | 94.81  | 70   | Singapore                  | 60.85 | 55.20 |
| 8    | Sweden                   | 93.51 | 94.70  | 71   | Albania                    | 60.53 | 54.81 |
| 9    | Australia                | 93.41 | 94.58  | 72   | Lesotho                    | 60.18 | 54.39 |
| 10   | Ireland                  | 93.09 | 94.19  | 72   | Paraguay                   | 60.18 | 54.39 |
| 11   | Germany                  | 92.75 | 93.78  | 74   | Madagascar                 | 57.64 | 51.32 |
| 12   | Iceland                  | 92.41 | 93.37  | 75   | Nepal                      | 55.76 | 49.04 |
| 12   | Luxembourg               | 92.41 | 93.37  | 76   | Guatemala                  | 54.54 | 47.57 |
| 14   | Estonia                  | 91.92 | 92.78  | 77   | Sri Lanka                  | 53.60 | 46.43 |
| 15   | United Kingdom           | 90.76 | 91.38  | 78   | Nigeria                    | 53.13 | 45.86 |
| 16   | Switzerland              | 90.74 | 91.35  | 79   | Mozambique                 | 53.05 | 45.77 |
| 17   | Chile                    | 89.66 | 90.05  | 80   | Bosnia and Herzegovina     | 52.93 | 45.62 |
| 18   | Uruguay                  | 89.54 | 89.90  | 81   | Kenya                      | 52.59 | 45.21 |
| 19   | Belgium                  | 89.44 | 89.78  | 82   | Mali                       | 52.08 | 44.59 |
| 20   | United States of America | 88.98 | 89.22  | 83   | Tanzania, United Rep.      | 50.86 | 43.12 |
| 21   | Portugal                 | 88.93 | 89.16  | 84   | Lebanon                    | 50.22 | 42.34 |
| 22   | Malta                    | 87.99 | 88.03  | 85   | Honduras                   | 50.00 | 42.08 |
| 23   | Czech Republic           | 86.91 | 86.72  | 86   | Zambia                     | 49.63 | 41.63 |
| 24   | France                   | 86.03 | 85.66  | 87   | Ecuador                    | 49.27 | 41.19 |
| 24   | Lithuania                | 86.03 | 85.66  | 88   | Kyrgyzstan                 | 48.60 | 40.38 |
| 26   | Japan                    | 85.66 | 85.21  | 89   | Pakistan                   | 46.18 | 37.46 |
| 27   | Cyprus                   | 84.95 | 84.35  | 90   | Morocco                    | 45.36 | 36.47 |
| 28   | Spain                    | 84.67 | 84.01  | 91   | Qatar                      | 45.05 | 36.09 |
| 29   | Costa Rica               | 83.06 | 82.06  | 92   | Jordan                     | 44.56 | 35.50 |
| 30   | Mauritius                | 81.72 | 80.44  | 93   | Malaysia                   | 43.57 | 34.30 |
| 31   | Ghana                    | 80.10 | 78.48  | 94   | Armenia                    | 43.06 | 33.68 |
| 32   | Slovenia                 | 79.87 | 78.21  | 95   | Uganda                     | 41.77 | 32.12 |
| 33   | Italy                    | 79.67 | 77.96  | 96   | Nicaragua                  | 40.73 | 30.87 |
| 34   | Poland                   | 79.59 | 77.87  | 97   | Kuwait                     | 40.33 | 30.38 |
| 35   | Latvia                   | 78.48 | 76.52  | 98   | Cameroon                   | 38.25 | 27.87 |
| 35   | Slovakia                 | 78.48 | 76.52  | 99   | Cambodia                   | 37.61 | 27.09 |
| 37   | Israel                   | 77.80 | 75.70  | 100  | Bangladesh                 | 37.53 | 27.00 |
| 38   | Trinidad and Tobago      | 75.40 | 72.80  | 101  | Thailand                   | 37.30 | 26.72 |
| 39   | Senegal                  | 74.75 | 72.01  | 102  | Oman                       | 37.12 | 26.50 |
| 40   | South Africa             | 74.71 | 71.96  | 103  | Algeria                    | 36.21 | 25.40 |
| 41   | Croatia                  | 73.88 | 70.96  | 104  | Turkey                     | 35.69 | 24.77 |
| 42   | Peru                     | 73.86 | 70.94  | 105  | United Arab Emirates       | 31.01 | 19.11 |
| 43   | Greece                   | 72.63 | 69.45  | 106  | Venezuela, Bolivarian Rep. | 30.50 | 18.49 |
| 44   | Korea, Rep.              | 72.43 | 69.21  | 107  | Congo, Dem. Rep.           | 29.96 | 17.84 |
| 45   | India                    | 72.3  | 69.05  | 108  | Burundi                    | 28.49 | 16.06 |
| 46   | Romania                  | 71.83 | 68.48  | 109  | Rwanda                     | 28.38 | 15.93 |
| 47   | Tunisia                  | 71.74 | 68.37  | 110  | Egypt                      | 28.14 | 15.64 |
| 48   | Brazil                   | 71.64 | 68.25  | 111  | Kazakhstan                 | 27.97 | 15.43 |
| 49   | Panama                   | 70.71 | 67.13  | 112  | Bahrain                    | 27.24 | 14.55 |
| 50   | Mongolia                 | 70.18 | 66.49  | 113  | Yemen                      | 26.64 | 13.82 |
| 51   | Serbia                   | 69.43 | 65.58  | 114  | Zimbabwe                   | 26.09 | 13.16 |
| 52   | Botswana                 | 69.06 | 65.13  | 115  | Russian Federation         | 25.42 | 12.35 |
| 53   | Bulgaria                 | 68.17 | 64.05  | 116  | Saudi Arabia               | 25.17 | 12.05 |
| 54   | Malawi                   | 67.99 | 63.84  | 117  | Gambia                     | 24.76 | 11.55 |
| 55   | Argentina                | 67.51 | 63.26  | 118  | Viet Nam                   | 23.71 | 10.28 |
| 56   | Namibia                  | 66.93 | 62.55  | 119  | Ethiopia                   | 20.12 | 5.94  |
| 57   | Mexico                   | 65.87 | 61.27  | 120  | Laos                       | 19.78 | 5.53  |
| 58   | Colombia                 | 65.62 | 60.97  | 121  | Iran, Islamic Rep.         | 18.62 | 4.12  |
| 59   | Georgia                  | 64.85 | 60.04  | 122  | Azerbaijan                 | 18.40 | 3.86  |
| 60   | Moldova, Rep.            | 64.77 | 59.94  | 123  | Tajikistan                 | 16.35 | 1.38  |
| 61   | Indonesia                | 64.54 | 59.66  | 124  | China                      | 15.21 | 0.00  |
| 62   | El Salvador              | 64.26 | 59.33  |      | Brunei Darussalam          | n/a   | n/a   |
| 63   | Hungary                  | 63.72 | 58.67  |      |                            |       |       |

**SOURCE:** Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

### 3.3.3 Use of virtual social networks

Average answer to the question: In your country, how widely are virtual social networks used (e.g., Facebook, Twitter, LinkedIn)? [1 = not at all used; 7 = used extensively] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Norway.....                   | 6.65  | 100.00 | 64   | Mongolia.....                  | 5.63  | 70.70 |
| 2    | Netherlands.....              | 6.59  | 98.27  | 65   | Cambodia.....                  | 5.63  | 70.53 |
| 3    | Iceland.....                  | 6.58  | 97.98  | 65   | Dominican Republic.....        | 5.63  | 70.53 |
| 4    | Israel.....                   | 6.53  | 96.54  | 67   | Bulgaria.....                  | 5.63  | 70.44 |
| 5    | Sweden.....                   | 6.52  | 96.31  | 68   | Venezuela, Bolivarian Rep..... | 5.61  | 69.92 |
| 6    | United Kingdom.....           | 6.50  | 95.51  | 69   | Poland.....                    | 5.60  | 69.84 |
| 7    | Singapore.....                | 6.43  | 93.60  | 70   | Honduras.....                  | 5.59  | 69.35 |
| 8    | United Arab Emirates.....     | 6.38  | 92.31  | 70   | Serbia.....                    | 5.59  | 69.35 |
| 8    | United States of America..... | 6.38  | 92.31  | 72   | Lebanon.....                   | 5.58  | 69.26 |
| 10   | Finland.....                  | 6.32  | 90.41  | 73   | Bosnia and Herzegovina.....    | 5.56  | 68.48 |
| 11   | Canada.....                   | 6.32  | 90.32  | 74   | Mexico.....                    | 5.53  | 67.82 |
| 12   | Denmark.....                  | 6.27  | 88.88  | 75   | Armenia.....                   | 5.53  | 67.70 |
| 13   | Thailand.....                 | 6.25  | 88.45  | 76   | Morocco.....                   | 5.53  | 67.62 |
| 14   | Malta.....                    | 6.24  | 88.13  | 77   | Slovakia.....                  | 5.52  | 67.47 |
| 15   | Ireland.....                  | 6.23  | 87.81  | 78   | Moldova, Rep.....              | 5.49  | 66.55 |
| 16   | Bahrain.....                  | 6.21  | 87.38  | 79   | Nigeria.....                   | 5.49  | 66.52 |
| 17   | Luxembourg.....               | 6.20  | 86.95  | 80   | Oman.....                      | 5.47  | 66.06 |
| 18   | Lithuania.....                | 6.18  | 86.49  | 81   | Colombia.....                  | 5.44  | 65.00 |
| 19   | Belgium.....                  | 6.18  | 86.32  | 82   | Senegal.....                   | 5.43  | 64.85 |
| 20   | Costa Rica.....               | 6.17  | 86.20  | 83   | Viet Nam.....                  | 5.43  | 64.77 |
| 21   | Philippines.....              | 6.16  | 85.88  | 84   | Ecuador.....                   | 5.42  | 64.42 |
| 22   | Czech Republic.....           | 6.15  | 85.62  | 85   | Russian Federation.....        | 5.38  | 63.41 |
| 23   | Malaysia.....                 | 6.14  | 85.34  | 86   | Croatia.....                   | 5.37  | 63.07 |
| 24   | Azerbaijan.....               | 6.14  | 85.22  | 87   | El Salvador.....               | 5.35  | 62.55 |
| 25   | Estonia.....                  | 6.13  | 85.02  | 88   | Ukraine.....                   | 5.35  | 62.49 |
| 26   | Qatar.....                    | 6.11  | 84.53  | 89   | Cyprus.....                    | 5.30  | 61.02 |
| 27   | Jordan.....                   | 6.10  | 84.01  | 90   | Algeria.....                   | 5.25  | 59.64 |
| 28   | Australia.....                | 6.08  | 83.46  | 91   | Sri Lanka.....                 | 5.25  | 59.61 |
| 29   | Chile.....                    | 6.05  | 82.77  | 92   | Ghana.....                     | 5.23  | 59.12 |
| 30   | New Zealand.....              | 6.05  | 82.60  | 93   | Rwanda.....                    | 5.16  | 57.16 |
| 31   | Panama.....                   | 6.04  | 82.28  | 94   | Botswana.....                  | 5.16  | 57.02 |
| 32   | Brunei Darussalam.....        | 6.02  | 81.71  | 95   | Peru.....                      | 5.15  | 56.73 |
| 33   | Saudi Arabia.....             | 6.02  | 81.68  | 96   | Paraguay.....                  | 5.15  | 56.70 |
| 34   | Brazil.....                   | 6.01  | 81.56  | 97   | Zambia.....                    | 5.15  | 56.64 |
| 35   | Kuwait.....                   | 6.00  | 81.22  | 98   | Kazakhstan.....                | 5.14  | 56.38 |
| 36   | Korea, Rep.....               | 5.99  | 81.01  | 99   | Bhutan.....                    | 5.14  | 56.32 |
| 37   | Japan.....                    | 5.99  | 80.90  | 100  | Greece.....                    | 5.11  | 55.66 |
| 38   | Italy.....                    | 5.98  | 80.70  | 101  | Madagascar.....                | 5.08  | 54.74 |
| 39   | Kenya.....                    | 5.94  | 79.40  | 102  | Cameroon.....                  | 5.04  | 53.59 |
| 40   | South Africa.....             | 5.92  | 79.03  | 103  | Nicaragua.....                 | 5.02  | 53.10 |
| 41   | Switzerland.....              | 5.92  | 78.97  | 104  | Hungary.....                   | 4.99  | 52.09 |
| 42   | Guatemala.....                | 5.92  | 78.91  | 105  | Zimbabwe.....                  | 4.98  | 51.97 |
| 43   | Montenegro.....               | 5.91  | 78.57  | 106  | Laos.....                      | 4.96  | 51.22 |
| 44   | France.....                   | 5.89  | 78.16  | 107  | Uganda.....                    | 4.93  | 50.53 |
| 45   | Egypt.....                    | 5.89  | 77.99  | 108  | Nepal.....                     | 4.90  | 49.50 |
| 46   | Slovenia.....                 | 5.84  | 76.69  | 109  | India.....                     | 4.86  | 48.52 |
| 47   | Uruguay.....                  | 5.84  | 76.52  | 110  | Tanzania, United Rep.....      | 4.81  | 46.93 |
| 48   | Portugal.....                 | 5.81  | 75.80  | 111  | Bangladesh.....                | 4.79  | 46.33 |
| 49   | Turkey.....                   | 5.80  | 75.42  | 112  | Iran, Islamic Rep.....         | 4.71  | 43.94 |
| 50   | Tunisia.....                  | 5.80  | 75.40  | 113  | Mozambique.....                | 4.69  | 43.39 |
| 51   | Spain.....                    | 5.80  | 75.37  | 114  | Yemen.....                     | 4.68  | 43.16 |
| 52   | Indonesia.....                | 5.79  | 75.14  | 115  | China.....                     | 4.60  | 40.97 |
| 53   | Mauritius.....                | 5.78  | 75.02  | 116  | Pakistan.....                  | 4.48  | 37.57 |
| 54   | Georgia.....                  | 5.78  | 74.99  | 117  | Liberia.....                   | 4.47  | 37.25 |
| 55   | Albania.....                  | 5.75  | 74.01  | 118  | Congo, Dem. Rep.....           | 4.36  | 33.94 |
| 56   | Germany.....                  | 5.74  | 73.75  | 119  | Mali.....                      | 4.30  | 32.35 |
| 57   | Gambia.....                   | 5.74  | 73.67  | 120  | Tajikistan.....                | 4.25  | 30.77 |
| 58   | Romania.....                  | 5.70  | 72.69  | 121  | Kyrgyzstan.....                | 4.24  | 30.65 |
| 59   | Trinidad and Tobago.....      | 5.69  | 72.28  | 122  | Malawi.....                    | 4.19  | 29.18 |
| 60   | Latvia.....                   | 5.68  | 72.08  | 123  | Ethiopia.....                  | 3.80  | 17.83 |
| 61   | Austria.....                  | 5.66  | 71.54  | 124  | Burundi.....                   | 3.65  | 13.66 |
| 62   | Namibia.....                  | 5.64  | 70.93  | 125  | Lesotho.....                   | 3.18  | 0.00  |
| 63   | Argentina.....                | 5.64  | 70.84  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 3.3.4 Use of virtual professional networks

### LinkedIn users (per 1,000 labour force) | 2016

| Rank | Country                        | Value  | Score  | Rank | Country                     | Value  | Score |
|------|--------------------------------|--------|--------|------|-----------------------------|--------|-------|
| 1    | United States of America.....  | 693.18 | 100.00 | 64   | Albania.....                | 107.81 | 15.02 |
| 2    | Iceland.....                   | 642.66 | 92.67  | 65   | Serbia.....                 | 99.39  | 13.80 |
| 3    | Netherlands.....               | 610.45 | 87.99  | 66   | Germany.....                | 95.47  | 13.23 |
| 4    | Denmark.....                   | 594.96 | 85.74  | 67   | Dominican Republic.....     | 91.98  | 12.73 |
| 5    | Malta.....                     | 568.69 | 81.93  | 68   | El Salvador.....            | 89.06  | 12.30 |
| 6    | Ireland.....                   | 560.75 | 80.78  | 69   | Poland.....                 | 83.13  | 11.44 |
| 7    | Canada.....                    | 553.15 | 79.67  | 70   | Bosnia and Herzegovina..... | 75.22  | 10.29 |
| 8    | Luxembourg.....                | 532.06 | 76.61  | 71   | Morocco.....                | 73.55  | 10.05 |
| 9    | Australia.....                 | 530.70 | 76.41  | 72   | Bhutan.....                 | 68.95  | 9.38  |
| 10   | United Kingdom.....            | 529.16 | 76.19  | 73   | Nicaragua.....              | 68.73  | 9.35  |
| 11   | New Zealand.....               | 521.20 | 75.03  | 74   | Guatemala.....              | 68.63  | 9.34  |
| 12   | Singapore.....                 | 472.48 | 67.96  | 75   | Georgia.....                | 64.20  | 8.69  |
| 13   | Norway.....                    | 461.27 | 66.33  | 76   | Russian Federation.....     | 61.90  | 8.36  |
| 14   | Belgium.....                   | 459.02 | 66.01  | 77   | Philippines.....            | 59.95  | 8.08  |
| 15   | Sweden.....                    | 421.78 | 60.60  | 78   | Sri Lanka.....              | 59.83  | 8.06  |
| 16   | Portugal.....                  | 353.67 | 50.71  | 79   | Paraguay.....               | 59.09  | 7.95  |
| 17   | Trinidad and Tobago.....       | 329.61 | 47.22  | 80   | Honduras.....               | 59.04  | 7.94  |
| 18   | Chile.....                     | 329.40 | 47.19  | 81   | Armenia.....                | 58.29  | 7.84  |
| 19   | Israel.....                    | 328.19 | 47.02  | 82   | Ukraine.....                | 57.65  | 7.74  |
| 20   | Switzerland.....               | 325.83 | 46.67  | 83   | India.....                  | 57.22  | 7.68  |
| 21   | United Arab Emirates.....      | 311.24 | 44.56  | 84   | Kenya.....                  | 56.10  | 7.52  |
| 22   | France.....                    | 307.29 | 43.98  | 85   | Algeria.....                | 52.63  | 7.01  |
| 23   | Italy.....                     | 301.16 | 43.09  | 86   | Mongolia.....               | 51.85  | 6.90  |
| 24   | Spain.....                     | 290.48 | 41.54  | 87   | Ghana.....                  | 50.07  | 6.64  |
| 25   | Cyprus.....                    | 259.67 | 37.07  | 88   | Egypt.....                  | 49.35  | 6.54  |
| 26   | Finland.....                   | 256.77 | 36.65  | 89   | Kazakhstan.....             | 45.81  | 6.02  |
| 27   | Uruguay.....                   | 239.88 | 34.20  | 90   | Senegal.....                | 37.68  | 4.84  |
| 28   | Qatar.....                     | 230.78 | 32.88  | 91   | Pakistan.....               | 35.04  | 4.46  |
| 29   | Argentina.....                 | 216.56 | 30.81  | 92   | Zimbabwe.....               | 35.02  | 4.46  |
| 30   | Bahrain.....                   | 215.28 | 30.63  | 93   | Gambia.....                 | 34.25  | 4.35  |
| 31   | Costa Rica.....                | 215.02 | 30.59  | 94   | Indonesia.....              | 32.02  | 4.02  |
| 32   | Mauritius.....                 | 208.28 | 29.61  | 95   | Nigeria.....                | 31.53  | 3.95  |
| 33   | Slovenia.....                  | 198.42 | 28.18  | 96   | Azerbaijan.....             | 28.56  | 3.52  |
| 34   | Brazil.....                    | 189.47 | 26.88  | 97   | Cameroon.....               | 28.55  | 3.52  |
| 35   | Croatia.....                   | 188.98 | 26.81  | 98   | Lesotho.....                | 28.46  | 3.51  |
| 36   | South Africa.....              | 187.34 | 26.57  | 99   | Zambia.....                 | 27.81  | 3.41  |
| 37   | Lebanon.....                   | 186.09 | 26.39  | 100  | Thailand.....               | 24.80  | 2.97  |
| 38   | Latvia.....                    | 184.67 | 26.18  | 101  | Liberia.....                | 24.33  | 2.91  |
| 39   | Estonia.....                   | 184.08 | 26.10  | 102  | Uganda.....                 | 21.64  | 2.52  |
| 40   | Panama.....                    | 180.82 | 25.62  | 103  | Japan.....                  | 20.91  | 2.41  |
| 41   | Greece.....                    | 180.18 | 25.53  | 104  | Cambodia.....               | 17.96  | 1.98  |
| 42   | Brunei Darussalam.....         | 173.23 | 24.52  | 105  | Nepal.....                  | 17.50  | 1.91  |
| 43   | Colombia.....                  | 171.63 | 24.29  | 106  | Kyrgyzstan.....             | 17.23  | 1.88  |
| 44   | Jordan.....                    | 167.37 | 23.67  | 107  | Viet Nam.....               | 16.03  | 1.70  |
| 45   | Kuwait.....                    | 161.09 | 22.76  | 108  | Rwanda.....                 | 15.48  | 1.62  |
| 46   | Czech Republic.....            | 155.29 | 21.92  | 109  | Peru.....                   | 14.78  | 1.52  |
| 47   | Malaysia.....                  | 149.17 | 21.03  | 110  | Mali.....                   | 13.05  | 1.27  |
| 48   | Romania.....                   | 147.51 | 20.79  | 111  | Mozambique.....             | 11.95  | 1.11  |
| 49   | Ecuador.....                   | 144.61 | 20.37  | 112  | Yemen.....                  | 11.20  | 1.00  |
| 50   | Lithuania.....                 | 139.38 | 19.61  | 113  | Malawi.....                 | 10.81  | 0.94  |
| 51   | Austria.....                   | 137.01 | 19.26  | 114  | Bangladesh.....             | 10.40  | 0.88  |
| 52   | Montenegro.....                | 134.99 | 18.97  | 115  | China.....                  | 9.05   | 0.69  |
| 53   | Turkey.....                    | 133.88 | 18.81  | 116  | Madagascar.....             | 6.56   | 0.33  |
| 54   | Venezuela, Bolivarian Rep..... | 132.67 | 18.63  | 117  | Tajikistan.....             | 5.51   | 0.17  |
| 55   | Mexico.....                    | 128.64 | 18.05  | 118  | Burundi.....                | 5.31   | 0.15  |
| 56   | Bulgaria.....                  | 127.62 | 17.90  | 119  | Congo, Dem. Rep.....        | 4.54   | 0.03  |
| 57   | Saudi Arabia.....              | 127.40 | 17.87  | 120  | Ethiopia.....               | 4.31   | 0.00  |
| 58   | Botswana.....                  | 122.14 | 17.10  |      | Iran, Islamic Rep.....      | n/a    | n/a   |
| 59   | Oman.....                      | 120.71 | 16.90  |      | Korea, Rep.....             | n/a    | n/a   |
| 60   | Hungary.....                   | 119.99 | 16.79  |      | Laos.....                   | n/a    | n/a   |
| 61   | Namibia.....                   | 117.25 | 16.39  |      | Moldova, Rep.....           | n/a    | n/a   |
| 62   | Tunisia.....                   | 110.90 | 15.47  |      | Tanzania, United Rep.....   | n/a    | n/a   |
| 63   | Slovakia.....                  | 109.86 | 15.32  |      |                             |        |       |

**SOURCE:** LinkedIn, LinkedIn Campaign Manager and International Labour Organization, *Key Indicators of the Labour Market*, 8th edition (<http://key-indicators-of-the-labour-market-8th.software.informer.com/download>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

### 3.3.5 Collaboration within organisations

Average answer to the question: In your country, to what extent do people collaborate and share ideas within a company? [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 5.76  | 100.00 | 64   | Lebanon.....                   | 4.01  | 35.58 |
| 2    | Sweden.....                   | 5.70  | 97.83  | 65   | Gambia.....                    | 4.00  | 35.32 |
| 3    | United States of America..... | 5.66  | 96.21  | 66   | Congo, Dem. Rep.....           | 4.00  | 35.10 |
| 4    | Norway.....                   | 5.64  | 95.41  | 67   | Montenegro.....                | 3.99  | 35.06 |
| 5    | Germany.....                  | 5.57  | 92.80  | 68   | Brazil.....                    | 3.93  | 32.60 |
| 6    | Netherlands.....              | 5.48  | 89.75  | 69   | Morocco.....                   | 3.92  | 32.49 |
| 7    | Israel.....                   | 5.47  | 89.45  | 70   | Botswana.....                  | 3.92  | 32.41 |
| 8    | Finland.....                  | 5.43  | 87.95  | 71   | Liberia.....                   | 3.92  | 32.16 |
| 9    | Iceland.....                  | 5.37  | 85.74  | 72   | Madagascar.....                | 3.90  | 31.64 |
| 10   | Malaysia.....                 | 5.34  | 84.49  | 73   | Ghana.....                     | 3.90  | 31.46 |
| 11   | Denmark.....                  | 5.33  | 84.27  | 74   | Slovakia.....                  | 3.89  | 31.31 |
| 12   | New Zealand.....              | 5.27  | 81.88  | 75   | Namibia.....                   | 3.89  | 31.20 |
| 13   | Austria.....                  | 5.21  | 79.75  | 76   | Burundi.....                   | 3.88  | 31.02 |
| 14   | Qatar.....                    | 5.19  | 79.02  | 77   | Sri Lanka.....                 | 3.88  | 30.69 |
| 15   | Belgium.....                  | 5.17  | 78.32  | 78   | Mali.....                      | 3.87  | 30.58 |
| 16   | Singapore.....                | 5.14  | 76.99  | 79   | Cyprus.....                    | 3.87  | 30.50 |
| 17   | Luxembourg.....               | 5.12  | 76.33  | 80   | Turkey.....                    | 3.86  | 30.10 |
| 18   | Japan.....                    | 5.09  | 75.16  | 81   | Pakistan.....                  | 3.85  | 29.77 |
| 19   | United Arab Emirates.....     | 5.08  | 75.01  | 82   | Honduras.....                  | 3.82  | 28.78 |
| 20   | United Kingdom.....           | 5.02  | 72.66  | 83   | Mexico.....                    | 3.82  | 28.63 |
| 21   | Ireland.....                  | 4.99  | 71.81  | 84   | Bulgaria.....                  | 3.80  | 27.89 |
| 22   | Canada.....                   | 4.91  | 68.76  | 85   | Italy.....                     | 3.78  | 27.34 |
| 23   | Australia.....                | 4.90  | 68.50  | 86   | Venezuela, Bolivarian Rep..... | 3.78  | 27.23 |
| 24   | Indonesia.....                | 4.76  | 63.36  | 87   | Tanzania, United Rep.....      | 3.78  | 27.20 |
| 25   | Estonia.....                  | 4.62  | 58.18  | 88   | Colombia.....                  | 3.77  | 26.83 |
| 26   | Azerbaijan.....               | 4.61  | 57.81  | 89   | Zambia.....                    | 3.77  | 26.64 |
| 27   | France.....                   | 4.58  | 56.63  | 90   | Chile.....                     | 3.75  | 26.24 |
| 28   | Bahrain.....                  | 4.55  | 55.60  | 91   | Peru.....                      | 3.74  | 25.76 |
| 29   | India.....                    | 4.53  | 54.58  | 92   | Kyrgyzstan.....                | 3.73  | 25.36 |
| 30   | China.....                    | 4.51  | 54.06  | 93   | Greece.....                    | 3.73  | 25.32 |
| 31   | Kenya.....                    | 4.47  | 52.66  | 93   | Uruguay.....                   | 3.73  | 25.32 |
| 32   | Czech Republic.....           | 4.45  | 51.67  | 95   | Serbia.....                    | 3.72  | 25.06 |
| 32   | Rwanda.....                   | 4.45  | 51.67  | 96   | Moldova, Rep.....              | 3.72  | 24.99 |
| 34   | Lithuania.....                | 4.44  | 51.49  | 97   | Brunei Darussalam.....         | 3.71  | 24.66 |
| 35   | Philippines.....              | 4.43  | 51.19  | 98   | Argentina.....                 | 3.70  | 24.29 |
| 36   | Korea, Rep.....               | 4.38  | 49.17  | 99   | Ethiopia.....                  | 3.63  | 21.68 |
| 37   | Tajikistan.....               | 4.36  | 48.66  | 100  | Kuwait.....                    | 3.62  | 21.24 |
| 38   | South Africa.....             | 4.35  | 47.96  | 101  | Latvia.....                    | 3.61  | 21.10 |
| 39   | Malta.....                    | 4.28  | 45.42  | 102  | Zimbabwe.....                  | 3.59  | 20.18 |
| 40   | Laos.....                     | 4.24  | 44.10  | 103  | Viet Nam.....                  | 3.58  | 19.85 |
| 41   | Slovenia.....                 | 4.21  | 43.00  | 104  | Tunisia.....                   | 3.58  | 19.81 |
| 42   | Guatemala.....                | 4.21  | 42.85  | 105  | Romania.....                   | 3.58  | 19.77 |
| 43   | Mauritius.....                | 4.20  | 42.78  | 106  | Nepal.....                     | 3.56  | 19.07 |
| 44   | Nigeria.....                  | 4.18  | 41.75  | 107  | Spain.....                     | 3.55  | 18.85 |
| 45   | Cameroon.....                 | 4.18  | 41.71  | 108  | Bosnia and Herzegovina.....    | 3.53  | 18.04 |
| 46   | Albania.....                  | 4.16  | 41.20  | 109  | Ecuador.....                   | 3.53  | 18.01 |
| 47   | Costa Rica.....               | 4.16  | 41.16  | 110  | Egypt.....                     | 3.51  | 17.09 |
| 48   | Senegal.....                  | 4.15  | 40.79  | 111  | Dominican Republic.....        | 3.50  | 16.87 |
| 49   | Thailand.....                 | 4.14  | 40.39  | 112  | Croatia.....                   | 3.50  | 16.72 |
| 50   | Uganda.....                   | 4.14  | 40.35  | 113  | Iran, Islamic Rep.....         | 3.49  | 16.54 |
| 51   | Ukraine.....                  | 4.14  | 40.24  | 114  | Nicaragua.....                 | 3.44  | 14.85 |
| 52   | Mongolia.....                 | 4.12  | 39.80  | 115  | Paraguay.....                  | 3.44  | 14.70 |
| 53   | Oman.....                     | 4.10  | 38.81  | 116  | Mozambique.....                | 3.42  | 13.82 |
| 54   | Russian Federation.....       | 4.09  | 38.70  | 117  | Bangladesh.....                | 3.42  | 13.78 |
| 55   | Cambodia.....                 | 4.08  | 38.26  | 118  | Trinidad and Tobago.....       | 3.39  | 12.83 |
| 56   | Armenia.....                  | 4.08  | 38.07  | 119  | Hungary.....                   | 3.35  | 11.28 |
| 57   | Bhutan.....                   | 4.07  | 37.93  | 120  | Poland.....                    | 3.33  | 10.77 |
| 58   | Jordan.....                   | 4.07  | 37.89  | 121  | Algeria.....                   | 3.31  | 10.07 |
| 59   | Panama.....                   | 4.07  | 37.82  | 122  | Malawi.....                    | 3.29  | 9.26  |
| 60   | Saudi Arabia.....             | 4.06  | 37.34  | 123  | El Salvador.....               | 3.25  | 7.72  |
| 61   | Kazakhstan.....               | 4.04  | 36.57  | 124  | Lesotho.....                   | 3.11  | 2.72  |
| 62   | Georgia.....                  | 4.02  | 36.05  | 125  | Yemen.....                     | 3.04  | 0.00  |
| 63   | Portugal.....                 | 4.01  | 35.76  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 3.3.6 Collaboration across organisations

Average answer to the question: In your country, to what extent do companies collaborate in sharing ideas and innovating? [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                        | Value | Score  | Rank | Country                     | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1    | United States of America.....  | 5.35  | 100.00 | 64   | Bulgaria.....               | 3.42  | 32.18 |
| 2    | Germany.....                   | 5.18  | 94.33  | 65   | Argentina.....              | 3.41  | 31.94 |
| 3    | Malaysia.....                  | 5.17  | 93.94  | 66   | Sri Lanka.....              | 3.41  | 31.69 |
| 4    | Finland.....                   | 5.06  | 89.93  | 67   | Slovenia.....               | 3.39  | 31.16 |
| 5    | Netherlands.....               | 4.93  | 85.35  | 68   | Brazil.....                 | 3.38  | 30.95 |
| 6    | Switzerland.....               | 4.91  | 84.68  | 69   | Italy.....                  | 3.38  | 30.92 |
| 7    | Israel.....                    | 4.89  | 83.87  | 70   | Mali.....                   | 3.38  | 30.77 |
| 8    | Sweden.....                    | 4.84  | 82.04  | 71   | Cambodia.....               | 3.36  | 30.04 |
| 9    | Qatar.....                     | 4.80  | 80.67  | 72   | Mauritius.....              | 3.35  | 29.65 |
| 10   | United Arab Emirates.....      | 4.75  | 79.12  | 73   | Spain.....                  | 3.30  | 28.06 |
| 11   | United Kingdom.....            | 4.67  | 76.23  | 74   | Viet Nam.....               | 3.30  | 27.99 |
| 12   | Singapore.....                 | 4.52  | 70.81  | 75   | Montenegro.....             | 3.28  | 27.32 |
| 13   | Norway.....                    | 4.51  | 70.42  | 76   | Senegal.....                | 3.28  | 27.15 |
| 14   | New Zealand.....               | 4.50  | 70.11  | 77   | Namibia.....                | 3.27  | 27.01 |
| 15   | Indonesia.....                 | 4.47  | 69.19  | 78   | Armenia.....                | 3.27  | 26.90 |
| 16   | Luxembourg.....                | 4.46  | 68.70  | 79   | Zambia.....                 | 3.26  | 26.55 |
| 17   | Iceland.....                   | 4.42  | 67.36  | 80   | Brunei Darussalam.....      | 3.25  | 26.30 |
| 18   | China.....                     | 4.40  | 66.87  | 81   | Botswana.....               | 3.24  | 25.77 |
| 19   | Azerbaijan.....                | 4.37  | 65.49  | 82   | Lebanon.....                | 3.22  | 25.14 |
| 20   | Ireland.....                   | 4.30  | 63.17  | 83   | Peru.....                   | 3.21  | 24.93 |
| 21   | Belgium.....                   | 4.28  | 62.43  | 84   | Uruguay.....                | 3.21  | 24.89 |
| 22   | India.....                     | 4.23  | 60.70  | 85   | Kuwait.....                 | 3.20  | 24.58 |
| 23   | Austria.....                   | 4.19  | 59.44  | 86   | Uganda.....                 | 3.19  | 24.26 |
| 24   | Denmark.....                   | 4.14  | 57.57  | 87   | Lesotho.....                | 3.18  | 23.73 |
| 25   | Japan.....                     | 4.10  | 56.09  | 88   | Liberia.....                | 3.15  | 22.64 |
| 26   | Canada.....                    | 4.08  | 55.49  | 88   | Turkey.....                 | 3.15  | 22.64 |
| 27   | Korea, Rep.....                | 4.04  | 54.15  | 90   | Madagascar.....             | 3.13  | 21.97 |
| 28   | Kenya.....                     | 3.90  | 49.15  | 91   | Cyprus.....                 | 3.11  | 21.37 |
| 29   | Tajikistan.....                | 3.82  | 46.37  | 92   | Gambia.....                 | 3.10  | 20.92 |
| 30   | Rwanda.....                    | 3.81  | 46.02  | 93   | Dominican Republic.....     | 3.10  | 20.88 |
| 30   | Saudi Arabia.....              | 3.81  | 46.02  | 94   | El Salvador.....            | 3.07  | 19.93 |
| 32   | Laos.....                      | 3.79  | 45.21  | 95   | Serbia.....                 | 3.07  | 19.89 |
| 33   | South Africa.....              | 3.77  | 44.65  | 96   | Honduras.....               | 3.04  | 18.80 |
| 34   | France.....                    | 3.76  | 44.33  | 97   | Nepal.....                  | 3.03  | 18.52 |
| 35   | Estonia.....                   | 3.75  | 43.84  | 98   | Latvia.....                 | 3.01  | 17.61 |
| 36   | Jordan.....                    | 3.74  | 43.56  | 99   | Burundi.....                | 3.00  | 17.46 |
| 37   | Bahrain.....                   | 3.74  | 43.52  | 100  | Georgia.....                | 2.99  | 16.94 |
| 38   | Panama.....                    | 3.72  | 42.89  | 101  | Cameroon.....               | 2.98  | 16.76 |
| 39   | Costa Rica.....                | 3.70  | 42.15  | 102  | Greece.....                 | 2.97  | 16.51 |
| 40   | Pakistan.....                  | 3.68  | 41.34  | 103  | Congo, Dem. Rep.....        | 2.97  | 16.44 |
| 41   | Russian Federation.....        | 3.67  | 40.85  | 104  | Mozambique.....             | 2.96  | 16.09 |
| 42   | Australia.....                 | 3.63  | 39.61  | 105  | Iran, Islamic Rep.....      | 2.96  | 15.85 |
| 43   | Portugal.....                  | 3.63  | 39.58  | 106  | Hungary.....                | 2.93  | 14.86 |
| 44   | Lithuania.....                 | 3.62  | 39.33  | 107  | Ecuador.....                | 2.92  | 14.68 |
| 45   | Mexico.....                    | 3.61  | 38.98  | 108  | Morocco.....                | 2.91  | 14.33 |
| 46   | Egypt.....                     | 3.60  | 38.63  | 109  | Paraguay.....               | 2.89  | 13.63 |
| 47   | Slovakia.....                  | 3.59  | 38.20  | 110  | Poland.....                 | 2.87  | 12.75 |
| 48   | Chile.....                     | 3.56  | 37.04  | 111  | Algeria.....                | 2.85  | 12.11 |
| 49   | Bhutan.....                    | 3.55  | 36.80  | 112  | Nigeria.....                | 2.83  | 11.48 |
| 50   | Ghana.....                     | 3.54  | 36.51  | 113  | Bosnia and Herzegovina..... | 2.79  | 9.86  |
| 51   | Czech Republic.....            | 3.54  | 36.48  | 114  | Kyrgyzstan.....             | 2.78  | 9.79  |
| 52   | Oman.....                      | 3.52  | 35.60  | 115  | Romania.....                | 2.77  | 9.40  |
| 53   | Ukraine.....                   | 3.51  | 35.32  | 116  | Bangladesh.....             | 2.76  | 9.08  |
| 54   | Kazakhstan.....                | 3.51  | 35.25  | 117  | Malawi.....                 | 2.74  | 8.38  |
| 55   | Philippines.....               | 3.51  | 35.21  | 118  | Moldova, Rep.....           | 2.67  | 5.92  |
| 56   | Thailand.....                  | 3.50  | 35.18  | 119  | Nicaragua.....              | 2.64  | 4.89  |
| 57   | Guatemala.....                 | 3.49  | 34.51  | 120  | Croatia.....                | 2.63  | 4.40  |
| 58   | Venezuela, Bolivarian Rep..... | 3.47  | 33.91  | 121  | Mongolia.....               | 2.55  | 1.48  |
| 59   | Colombia.....                  | 3.46  | 33.45  | 122  | Trinidad and Tobago.....    | 2.53  | 0.88  |
| 60   | Malta.....                     | 3.45  | 33.38  | 123  | Tunisia.....                | 2.53  | 0.70  |
| 61   | Albania.....                   | 3.43  | 32.64  | 124  | Zimbabwe.....               | 2.51  | 0.28  |
| 62   | Ethiopia.....                  | 3.42  | 32.36  | 125  | Yemen.....                  | 2.51  | 0.00  |
| 63   | Tanzania, United Rep.....      | 3.42  | 32.22  |      |                             |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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# Pillar 4

Retain

## 4.1.1 Pension system

### Workforce contributing to pension system (%) | 2012

| Rank | Country                    | Value  | Score  | Rank | Country               | Value | Score |
|------|----------------------------|--------|--------|------|-----------------------|-------|-------|
| 1    | Luxembourg                 | 100.00 | 100.00 | 64   | Armenia               | 32.00 | 30.61 |
| 2    | Lithuania                  | 99.00  | 98.98  | 65   | Colombia              | 31.00 | 29.59 |
| 3    | Czech Republic             | 95.00  | 94.90  | 66   | Georgia               | 29.00 | 27.55 |
| 3    | Japan                      | 95.00  | 94.90  | 67   | China                 | 27.00 | 25.51 |
| 3    | Switzerland                | 95.00  | 94.90  | 67   | Mexico                | 27.00 | 25.51 |
| 6    | Austria                    | 94.00  | 93.88  | 69   | Dominican Republic    | 26.00 | 24.49 |
| 6    | Estonia                    | 94.00  | 93.88  | 69   | Ecuador               | 26.00 | 24.49 |
| 8    | Denmark                    | 93.00  | 92.86  | 71   | Philippines           | 25.00 | 23.47 |
| 8    | Latvia                     | 93.00  | 92.86  | 72   | Morocco               | 24.00 | 22.45 |
| 8    | Norway                     | 93.00  | 92.86  | 72   | Sri Lanka             | 24.00 | 22.45 |
| 8    | United Kingdom             | 93.00  | 92.86  | 74   | El Salvador           | 23.00 | 21.43 |
| 12   | Hungary                    | 92.00  | 91.84  | 74   | Thailand              | 23.00 | 21.43 |
| 12   | Portugal                   | 92.00  | 91.84  | 76   | Nicaragua             | 22.00 | 20.41 |
| 12   | United States of America   | 92.00  | 91.84  | 76   | Peru                  | 22.00 | 20.41 |
| 15   | Australia                  | 91.00  | 90.82  | 78   | Bahrain               | 20.00 | 18.37 |
| 15   | Belgium                    | 91.00  | 90.82  | 78   | Guatemala             | 20.00 | 18.37 |
| 15   | Netherlands                | 91.00  | 90.82  | 78   | Zimbabwe              | 20.00 | 18.37 |
| 18   | Finland                    | 90.00  | 89.80  | 81   | Viet Nam              | 19.00 | 17.35 |
| 18   | Italy                      | 90.00  | 89.80  | 82   | Honduras              | 17.00 | 15.31 |
| 20   | Israel                     | 89.10  | 88.88  | 83   | Cameroon              | 16.00 | 14.29 |
| 21   | Ireland                    | 89.00  | 88.78  | 84   | Bhutan                | 14.00 | 12.24 |
| 21   | Sweden                     | 89.00  | 88.78  | 84   | Congo, Dem. Rep.      | 14.00 | 12.24 |
| 23   | France                     | 87.00  | 86.73  | 86   | Paraguay              | 12.00 | 10.20 |
| 23   | Germany                    | 87.00  | 86.73  | 87   | Zambia                | 11.00 | 9.18  |
| 23   | Iceland                    | 87.00  | 86.73  | 88   | India                 | 10.00 | 8.16  |
| 23   | Slovenia                   | 87.00  | 86.73  | 88   | Namibia               | 10.00 | 8.16  |
| 27   | Greece                     | 86.00  | 85.71  | 88   | Uganda                | 10.00 | 8.16  |
| 28   | Croatia                    | 83.00  | 82.65  | 88   | Yemen                 | 10.00 | 8.16  |
| 29   | Poland                     | 81.00  | 80.61  | 92   | Botswana              | 9.00  | 7.14  |
| 30   | Bulgaria                   | 79.00  | 78.57  | 93   | Ghana                 | 8.00  | 6.12  |
| 30   | Slovakia                   | 79.00  | 78.57  | 93   | Kenya                 | 8.00  | 6.12  |
| 32   | Uruguay                    | 78.00  | 77.55  | 93   | Nigeria               | 8.00  | 6.12  |
| 33   | Bosnia and Herzegovina     | 71.00  | 70.41  | 96   | Indonesia             | 7.00  | 5.10  |
| 33   | Trinidad and Tobago        | 71.00  | 70.41  | 96   | Mali                  | 7.00  | 5.10  |
| 35   | Spain                      | 69.00  | 68.37  | 98   | South Africa          | 6.00  | 4.08  |
| 36   | Romania                    | 68.00  | 67.35  | 99   | Madagascar            | 5.30  | 3.37  |
| 37   | Canada                     | 67.00  | 66.33  | 100  | Rwanda                | 5.00  | 3.06  |
| 37   | Russian Federation         | 67.00  | 66.33  | 100  | Senegal               | 5.00  | 3.06  |
| 39   | Brunei Darussalam          | 66.00  | 65.31  | 102  | Qatar                 | 4.40  | 2.45  |
| 40   | Ukraine                    | 65.00  | 64.29  | 103  | Burundi               | 4.00  | 2.04  |
| 41   | Kazakhstan                 | 63.00  | 62.24  | 103  | Lesotho               | 4.00  | 2.04  |
| 42   | Singapore                  | 62.00  | 61.22  | 103  | Pakistan              | 4.00  | 2.04  |
| 43   | Chile                      | 60.00  | 59.18  | 103  | Tanzania, United Rep. | 4.00  | 2.04  |
| 44   | Moldova, Rep.              | 59.00  | 58.16  | 107  | Bangladesh            | 3.00  | 1.02  |
| 44   | Turkey                     | 59     | 58.16  | 107  | Gambia                | 3.00  | 1.02  |
| 46   | Costa Rica                 | 56.00  | 55.10  | 107  | Nepal                 | 3.00  | 1.02  |
| 47   | Brazil                     | 55.00  | 54.08  | 110  | Mozambique            | 2.00  | 0.00  |
| 47   | Egypt                      | 55.00  | 54.08  |      | Cambodia              | n/a   | n/a   |
| 49   | Mauritius                  | 53.00  | 52.04  |      | Cyprus                | n/a   | n/a   |
| 50   | Korea, Rep.                | 49.00  | 47.96  |      | Ethiopia              | n/a   | n/a   |
| 50   | Malaysia                   | 49.00  | 47.96  |      | Kuwait                | n/a   | n/a   |
| 50   | Tunisia                    | 49.00  | 47.96  |      | Laos                  | n/a   | n/a   |
| 53   | Serbia                     | 45.00  | 43.88  |      | Liberia               | n/a   | n/a   |
| 54   | Argentina                  | 42.00  | 40.82  |      | Malawi                | n/a   | n/a   |
| 55   | Kyrgyzstan                 | 40.00  | 38.78  |      | Malta                 | n/a   | n/a   |
| 56   | Albania                    | 38.00  | 36.73  |      | Montenegro            | n/a   | n/a   |
| 56   | Jordan                     | 38.00  | 36.73  |      | New Zealand           | n/a   | n/a   |
| 58   | Algeria                    | 37.00  | 35.71  |      | Oman                  | n/a   | n/a   |
| 59   | Azerbaijan                 | 35.00  | 33.67  |      | Panama                | n/a   | n/a   |
| 59   | Lebanon                    | 35.00  | 33.67  |      | Saudi Arabia          | n/a   | n/a   |
| 61   | Iran, Islamic Rep.         | 34.00  | 32.65  |      | Tajikistan            | n/a   | n/a   |
| 61   | Venezuela, Bolivarian Rep. | 34.00  | 32.65  |      | United Arab Emirates  | n/a   | n/a   |
| 63   | Mongolia                   | 33.00  | 31.63  |      |                       |       |       |

**SOURCE:** Pallares-Miralles, M., Romero, C., & Whitehouse, E. 2012. International patterns of pension provision II: A worldwide overview of facts and figures. Social protection and labor discussion paper no. SP 1211. Washington, DC: World Bank (<https://openknowledge.worldbank.org/handle/10986/13560>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 4.1.2 Social protection

**Average answer to the question: In your country, to what extent does a formal social safety net provide protection to the general population from economic insecurity in the event of job loss or disability? [1 = not at all; 7 = provides full protection] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Norway.....                   | 6.29  | 100.00 | 64   | Laos.....                      | 3.70  | 39.02 |
| 2    | Austria.....                  | 6.17  | 97.17  | 65   | Latvia.....                    | 3.68  | 38.59 |
| 3    | Finland.....                  | 6.16  | 97.07  | 66   | Algeria.....                   | 3.67  | 38.31 |
| 4    | Luxembourg.....               | 6.16  | 97.05  | 67   | Trinidad and Tobago.....       | 3.67  | 38.22 |
| 5    | Belgium.....                  | 6.13  | 96.34  | 68   | Ecuador.....                   | 3.66  | 38.03 |
| 6    | France.....                   | 6.12  | 96.08  | 69   | Brazil.....                    | 3.60  | 36.66 |
| 7    | Denmark.....                  | 6.11  | 95.92  | 70   | Ghana.....                     | 3.60  | 36.52 |
| 8    | Switzerland.....              | 6.05  | 94.39  | 71   | South Africa.....              | 3.56  | 35.74 |
| 9    | Netherlands.....              | 5.86  | 90.04  | 72   | Kazakhstan.....                | 3.55  | 35.55 |
| 10   | New Zealand.....              | 5.69  | 85.85  | 73   | Kenya.....                     | 3.54  | 35.27 |
| 11   | Sweden.....                   | 5.63  | 84.41  | 73   | Zambia.....                    | 3.54  | 35.27 |
| 12   | Iceland.....                  | 5.62  | 84.27  | 75   | Mongolia.....                  | 3.51  | 34.47 |
| 13   | Canada.....                   | 5.61  | 83.93  | 76   | Ethiopia.....                  | 3.46  | 33.38 |
| 14   | Australia.....                | 5.55  | 82.68  | 77   | Sri Lanka.....                 | 3.45  | 33.12 |
| 15   | Spain.....                    | 5.49  | 81.32  | 78   | Russian Federation.....        | 3.43  | 32.70 |
| 16   | Germany.....                  | 5.44  | 80.09  | 79   | Mali.....                      | 3.43  | 32.65 |
| 17   | Ireland.....                  | 5.36  | 78.13  | 80   | Pakistan.....                  | 3.37  | 31.14 |
| 18   | United Kingdom.....           | 5.20  | 74.45  | 81   | Colombia.....                  | 3.35  | 30.71 |
| 19   | United States of America..... | 5.20  | 74.36  | 82   | Bulgaria.....                  | 3.34  | 30.43 |
| 20   | Qatar.....                    | 5.19  | 74.19  | 83   | Montenegro.....                | 3.33  | 30.34 |
| 21   | Japan.....                    | 5.12  | 72.47  | 84   | Lesotho.....                   | 3.32  | 29.98 |
| 22   | Malaysia.....                 | 5.10  | 72.00  | 85   | Egypt.....                     | 3.31  | 29.87 |
| 23   | Uruguay.....                  | 5.01  | 69.85  | 85   | Ukraine.....                   | 3.31  | 29.87 |
| 24   | Malta.....                    | 4.99  | 69.33  | 87   | Mexico.....                    | 3.30  | 29.58 |
| 25   | Czech Republic.....           | 4.93  | 67.94  | 88   | Lithuania.....                 | 3.27  | 28.87 |
| 26   | Bahrain.....                  | 4.87  | 66.53  | 89   | Tunisia.....                   | 3.22  | 27.62 |
| 27   | United Arab Emirates.....     | 4.84  | 65.79  | 90   | Armenia.....                   | 3.20  | 27.13 |
| 28   | Portugal.....                 | 4.75  | 63.69  | 91   | Croatia.....                   | 3.16  | 26.35 |
| 29   | Slovenia.....                 | 4.67  | 61.83  | 92   | Senegal.....                   | 3.16  | 26.26 |
| 30   | Saudi Arabia.....             | 4.65  | 61.34  | 93   | Morocco.....                   | 3.12  | 25.19 |
| 31   | Kuwait.....                   | 4.62  | 60.58  | 94   | Albania.....                   | 3.08  | 24.35 |
| 32   | Israel.....                   | 4.58  | 59.85  | 95   | Kyrgyzstan.....                | 3.07  | 24.06 |
| 33   | Azerbaijan.....               | 4.52  | 58.27  | 95   | Philippines.....               | 3.07  | 24.06 |
| 34   | Rwanda.....                   | 4.51  | 58.01  | 97   | Greece.....                    | 3.07  | 24.02 |
| 35   | China.....                    | 4.50  | 57.75  | 98   | Mozambique.....                | 3.05  | 23.73 |
| 36   | Oman.....                     | 4.47  | 57.11  | 99   | Peru.....                      | 3.04  | 23.43 |
| 37   | Costa Rica.....               | 4.45  | 56.66  | 100  | Liberia.....                   | 3.04  | 23.38 |
| 38   | Singapore.....                | 4.36  | 54.54  | 101  | Guatemala.....                 | 3.00  | 22.43 |
| 39   | Indonesia.....                | 4.30  | 53.17  | 102  | Dominican Republic.....        | 2.98  | 21.92 |
| 40   | Tajikistan.....               | 4.25  | 51.95  | 103  | Hungary.....                   | 2.96  | 21.49 |
| 41   | India.....                    | 4.23  | 51.40  | 104  | Cambodia.....                  | 2.94  | 21.09 |
| 42   | Estonia.....                  | 4.18  | 50.32  | 105  | Serbia.....                    | 2.92  | 20.57 |
| 43   | Italy.....                    | 4.11  | 48.69  | 106  | Uganda.....                    | 2.88  | 19.72 |
| 44   | Bhutan.....                   | 4.09  | 48.20  | 107  | Paraguay.....                  | 2.84  | 18.78 |
| 45   | Turkey.....                   | 4.07  | 47.79  | 107  | Poland.....                    | 2.84  | 18.78 |
| 46   | Cyprus.....                   | 4.06  | 47.58  | 109  | Cameroon.....                  | 2.83  | 18.45 |
| 47   | Gambia.....                   | 4.06  | 47.39  | 110  | Honduras.....                  | 2.82  | 18.12 |
| 48   | Jordan.....                   | 4.06  | 47.37  | 111  | Moldova, Rep.....              | 2.78  | 17.34 |
| 49   | Mauritius.....                | 4.04  | 47.04  | 112  | Georgia.....                   | 2.75  | 16.51 |
| 50   | Chile.....                    | 4.02  | 46.45  | 113  | El Salvador.....               | 2.68  | 15.03 |
| 51   | Brunei Darussalam.....        | 3.95  | 44.89  | 114  | Lebanon.....                   | 2.66  | 14.46 |
| 52   | Thailand.....                 | 3.94  | 44.56  | 115  | Malawi.....                    | 2.63  | 13.64 |
| 53   | Namibia.....                  | 3.88  | 43.17  | 116  | Burundi.....                   | 2.62  | 13.56 |
| 54   | Romania.....                  | 3.87  | 42.98  | 117  | Bosnia and Herzegovina.....    | 2.57  | 12.36 |
| 55   | Panama.....                   | 3.84  | 42.20  | 118  | Madagascar.....                | 2.56  | 12.01 |
| 56   | Korea, Rep.....               | 3.83  | 42.06  | 119  | Nepal.....                     | 2.55  | 11.84 |
| 57   | Slovakia.....                 | 3.81  | 41.61  | 120  | Congo, Dem. Rep.....           | 2.55  | 11.82 |
| 58   | Botswana.....                 | 3.80  | 41.31  | 121  | Bangladesh.....                | 2.40  | 8.23  |
| 59   | Iran, Islamic Rep.....        | 3.78  | 40.95  | 122  | Venezuela, Bolivarian Rep..... | 2.18  | 3.14  |
| 60   | Viet Nam.....                 | 3.76  | 40.34  | 123  | Zimbabwe.....                  | 2.16  | 2.74  |
| 61   | Tanzania, United Rep.....     | 3.76  | 40.32  | 124  | Nigeria.....                   | 2.08  | 0.73  |
| 62   | Nicaragua.....                | 3.71  | 39.33  | 125  | Yemen.....                     | 2.05  | 0.00  |
| 63   | Argentina.....                | 3.71  | 39.30  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 4.1.3 Brain retention

**Average answer to the question: To what extent does your country retain talented people? [1 = not at all—the best and brightest leave to pursue opportunities abroad; 7 = to a great extent—the best and brightest stay and pursue opportunities in the country] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 5.96  | 100.00 | 64   | Sri Lanka.....                 | 3.43  | 41.42 |
| 2    | United Arab Emirates.....     | 5.85  | 97.30  | 65   | Jordan.....                    | 3.42  | 41.35 |
| 3    | United States of America..... | 5.74  | 94.94  | 66   | Liberia.....                   | 3.42  | 41.23 |
| 4    | Norway.....                   | 5.46  | 88.43  | 67   | Estonia.....                   | 3.42  | 41.21 |
| 5    | Singapore.....                | 5.46  | 88.31  | 68   | Nigeria.....                   | 3.39  | 40.68 |
| 6    | United Kingdom.....           | 5.34  | 85.56  | 69   | Ethiopia.....                  | 3.37  | 40.17 |
| 7    | Netherlands.....              | 5.25  | 83.58  | 70   | Honduras.....                  | 3.36  | 39.99 |
| 8    | Luxembourg.....               | 5.19  | 82.05  | 71   | France.....                    | 3.27  | 37.86 |
| 9    | Qatar.....                    | 5.17  | 81.70  | 71   | Tanzania, United Rep. ....     | 3.27  | 37.86 |
| 10   | Finland.....                  | 5.10  | 80.06  | 73   | Lesotho.....                   | 3.27  | 37.84 |
| 11   | Malaysia.....                 | 5.09  | 79.88  | 74   | Spain.....                     | 3.27  | 37.72 |
| 12   | Germany.....                  | 5.07  | 79.39  | 75   | South Africa.....              | 3.25  | 37.40 |
| 13   | Chile.....                    | 5.02  | 78.24  | 75   | Zambia.....                    | 3.25  | 37.40 |
| 14   | Canada.....                   | 5.00  | 77.75  | 77   | Kazakhstan.....                | 3.24  | 37.05 |
| 15   | Iceland.....                  | 4.98  | 77.29  | 78   | Malawi.....                    | 3.23  | 36.91 |
| 16   | Sweden.....                   | 4.94  | 76.44  | 79   | Turkey.....                    | 3.23  | 36.82 |
| 17   | Rwanda.....                   | 4.90  | 75.44  | 80   | Uruguay.....                   | 3.22  | 36.57 |
| 18   | Israel.....                   | 4.76  | 72.19  | 81   | Bangladesh.....                | 3.21  | 36.41 |
| 19   | Denmark.....                  | 4.67  | 70.18  | 82   | Kuwait.....                    | 3.20  | 36.27 |
| 20   | Ireland.....                  | 4.66  | 69.92  | 83   | Senegal.....                   | 3.18  | 35.67 |
| 21   | New Zealand.....              | 4.63  | 69.16  | 84   | Poland.....                    | 3.17  | 35.60 |
| 22   | Australia.....                | 4.62  | 68.93  | 85   | Morocco.....                   | 3.16  | 35.16 |
| 23   | India.....                    | 4.59  | 68.33  | 86   | Mozambique.....                | 3.13  | 34.60 |
| 24   | Costa Rica.....               | 4.55  | 67.38  | 87   | Slovenia.....                  | 3.12  | 34.30 |
| 25   | Azerbaijan.....               | 4.54  | 67.04  | 88   | Mali.....                      | 3.11  | 34.05 |
| 26   | Saudi Arabia.....             | 4.53  | 66.97  | 89   | Ecuador.....                   | 3.07  | 33.29 |
| 27   | Panama.....                   | 4.51  | 66.44  | 90   | Armenia.....                   | 3.05  | 32.62 |
| 28   | Korea, Rep.....               | 4.46  | 65.23  | 90   | Nicaragua.....                 | 3.05  | 32.62 |
| 29   | Malta.....                    | 4.46  | 65.19  | 92   | Dominican Republic.....        | 3.04  | 32.57 |
| 30   | Bahrain.....                  | 4.43  | 64.68  | 93   | Georgia.....                   | 3.02  | 32.09 |
| 31   | Indonesia.....                | 4.34  | 62.44  | 94   | Montenegro.....                | 2.99  | 31.25 |
| 32   | Belgium.....                  | 4.33  | 62.39  | 95   | Uganda.....                    | 2.98  | 31.07 |
| 33   | China.....                    | 4.33  | 62.37  | 96   | Egypt.....                     | 2.95  | 30.40 |
| 34   | Austria.....                  | 4.32  | 62.02  | 97   | Iran, Islamic Rep.....         | 2.93  | 29.98 |
| 35   | Oman.....                     | 4.17  | 58.67  | 98   | Lebanon.....                   | 2.89  | 28.99 |
| 36   | Bhutan.....                   | 4.08  | 56.62  | 99   | Italy.....                     | 2.87  | 28.48 |
| 37   | Kenya.....                    | 3.98  | 54.17  | 100  | Madagascar.....                | 2.83  | 27.67 |
| 38   | Gambia.....                   | 3.97  | 54.05  | 101  | Congo, Dem. Rep.....           | 2.78  | 26.50 |
| 39   | Thailand.....                 | 3.97  | 53.89  | 102  | Lithuania.....                 | 2.73  | 25.29 |
| 40   | Laos.....                     | 3.92  | 52.83  | 103  | Tunisia.....                   | 2.69  | 24.30 |
| 41   | Ghana.....                    | 3.91  | 52.67  | 104  | Nepal.....                     | 2.67  | 24.05 |
| 42   | Japan.....                    | 3.91  | 52.62  | 105  | Cameroon.....                  | 2.61  | 22.52 |
| 43   | Guatemala.....                | 3.90  | 52.37  | 106  | Albania.....                   | 2.60  | 22.34 |
| 44   | Tajikistan.....               | 3.88  | 51.91  | 107  | El Salvador.....               | 2.54  | 21.04 |
| 45   | Brazil.....                   | 3.78  | 49.67  | 108  | Latvia.....                    | 2.54  | 20.91 |
| 46   | Argentina.....                | 3.74  | 48.67  | 109  | Bulgaria.....                  | 2.52  | 20.49 |
| 47   | Mauritius.....                | 3.72  | 48.26  | 110  | Burundi.....                   | 2.50  | 20.05 |
| 48   | Cambodia.....                 | 3.69  | 47.56  | 111  | Greece.....                    | 2.48  | 19.64 |
| 49   | Czech Republic.....           | 3.69  | 47.49  | 112  | Kyrgyzstan.....                | 2.48  | 19.52 |
| 50   | Peru.....                     | 3.68  | 47.22  | 113  | Algeria.....                   | 2.46  | 19.08 |
| 51   | Namibia.....                  | 3.68  | 47.17  | 114  | Zimbabwe.....                  | 2.45  | 18.97 |
| 52   | Brunei Darussalam.....        | 3.67  | 46.99  | 115  | Slovakia.....                  | 2.45  | 18.90 |
| 53   | Botswana.....                 | 3.66  | 46.75  | 116  | Hungary.....                   | 2.43  | 18.41 |
| 53   | Cyprus.....                   | 3.66  | 46.75  | 117  | Mongolia.....                  | 2.42  | 18.18 |
| 55   | Philippines.....              | 3.60  | 45.39  | 118  | Ukraine.....                   | 2.19  | 12.94 |
| 56   | Pakistan.....                 | 3.56  | 44.49  | 119  | Yemen.....                     | 2.12  | 11.20 |
| 57   | Russian Federation.....       | 3.53  | 43.91  | 120  | Croatia.....                   | 2.08  | 10.23 |
| 58   | Viet Nam.....                 | 3.51  | 43.40  | 121  | Romania.....                   | 2.01  | 8.59  |
| 59   | Mexico.....                   | 3.50  | 43.08  | 122  | Moldova, Rep.....              | 1.91  | 6.40  |
| 60   | Portugal.....                 | 3.50  | 43.04  | 123  | Serbia.....                    | 1.84  | 4.83  |
| 61   | Trinidad and Tobago.....      | 3.49  | 42.80  | 124  | Bosnia and Herzegovina.....    | 1.80  | 3.93  |
| 62   | Colombia.....                 | 3.47  | 42.50  | 125  | Venezuela, Bolivarian Rep..... | 1.63  | 0.00  |
| 63   | Paraguay.....                 | 3.44  | 41.81  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 4.2.1 Environmental performance

### Environmental Performance Index | 2018

| Rank | Country                        | Value | Score  | Rank | Country                     | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1    | Switzerland.....               | 87.42 | 100.00 | 64   | Argentina.....              | 59.30 | 53.13 |
| 2    | France.....                    | 83.95 | 94.22  | 65   | Malaysia.....               | 59.22 | 52.99 |
| 3    | Denmark.....                   | 81.60 | 90.30  | 66   | United Arab Emirates.....   | 58.90 | 52.46 |
| 4    | Malta.....                     | 80.90 | 89.13  | 67   | Namibia.....                | 58.46 | 51.73 |
| 5    | Sweden.....                    | 80.51 | 88.48  | 68   | Iran, Islamic Rep.....      | 58.16 | 51.23 |
| 6    | United Kingdom.....            | 79.89 | 87.45  | 69   | Philippines.....            | 57.65 | 50.38 |
| 7    | Luxembourg.....                | 79.12 | 86.16  | 70   | Mongolia.....               | 57.51 | 50.14 |
| 8    | Austria.....                   | 78.97 | 85.91  | 71   | Chile.....                  | 57.49 | 50.11 |
| 9    | Ireland.....                   | 78.77 | 85.58  | 71   | Serbia.....                 | 57.49 | 50.11 |
| 10   | Finland.....                   | 78.64 | 85.36  | 73   | Saudi Arabia.....           | 57.47 | 50.08 |
| 11   | Iceland.....                   | 78.57 | 85.25  | 74   | Ecuador.....                | 57.42 | 49.99 |
| 12   | Spain.....                     | 78.39 | 84.95  | 75   | Algeria.....                | 57.18 | 49.59 |
| 13   | Germany.....                   | 78.37 | 84.91  | 76   | Mauritius.....              | 56.63 | 48.67 |
| 14   | Norway.....                    | 77.49 | 83.45  | 77   | Georgia.....                | 55.69 | 47.11 |
| 15   | Belgium.....                   | 77.38 | 83.26  | 78   | Bahrain.....                | 55.15 | 46.21 |
| 16   | Italy.....                     | 76.96 | 82.56  | 79   | Nicaragua.....              | 55.04 | 46.02 |
| 17   | New Zealand.....               | 75.96 | 80.90  | 80   | Kyrgyzstan.....             | 54.86 | 45.72 |
| 18   | Netherlands.....               | 75.46 | 80.06  | 81   | Nigeria.....                | 54.76 | 45.56 |
| 19   | Israel.....                    | 75.01 | 79.31  | 82   | Kazakhstan.....             | 54.56 | 45.22 |
| 20   | Japan.....                     | 74.69 | 78.78  | 83   | Paraguay.....               | 53.93 | 44.17 |
| 21   | Australia.....                 | 74.12 | 77.83  | 84   | El Salvador.....            | 53.91 | 44.14 |
| 22   | Greece.....                    | 73.60 | 76.96  | 85   | Turkey.....                 | 52.96 | 42.56 |
| 23   | Cyprus.....                    | 72.60 | 75.30  | 86   | Ukraine.....                | 52.87 | 42.41 |
| 24   | Canada.....                    | 72.18 | 74.60  | 87   | Guatemala.....              | 52.33 | 41.51 |
| 25   | Portugal.....                  | 71.91 | 74.15  | 88   | Moldova, Rep.....           | 51.97 | 40.91 |
| 26   | United States of America.....  | 71.19 | 72.95  | 89   | Botswana.....               | 51.70 | 40.46 |
| 27   | Slovakia.....                  | 70.60 | 71.96  | 90   | Honduras.....               | 51.51 | 40.14 |
| 28   | Lithuania.....                 | 69.33 | 69.84  | 91   | Oman.....                   | 51.32 | 39.82 |
| 29   | Bulgaria.....                  | 67.85 | 67.38  | 92   | Zambia.....                 | 50.97 | 39.24 |
| 29   | Costa Rica.....                | 67.85 | 67.38  | 93   | Tanzania, United Rep.....   | 50.83 | 39.01 |
| 31   | Qatar.....                     | 67.80 | 67.29  | 94   | China.....                  | 50.74 | 38.86 |
| 32   | Czech Republic.....            | 67.68 | 67.09  | 95   | Thailand.....               | 49.88 | 37.42 |
| 33   | Slovenia.....                  | 67.57 | 66.91  | 96   | Ghana.....                  | 49.66 | 37.06 |
| 34   | Trinidad and Tobago.....       | 67.36 | 66.56  | 97   | Senegal.....                | 49.52 | 36.82 |
| 35   | Latvia.....                    | 66.12 | 64.49  | 98   | Malawi.....                 | 49.21 | 36.31 |
| 36   | Albania.....                   | 65.46 | 63.39  | 99   | Tajikistan.....             | 47.85 | 34.04 |
| 37   | Croatia.....                   | 65.45 | 63.38  | 100  | Kenya.....                  | 47.25 | 33.04 |
| 38   | Colombia.....                  | 65.22 | 62.99  | 101  | Bhutan.....                 | 47.22 | 32.99 |
| 39   | Hungary.....                   | 65.01 | 62.64  | 102  | Viet Nam.....               | 46.96 | 32.56 |
| 40   | Romania.....                   | 64.78 | 62.26  | 103  | Indonesia.....              | 46.92 | 32.49 |
| 41   | Dominican Republic.....        | 64.71 | 62.14  | 104  | Mozambique.....             | 46.37 | 31.57 |
| 42   | Uruguay.....                   | 64.65 | 62.04  | 105  | Ethiopia.....               | 44.78 | 28.92 |
| 43   | Estonia.....                   | 64.31 | 61.48  | 106  | South Africa.....           | 44.73 | 28.84 |
| 44   | Singapore.....                 | 64.23 | 61.34  | 107  | Uganda.....                 | 44.28 | 28.09 |
| 45   | Poland.....                    | 64.11 | 61.14  | 108  | Mali.....                   | 43.71 | 27.14 |
| 46   | Venezuela, Bolivarian Rep..... | 63.89 | 60.78  | 109  | Rwanda.....                 | 43.68 | 27.09 |
| 47   | Russian Federation.....        | 63.79 | 60.61  | 110  | Zimbabwe.....               | 43.41 | 26.64 |
| 48   | Brunei Darussalam.....         | 63.57 | 60.24  | 111  | Cambodia.....               | 43.23 | 26.34 |
| 49   | Morocco.....                   | 63.47 | 60.08  | 112  | Laos.....                   | 42.94 | 25.85 |
| 50   | Panama.....                    | 62.71 | 58.81  | 113  | Gambia.....                 | 42.42 | 24.99 |
| 51   | Tunisia.....                   | 62.35 | 58.21  | 114  | Bosnia and Herzegovina..... | 41.84 | 24.02 |
| 52   | Azerbaijan.....                | 62.33 | 58.18  | 115  | Liberia.....                | 41.62 | 23.65 |
| 53   | Korea, Rep.....                | 62.30 | 58.13  | 116  | Cameroon.....               | 40.81 | 22.30 |
| 54   | Kuwait.....                    | 62.28 | 58.09  | 117  | Pakistan.....               | 37.50 | 16.79 |
| 55   | Jordan.....                    | 62.20 | 57.96  | 118  | Lesotho.....                | 33.78 | 10.59 |
| 56   | Armenia.....                   | 62.07 | 57.74  | 119  | Madagascar.....             | 33.73 | 10.50 |
| 57   | Peru.....                      | 61.92 | 57.49  | 120  | Nepal.....                  | 31.44 | 6.68  |
| 58   | Montenegro.....                | 61.33 | 56.51  | 121  | India.....                  | 30.57 | 5.23  |
| 59   | Egypt.....                     | 61.21 | 56.31  | 122  | Congo, Dem. Rep.....        | 30.41 | 4.97  |
| 60   | Lebanon.....                   | 61.08 | 56.09  | 123  | Bangladesh.....             | 29.56 | 3.55  |
| 61   | Brazil.....                    | 60.70 | 55.46  | 124  | Burundi.....                | 27.43 | 0.00  |
| 62   | Sri Lanka.....                 | 60.61 | 55.31  |      | Yemen.....                  | n/a   | n/a   |
| 63   | Mexico.....                    | 59.69 | 53.78  |      |                             |       |       |

**SOURCE:** The 2018 Environmental Performance Index, Yale Center for Environmental Law and Policy (<http://epi.yale.edu>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 4.2.2 Personal safety

### Personal safety indicator | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Sweden.....                   | 94.02 | 100.00 | 64   | Malaysia.....                  | 71.30 | 63.28 |
| 2    | Switzerland.....              | 93.96 | 99.90  | 65   | Senegal.....                   | 70.41 | 61.85 |
| 3    | Singapore.....                | 93.90 | 99.81  | 66   | Bangladesh.....                | 70.05 | 61.26 |
| 4    | Denmark.....                  | 93.75 | 99.56  | 67   | Indonesia.....                 | 69.99 | 61.17 |
| 4    | Norway.....                   | 93.75 | 99.56  | 68   | Ghana.....                     | 69.54 | 60.44 |
| 6    | Iceland.....                  | 93.55 | 99.24  | 69   | Jordan.....                    | 69.43 | 60.26 |
| 7    | Austria.....                  | 93.22 | 98.71  | 70   | Nicaragua.....                 | 68.87 | 59.36 |
| 8    | Finland.....                  | 93.13 | 98.56  | 71   | Kazakhstan.....                | 68.79 | 59.23 |
| 9    | Czech Republic.....           | 92.92 | 98.22  | 72   | Sri Lanka.....                 | 68.68 | 59.05 |
| 10   | Slovenia.....                 | 92.81 | 98.04  | 73   | Tajikistan.....                | 68.52 | 58.79 |
| 11   | Canada.....                   | 92.74 | 97.93  | 74   | Morocco.....                   | 67.92 | 57.82 |
| 12   | Japan.....                    | 91.66 | 96.19  | 75   | Kyrgyzstan.....                | 66.77 | 55.96 |
| 13   | Australia.....                | 91.23 | 95.49  | 76   | Ethiopia.....                  | 66.38 | 55.33 |
| 14   | New Zealand.....              | 91.00 | 95.12  | 77   | Namibia.....                   | 66.24 | 55.11 |
| 15   | Portugal.....                 | 90.41 | 94.17  | 78   | Algeria.....                   | 65.77 | 54.35 |
| 16   | Netherlands.....              | 90.08 | 93.63  | 78   | Paraguay.....                  | 65.77 | 54.35 |
| 17   | Ireland.....                  | 89.72 | 93.05  | 80   | Madagascar.....                | 65.36 | 53.68 |
| 18   | Germany.....                  | 89.71 | 93.03  | 81   | Zambia.....                    | 65.25 | 53.51 |
| 19   | Bhutan.....                   | 89.21 | 92.23  | 82   | Ecuador.....                   | 65.18 | 53.39 |
| 20   | Slovakia.....                 | 88.84 | 91.63  | 83   | Iran, Islamic Rep.....         | 64.86 | 52.88 |
| 21   | Poland.....                   | 87.65 | 89.71  | 84   | Turkey.....                    | 64.61 | 52.47 |
| 22   | Korea, Rep.....               | 87.13 | 88.87  | 85   | Malawi.....                    | 64.57 | 52.41 |
| 23   | United States of America..... | 86.76 | 88.27  | 86   | Egypt.....                     | 64.54 | 52.36 |
| 24   | Qatar.....                    | 86.10 | 87.20  | 87   | Peru.....                      | 64.06 | 51.58 |
| 25   | United Kingdom.....           | 85.45 | 86.15  | 88   | China.....                     | 64.01 | 51.50 |
| 26   | Kuwait.....                   | 84.48 | 84.58  | 89   | Argentina.....                 | 63.92 | 51.36 |
| 27   | Latvia.....                   | 84.08 | 83.94  | 90   | Uganda.....                    | 62.68 | 49.35 |
| 28   | Belgium.....                  | 83.87 | 83.60  | 91   | Mali.....                      | 61.89 | 48.08 |
| 29   | Estonia.....                  | 83.41 | 82.85  | 92   | Tanzania, United Rep.....      | 61.80 | 47.93 |
| 30   | Spain.....                    | 83.37 | 82.79  | 93   | Liberia.....                   | 61.75 | 47.85 |
| 31   | Croatia.....                  | 83.26 | 82.61  | 94   | Thailand.....                  | 61.73 | 47.82 |
| 32   | Georgia.....                  | 82.87 | 81.98  | 95   | Rwanda.....                    | 61.04 | 46.70 |
| 33   | France.....                   | 82.74 | 81.77  | 96   | Cambodia.....                  | 60.36 | 45.60 |
| 34   | Mauritius.....                | 82.73 | 81.76  | 97   | India.....                     | 60.35 | 45.59 |
| 35   | Serbia.....                   | 81.80 | 80.25  | 98   | Burundi.....                   | 60.29 | 45.49 |
| 36   | Hungary.....                  | 81.75 | 80.17  | 99   | Lesotho.....                   | 59.02 | 43.44 |
| 37   | Israel.....                   | 81.28 | 79.41  | 100  | Philippines.....               | 58.74 | 42.99 |
| 38   | Cyprus.....                   | 81.15 | 79.20  | 101  | Mozambique.....                | 58.67 | 42.87 |
| 39   | United Arab Emirates.....     | 80.92 | 78.83  | 102  | Russian Federation.....        | 57.83 | 41.52 |
| 40   | Lithuania.....                | 79.64 | 76.76  | 103  | Ukraine.....                   | 57.32 | 40.69 |
| 41   | Romania.....                  | 79.54 | 76.60  | 104  | Gambia.....                    | 55.98 | 38.53 |
| 42   | Oman.....                     | 78.53 | 74.97  | 105  | Dominican Republic.....        | 55.75 | 38.15 |
| 43   | Greece.....                   | 77.92 | 73.98  | 106  | Lebanon.....                   | 55.00 | 36.94 |
| 44   | Chile.....                    | 77.67 | 73.58  | 107  | Trinidad and Tobago.....       | 54.93 | 36.83 |
| 45   | Bosnia and Herzegovina.....   | 76.43 | 71.57  | 108  | Cameroon.....                  | 54.68 | 36.43 |
| 46   | Laos.....                     | 76.00 | 70.88  | 109  | Pakistan.....                  | 54.30 | 35.81 |
| 47   | Moldova, Rep.....             | 75.89 | 70.70  | 110  | Zimbabwe.....                  | 54.28 | 35.78 |
| 48   | Bulgaria.....                 | 75.86 | 70.65  | 111  | Colombia.....                  | 51.66 | 31.54 |
| 49   | Costa Rica.....               | 75.41 | 69.93  | 112  | Kenya.....                     | 51.43 | 31.17 |
| 50   | Botswana.....                 | 75.37 | 69.86  | 113  | Mexico.....                    | 50.90 | 30.32 |
| 51   | Nepal.....                    | 75.35 | 69.83  | 114  | Yemen.....                     | 49.22 | 27.60 |
| 52   | Azerbaijan.....               | 75.10 | 69.42  | 115  | Brazil.....                    | 48.38 | 26.24 |
| 53   | Viet Nam.....                 | 75.03 | 69.31  | 116  | South Africa.....              | 45.43 | 21.48 |
| 54   | Panama.....                   | 74.70 | 68.78  | 117  | Guatemala.....                 | 45.17 | 21.06 |
| 55   | Montenegro.....               | 74.17 | 67.92  | 118  | Nigeria.....                   | 42.93 | 17.44 |
| 56   | Uruguay.....                  | 74.02 | 67.68  | 119  | Congo, Dem. Rep.....           | 40.71 | 13.85 |
| 57   | Albania.....                  | 72.82 | 65.74  | 120  | El Salvador.....               | 37.36 | 8.44  |
| 58   | Mongolia.....                 | 72.70 | 65.55  | 121  | Honduras.....                  | 32.14 | 0.00  |
| 59   | Armenia.....                  | 72.32 | 64.93  |      | Brunei Darussalam.....         | n/a   | n/a   |
| 60   | Italy.....                    | 72.10 | 64.58  |      | Luxembourg.....                | n/a   | n/a   |
| 61   | Saudi Arabia.....             | 71.77 | 64.04  |      | Malta.....                     | n/a   | n/a   |
| 62   | Tunisia.....                  | 71.73 | 63.98  |      | Venezuela, Bolivarian Rep..... | n/a   | n/a   |
| 63   | Bahrain.....                  | 71.60 | 63.77  |      |                                |       |       |

**SOURCE:** Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 4.2.3 Physician density

### Physicians (per 1,000 people) | 2016

| Rank | Country                    | Value | Score  | Rank | Country               | Value | Score |
|------|----------------------------|-------|--------|------|-----------------------|-------|-------|
| 1    | Greece                     | 6.26  | 100.00 | 64   | Brazil                | 1.85  | 29.41 |
| 2    | Austria                    | 5.23  | 83.57  | 65   | Colombia              | 1.82  | 28.91 |
| 3    | Georgia                    | 4.78  | 76.29  | 65   | Trinidad and Tobago   | 1.82  | 28.91 |
| 4    | Portugal                   | 4.43  | 70.68  | 67   | China                 | 1.81  | 28.76 |
| 5    | Norway                     | 4.39  | 70.02  | 68   | Turkey                | 1.75  | 27.75 |
| 6    | Lithuania                  | 4.38  | 69.92  | 69   | Brunei Darussalam     | 1.75  | 27.71 |
| 7    | Switzerland                | 4.25  | 67.82  | 70   | Tajikistan            | 1.71  | 27.19 |
| 8    | Germany                    | 4.19  | 66.91  | 71   | Ecuador               | 1.67  | 26.41 |
| 9    | Sweden                     | 4.19  | 66.86  | 72   | Panama                | 1.59  | 25.27 |
| 10   | Italy                      | 4.02  | 64.18  | 73   | United Arab Emirates  | 1.56  | 24.69 |
| 11   | Bulgaria                   | 4.00  | 63.83  | 74   | Malaysia              | 1.53  | 24.29 |
| 12   | Russian Federation         | 3.98  | 63.44  | 75   | Dominican Republic    | 1.49  | 23.67 |
| 13   | Uruguay                    | 3.94  | 62.85  | 76   | Iran, Islamic Rep.    | 1.49  | 23.62 |
| 14   | Malta                      | 3.91  | 62.37  | 77   | Tunisia               | 1.29  | 20.38 |
| 15   | Argentina                  | 3.91  | 62.35  | 78   | Albania               | 1.29  | 20.33 |
| 16   | Spain                      | 3.87  | 61.79  | 78   | Paraguay              | 1.29  | 20.33 |
| 17   | Iceland                    | 3.79  | 60.49  | 80   | Algeria               | 1.19  | 18.82 |
| 18   | Czech Republic             | 3.68  | 58.67  | 81   | Costa Rica            | 1.15  | 18.15 |
| 19   | Denmark                    | 3.66  | 58.31  | 82   | Peru                  | 1.12  | 17.60 |
| 20   | Israel                     | 3.58  | 57.05  | 83   | Philippines           | 1.11  | 17.51 |
| 21   | Australia                  | 3.50  | 55.76  | 84   | Chile                 | 1.03  | 16.27 |
| 22   | Netherlands                | 3.48  | 55.48  | 85   | Pakistan              | 0.98  | 15.39 |
| 23   | Slovakia                   | 3.45  | 55.03  | 86   | Bahrain               | 0.92  | 14.49 |
| 24   | Estonia                    | 3.43  | 54.71  | 87   | Nicaragua             | 0.91  | 14.37 |
| 25   | Jordan                     | 3.43  | 54.64  | 88   | Guatemala             | 0.90  | 14.09 |
| 26   | Azerbaijan                 | 3.40  | 54.26  | 89   | Sri Lanka             | 0.88  | 13.84 |
| 27   | Kazakhstan                 | 3.27  | 52.20  | 90   | Viet Nam              | 0.82  | 12.87 |
| 28   | Mongolia                   | 3.26  | 52.01  | 91   | South Africa          | 0.82  | 12.83 |
| 29   | France                     | 3.24  | 51.63  | 92   | Egypt                 | 0.81  | 12.76 |
| 30   | Latvia                     | 3.21  | 51.16  | 93   | India                 | 0.76  | 11.86 |
| 31   | Moldova, Rep.              | 3.20  | 50.99  | 94   | Morocco               | 0.62  | 9.62  |
| 32   | Finland                    | 3.20  | 50.95  | 95   | Nepal                 | 0.60  | 9.30  |
| 33   | Croatia                    | 3.13  | 49.83  | 96   | Laos                  | 0.49  | 7.58  |
| 34   | Hungary                    | 3.09  | 49.30  | 97   | Bangladesh            | 0.47  | 7.28  |
| 35   | New Zealand                | 3.06  | 48.79  | 98   | Thailand              | 0.47  | 7.25  |
| 36   | Belgium                    | 3.01  | 47.99  | 99   | Honduras              | 0.39  | 5.96  |
| 37   | Ukraine                    | 3.00  | 47.81  | 100  | Botswana              | 0.38  | 5.87  |
| 38   | Ireland                    | 2.96  | 47.19  | 101  | Bhutan                | 0.38  | 5.82  |
| 39   | Luxembourg                 | 2.92  | 46.54  | 102  | Nigeria               | 0.38  | 5.74  |
| 40   | United Kingdom             | 2.83  | 45.01  | 103  | Namibia               | 0.37  | 5.68  |
| 41   | Slovenia                   | 2.82  | 44.93  | 104  | Yemen                 | 0.31  | 4.70  |
| 42   | Armenia                    | 2.80  | 44.65  | 105  | Kenya                 | 0.20  | 2.98  |
| 43   | Romania                    | 2.67  | 42.50  | 106  | Indonesia             | 0.20  | 2.93  |
| 44   | Kuwait                     | 2.61  | 41.53  | 107  | Cambodia              | 0.14  | 2.00  |
| 45   | Saudi Arabia               | 2.57  | 40.89  | 107  | Madagascar            | 0.14  | 2.00  |
| 45   | United States of America   | 2.57  | 40.89  | 109  | Gambia                | 0.11  | 1.43  |
| 47   | Canada                     | 2.54  | 40.42  | 110  | Ghana                 | 0.10  | 1.25  |
| 48   | Cyprus                     | 2.50  | 39.73  | 111  | Uganda                | 0.09  | 1.20  |
| 49   | Serbia                     | 2.46  | 39.20  | 112  | Congo, Dem. Rep.      | 0.09  | 1.17  |
| 50   | Lebanon                    | 2.38  | 37.87  | 112  | Zambia                | 0.09  | 1.17  |
| 51   | Japan                      | 2.37  | 37.66  | 114  | Mali                  | 0.09  | 1.07  |
| 52   | Montenegro                 | 2.34  | 37.28  | 115  | Cameroon              | 0.08  | 1.04  |
| 53   | Korea, Rep.                | 2.33  | 37.00  | 116  | Zimbabwe              | 0.08  | 0.95  |
| 54   | Poland                     | 2.29  | 36.43  | 117  | Senegal               | 0.07  | 0.80  |
| 55   | Singapore                  | 2.28  | 36.20  | 118  | Rwanda                | 0.06  | 0.74  |
| 56   | Mexico                     | 2.23  | 35.48  | 119  | Mozambique            | 0.06  | 0.59  |
| 57   | Mauritius                  | 2.00  | 31.83  | 120  | Lesotho               | 0.05  | 0.46  |
| 58   | Qatar                      | 1.96  | 31.20  | 121  | Burundi               | 0.03  | 0.13  |
| 59   | Venezuela, Bolivarian Rep. | 1.93  | 30.58  | 122  | Ethiopia              | 0.03  | 0.11  |
| 60   | El Salvador                | 1.92  | 30.53  | 123  | Liberia               | 0.02  | 0.08  |
| 61   | Oman                       | 1.92  | 30.42  | 124  | Tanzania, United Rep. | 0.02  | 0.06  |
| 62   | Bosnia and Herzegovina     | 1.89  | 29.95  | 125  | Malawi                | 0.02  | 0.00  |
| 63   | Kyrgyzstan                 | 1.85  | 29.44  |      |                       |       |       |

**SOURCE:** World Bank, World Development Indicators based on World Health Organization, Global Atlas of the Health Workforce (<http://data.worldbank.org/data-catalog/world-development-indicators>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 4.2.4 Sanitation

### Population with access to improved sanitation facilities (%) | 2016

| Rank | Country                    | Value  | Score  | Rank | Country               | Value | Score |
|------|----------------------------|--------|--------|------|-----------------------|-------|-------|
| 1    | Australia                  | 100.00 | 100.00 | 62   | Mauritius             | 93.00 | 92.47 |
| 1    | Austria                    | 100.00 | 100.00 | 62   | Tunisia               | 93.00 | 92.47 |
| 1    | Bahrain                    | 100.00 | 100.00 | 66   | Armenia               | 92.00 | 91.40 |
| 1    | Chile                      | 100.00 | 100.00 | 66   | Ireland               | 92.00 | 91.40 |
| 1    | Denmark                    | 100.00 | 100.00 | 66   | Trinidad and Tobago   | 92.00 | 91.40 |
| 1    | Estonia                    | 100.00 | 100.00 | 69   | El Salvador           | 91.00 | 90.32 |
| 1    | Israel                     | 100.00 | 100.00 | 69   | Paraguay              | 91.00 | 90.32 |
| 1    | Japan                      | 100.00 | 100.00 | 71   | Azerbaijan            | 89.00 | 88.17 |
| 1    | Korea, Rep.                | 100.00 | 100.00 | 71   | Mexico                | 89.00 | 88.17 |
| 1    | Kuwait                     | 100.00 | 100.00 | 71   | Russian Federation    | 89.00 | 88.17 |
| 1    | Malaysia                   | 100.00 | 100.00 | 74   | Iran, Islamic Rep.    | 88.00 | 87.10 |
| 1    | Malta                      | 100.00 | 100.00 | 75   | Algeria               | 87.00 | 86.02 |
| 1    | New Zealand                | 100.00 | 100.00 | 76   | Brazil                | 86.00 | 84.95 |
| 1    | Qatar                      | 100.00 | 100.00 | 76   | Bulgaria              | 86.00 | 84.95 |
| 1    | Saudi Arabia               | 100.00 | 100.00 | 76   | Ecuador               | 86.00 | 84.95 |
| 1    | Singapore                  | 100.00 | 100.00 | 79   | Georgia               | 85.00 | 83.87 |
| 1    | Spain                      | 100.00 | 100.00 | 80   | Colombia              | 84.00 | 82.80 |
| 1    | Switzerland                | 100.00 | 100.00 | 81   | Dominican Republic    | 83.00 | 81.72 |
| 1    | United Arab Emirates       | 100.00 | 100.00 | 81   | Morocco               | 83.00 | 81.72 |
| 1    | United States of America   | 100.00 | 100.00 | 83   | Romania               | 82.00 | 80.65 |
| 21   | Belgium                    | 99.00  | 98.92  | 84   | Honduras              | 80.00 | 78.49 |
| 21   | Canada                     | 99.00  | 98.92  | 85   | Moldova, Rep.         | 78.00 | 76.34 |
| 21   | Cyprus                     | 99.00  | 98.92  | 85   | Viet Nam              | 78.00 | 76.34 |
| 21   | Czech Republic             | 99.00  | 98.92  | 87   | Panama                | 77.00 | 75.27 |
| 21   | Finland                    | 99.00  | 98.92  | 87   | Peru                  | 77.00 | 75.27 |
| 21   | France                     | 99.00  | 98.92  | 89   | Nicaragua             | 76.00 | 74.19 |
| 21   | Germany                    | 99.00  | 98.92  | 90   | China                 | 75.00 | 73.12 |
| 21   | Greece                     | 99.00  | 98.92  | 90   | Philippines           | 75.00 | 73.12 |
| 21   | Iceland                    | 99.00  | 98.92  | 92   | Laos                  | 73.00 | 70.97 |
| 21   | Italy                      | 99.00  | 98.92  | 92   | South Africa          | 73.00 | 70.97 |
| 21   | Oman                       | 99.00  | 98.92  | 94   | Indonesia             | 68.00 | 65.59 |
| 21   | Portugal                   | 99.00  | 98.92  | 95   | Guatemala             | 67.00 | 64.52 |
| 21   | Slovakia                   | 99.00  | 98.92  | 96   | Bhutan                | 63.00 | 60.22 |
| 21   | Slovenia                   | 99.00  | 98.92  | 97   | Rwanda                | 62.00 | 59.14 |
| 21   | Sweden                     | 99.00  | 98.92  | 98   | Botswana              | 60.00 | 56.99 |
| 21   | United Kingdom             | 99.00  | 98.92  | 98   | Yemen                 | 60.00 | 56.99 |
| 37   | Albania                    | 98.00  | 97.85  | 100  | Mongolia              | 59.00 | 55.91 |
| 37   | Hungary                    | 98.00  | 97.85  | 101  | Pakistan              | 58.00 | 54.84 |
| 37   | Kazakhstan                 | 98.00  | 97.85  | 102  | Burundi               | 50.00 | 46.24 |
| 37   | Luxembourg                 | 98.00  | 97.85  | 103  | Cambodia              | 49.00 | 45.16 |
| 37   | Netherlands                | 98.00  | 97.85  | 104  | Senegal               | 48.00 | 44.09 |
| 37   | Norway                     | 98.00  | 97.85  | 105  | Bangladesh            | 47.00 | 43.01 |
| 37   | Poland                     | 98.00  | 97.85  | 106  | Nepal                 | 46.00 | 41.94 |
| 44   | Costa Rica                 | 97.00  | 96.77  | 107  | India                 | 44.00 | 39.78 |
| 44   | Croatia                    | 97.00  | 96.77  | 107  | Lesotho               | 44.00 | 39.78 |
| 44   | Jordan                     | 97.00  | 96.77  | 107  | Malawi                | 44.00 | 39.78 |
| 44   | Kyrgyzstan                 | 97.00  | 96.77  | 110  | Gambia                | 42.00 | 37.63 |
| 48   | Brunei Darussalam          | 96.00  | 95.70  | 111  | Cameroon              | 39.00 | 34.41 |
| 48   | Montenegro                 | 96.00  | 95.70  | 111  | Zimbabwe              | 39.00 | 34.41 |
| 48   | Turkey                     | 96.00  | 95.70  | 113  | Namibia               | 34.00 | 29.03 |
| 48   | Ukraine                    | 96.00  | 95.70  | 114  | Nigeria               | 33.00 | 27.96 |
| 48   | Uruguay                    | 96.00  | 95.70  | 115  | Mali                  | 31.00 | 25.81 |
| 53   | Argentina                  | 95.00  | 94.62  | 115  | Zambia                | 31.00 | 25.81 |
| 53   | Bosnia and Herzegovina     | 95.00  | 94.62  | 117  | Kenya                 | 30.00 | 24.73 |
| 53   | Lebanon                    | 95.00  | 94.62  | 118  | Mozambique            | 24.00 | 18.28 |
| 53   | Serbia                     | 95.00  | 94.62  | 118  | Tanzania, United Rep. | 24.00 | 18.28 |
| 53   | Tajikistan                 | 95.00  | 94.62  | 120  | Congo, Dem. Rep.      | 20.00 | 13.98 |
| 53   | Thailand                   | 95.00  | 94.62  | 121  | Uganda                | 19.00 | 12.90 |
| 53   | Venezuela, Bolivarian Rep. | 95.00  | 94.62  | 122  | Liberia               | 17.00 | 10.75 |
| 60   | Lithuania                  | 94.00  | 93.55  | 123  | Ghana                 | 14.00 | 7.53  |
| 60   | Sri Lanka                  | 94.00  | 93.55  | 124  | Madagascar            | 10.00 | 3.23  |
| 62   | Egypt                      | 93.00  | 92.47  | 125  | Ethiopia              | 7.00  | 0.00  |
| 62   | Latvia                     | 93.00  | 92.47  |      |                       |       |       |

**SOURCE:** World Bank, World Development Indicators based on WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply, Sanitation and Hygiene (<http://data.worldbank.org/data-catalog/world-development-indicators>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.



# Pillar 5

## Vocational and Technical Skills

## 5.1.1 Workforce with secondary education

### Labour force with secondary education (%) | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Kyrgyzstan               | 73.92 | 100.00 | 64   | El Salvador                | 32.28 | 42.09 |
| 2    | Slovakia                 | 71.66 | 96.86  | 65   | Malta                      | 31.84 | 41.47 |
| 3    | Czech Republic           | 71.48 | 96.61  | 66   | Luxembourg                 | 31.65 | 41.21 |
| 4    | Bosnia and Herzegovina   | 67.94 | 91.68  | 67   | South Africa               | 31.23 | 40.63 |
| 5    | Azerbaijan               | 66.23 | 89.30  | 68   | Ecuador                    | 31.19 | 40.57 |
| 6    | Armenia                  | 65.77 | 88.66  | 69   | Singapore                  | 30.24 | 39.25 |
| 7    | Montenegro               | 65.60 | 88.43  | 70   | Colombia                   | 29.98 | 38.89 |
| 8    | Tajikistan               | 64.42 | 86.79  | 71   | United Arab Emirates       | 28.80 | 37.25 |
| 9    | Croatia                  | 62.90 | 84.67  | 72   | Indonesia                  | 28.64 | 37.02 |
| 10   | Georgia                  | 61.76 | 83.09  | 73   | Paraguay                   | 28.13 | 36.31 |
| 11   | Hungary                  | 61.58 | 82.84  | 74   | Portugal                   | 27.13 | 34.92 |
| 12   | Poland                   | 61.52 | 82.75  | 75   | Lesotho                    | 26.65 | 34.26 |
| 13   | Romania                  | 59.19 | 79.51  | 76   | Canada                     | 25.83 | 33.12 |
| 14   | Germany                  | 58.17 | 78.09  | 77   | Qatar                      | 25.79 | 33.06 |
| 15   | Bulgaria                 | 57.23 | 76.79  | 78   | Venezuela, Bolivarian Rep. | 25.53 | 32.70 |
| 16   | Slovenia                 | 56.48 | 75.74  | 79   | Spain                      | 23.88 | 30.40 |
| 17   | United States of America | 56.46 | 75.72  | 80   | Yemen                      | 22.95 | 29.11 |
| 18   | Latvia                   | 56.12 | 75.24  | 81   | Mexico                     | 22.77 | 28.86 |
| 19   | Brunei Darussalam        | 53.92 | 72.18  | 82   | Honduras                   | 21.30 | 26.82 |
| 20   | Lithuania                | 53.24 | 71.24  | 83   | Thailand                   | 21.29 | 26.80 |
| 21   | Peru                     | 53.06 | 70.99  | 84   | Turkey                     | 20.85 | 26.19 |
| 22   | Austria                  | 52.67 | 70.45  | 85   | Morocco                    | 20.75 | 26.05 |
| 23   | Chile                    | 52.05 | 69.58  | 86   | Kuwait                     | 20.72 | 26.01 |
| 24   | Japan                    | 51.71 | 69.11  | 87   | Costa Rica                 | 20.02 | 25.03 |
| 25   | New Zealand              | 51.00 | 68.12  | 88   | Viet Nam                   | 19.71 | 24.60 |
| 26   | Estonia                  | 50.65 | 67.64  | 89   | Nicaragua                  | 19.56 | 24.39 |
| 27   | Trinidad and Tobago      | 49.84 | 66.51  | 90   | Pakistan                   | 19.27 | 23.99 |
| 28   | Mongolia                 | 48.50 | 64.65  | 91   | Namibia                    | 19.24 | 23.95 |
| 29   | Italy                    | 46.82 | 62.31  | 92   | Lebanon                    | 18.14 | 22.42 |
| 30   | Finland                  | 46.52 | 61.89  | 93   | Botswana                   | 17.45 | 21.46 |
| 31   | Switzerland              | 45.69 | 60.74  | 94   | Liberia                    | 17.10 | 20.97 |
| 32   | Ukraine                  | 45.50 | 60.47  | 95   | Sri Lanka                  | 16.42 | 20.03 |
| 33   | Sweden                   | 44.96 | 59.72  | 96   | Ghana                      | 16.13 | 19.62 |
| 34   | Russian Federation       | 44.80 | 59.50  | 97   | Bhutan                     | 15.94 | 19.36 |
| 35   | France                   | 44.36 | 58.89  | 98   | Bangladesh                 | 14.96 | 18.00 |
| 36   | Panama                   | 44.09 | 58.51  | 99   | Guatemala                  | 14.87 | 17.87 |
| 37   | Malaysia                 | 43.75 | 58.04  | 100  | Nepal                      | 12.62 | 14.74 |
| 38   | Greece                   | 42.99 | 56.98  | 101  | Gambia                     | 12.31 | 14.31 |
| 39   | Israel                   | 42.66 | 56.52  | 102  | Uruguay                    | 12.21 | 14.17 |
| 40   | Brazil                   | 42.45 | 56.23  | 103  | Laos                       | 11.12 | 12.66 |
| 41   | Netherlands              | 41.72 | 55.22  | 104  | Bahrain                    | 9.57  | 10.50 |
| 42   | Denmark                  | 41.33 | 54.67  | 105  | Malawi                     | 8.93  | 9.61  |
| 43   | United Kingdom           | 40.59 | 53.64  | 106  | India                      | 8.53  | 9.05  |
| 44   | Australia                | 40.07 | 52.92  | 107  | Cambodia                   | 6.86  | 6.73  |
| 45   | Kazakhstan               | 39.97 | 52.78  | 108  | Senegal                    | 6.18  | 5.79  |
| 46   | Mauritius                | 39.89 | 52.67  | 109  | Cameroon                   | 5.86  | 5.34  |
| 47   | Belgium                  | 39.85 | 52.61  | 110  | Philippines                | 5.11  | 4.30  |
| 48   | Norway                   | 39.69 | 52.39  | 111  | Rwanda                     | 5.10  | 4.28  |
| 49   | Egypt                    | 39.21 | 51.72  | 112  | Ethiopia                   | 4.54  | 3.50  |
| 50   | Korea, Rep.              | 39.03 | 51.47  | 113  | Tanzania, United Rep.      | 3.97  | 2.71  |
| 51   | Tunisia                  | 39.00 | 51.43  | 114  | Mali                       | 3.49  | 2.04  |
| 52   | Iceland                  | 38.27 | 50.42  | 115  | Uganda                     | 2.14  | 0.17  |
| 53   | Congo, Dem. Rep.         | 38.03 | 50.08  | 116  | Zimbabwe                   | 2.02  | 0.00  |
| 54   | Cyprus                   | 37.89 | 49.89  |      | Burundi                    | n/a   | n/a   |
| 55   | Ireland                  | 37.44 | 49.26  |      | China                      | n/a   | n/a   |
| 56   | Albania                  | 37.18 | 48.90  |      | Iran, Islamic Rep.         | n/a   | n/a   |
| 56   | Argentina                | 37.18 | 48.90  |      | Jordan                     | n/a   | n/a   |
| 58   | Algeria                  | 36.51 | 47.97  |      | Kenya                      | n/a   | n/a   |
| 59   | Dominican Republic       | 36.47 | 47.91  |      | Mozambique                 | n/a   | n/a   |
| 60   | Moldova, Rep.            | 35.35 | 46.36  |      | Nigeria                    | n/a   | n/a   |
| 61   | Serbia                   | 35.29 | 46.27  |      | Oman                       | n/a   | n/a   |
| 62   | Madagascar               | 33.64 | 43.98  |      | Zambia                     | n/a   | n/a   |
| 63   | Saudi Arabia             | 33.41 | 43.66  |      |                            |       |       |

**SOURCE:** International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 5.1.2 Population with secondary education

### Population with secondary education (%) | 2016

| Rank | Country                    | Value | Score  | Rank | Country               | Value | Score |
|------|----------------------------|-------|--------|------|-----------------------|-------|-------|
| 1    | Czech Republic             | 70.20 | 100.00 | 64   | Dominican Republic    | 22.50 | 31.95 |
| 2    | Slovakia                   | 66.10 | 94.15  | 65   | Russian Federation    | 21.90 | 31.10 |
| 3    | Kyrgyzstan                 | 61.50 | 87.59  | 66   | Panama                | 20.10 | 28.53 |
| 4    | Azerbaijan                 | 58.60 | 83.45  | 67   | Qatar                 | 19.40 | 27.53 |
| 5    | Poland                     | 56.40 | 80.31  | 68   | Pakistan              | 19.00 | 26.96 |
| 6    | Slovenia                   | 55.30 | 78.74  | 69   | Singapore             | 18.90 | 26.82 |
| 7    | Montenegro                 | 52.90 | 75.32  | 70   | Spain                 | 18.60 | 26.39 |
| 8    | Croatia                    | 52.30 | 74.47  | 71   | Turkey                | 18.20 | 25.82 |
| 9    | Estonia                    | 52.10 | 74.18  | 72   | Congo, Dem. Rep.      | 18.10 | 25.68 |
| 10   | Latvia                     | 51.00 | 72.61  | 73   | Lebanon               | 17.50 | 24.82 |
| 11   | Bulgaria                   | 50.40 | 71.75  | 74   | Algeria               | 17.30 | 24.54 |
| 12   | Austria                    | 49.90 | 71.04  | 75   | Mexico                | 17.00 | 24.11 |
| 13   | Bosnia and Herzegovina     | 49.40 | 70.33  | 76   | El Salvador           | 16.80 | 23.82 |
| 14   | Serbia                     | 49.20 | 70.04  | 76   | India                 | 16.80 | 23.82 |
| 15   | Germany                    | 48.60 | 69.19  | 78   | Portugal              | 16.70 | 23.68 |
| 16   | South Africa               | 48.50 | 69.04  | 79   | Guatemala             | 16.30 | 23.11 |
| 17   | Switzerland                | 48.10 | 68.47  | 79   | Uruguay               | 16.30 | 23.11 |
| 18   | Romania                    | 46.90 | 66.76  | 81   | Costa Rica            | 16.00 | 22.68 |
| 19   | Hungary                    | 46.40 | 66.05  | 82   | Nepal                 | 15.20 | 21.54 |
| 20   | United States of America   | 46.10 | 65.62  | 83   | Jordan                | 14.20 | 20.11 |
| 21   | Georgia                    | 45.10 | 64.19  | 84   | Kenya                 | 13.90 | 19.69 |
| 22   | Sri Lanka                  | 44.40 | 63.20  | 85   | Viet Nam              | 13.60 | 19.26 |
| 23   | Denmark                    | 42.20 | 60.06  | 86   | China                 | 13.50 | 19.12 |
| 24   | Moldova, Rep.              | 41.70 | 59.34  | 86   | Kuwait                | 13.50 | 19.12 |
| 25   | Armenia                    | 41.30 | 58.77  | 86   | Thailand              | 13.50 | 19.12 |
| 26   | Japan                      | 39.90 | 56.78  | 89   | Honduras              | 13.20 | 18.69 |
| 27   | France                     | 38.80 | 55.21  | 90   | Malta                 | 12.80 | 18.12 |
| 28   | Finland                    | 38.70 | 55.06  | 91   | Trinidad and Tobago   | 12.70 | 17.97 |
| 29   | Norway                     | 38.10 | 54.21  | 92   | Ghana                 | 9.20  | 12.98 |
| 30   | Netherlands                | 37.90 | 53.92  | 93   | Lesotho               | 8.50  | 11.98 |
| 31   | Korea, Rep.                | 37.40 | 53.21  | 94   | Cameroon              | 4.70  | 6.56  |
| 32   | Sweden                     | 37.20 | 52.92  | 94   | Rwanda                | 4.70  | 6.56  |
| 33   | Chile                      | 35.50 | 50.50  | 96   | Cambodia              | 4.20  | 5.85  |
| 34   | Peru                       | 35.10 | 49.93  | 97   | Mali                  | 4.00  | 5.56  |
| 35   | Malaysia                   | 34.50 | 49.07  | 97   | Senegal               | 4.00  | 5.56  |
| 36   | Israel                     | 34.30 | 48.79  | 99   | Ethiopia              | 2.90  | 3.99  |
| 37   | Italy                      | 34.20 | 48.64  | 100  | Mozambique            | 2.40  | 3.28  |
| 38   | Belgium                    | 32.90 | 46.79  | 101  | Zimbabwe              | 2.10  | 2.85  |
| 39   | Albania                    | 32.40 | 46.08  | 102  | Bahrain               | 2.00  | 2.71  |
| 40   | Cyprus                     | 32.20 | 45.79  | 102  | Burundi               | 2.00  | 2.71  |
| 40   | Lithuania                  | 32.20 | 45.79  | 104  | Uganda                | 1.70  | 2.28  |
| 42   | Mongolia                   | 32.00 | 45.51  | 105  | Tanzania, United Rep. | 0.80  | 1.00  |
| 43   | Luxembourg                 | 30.90 | 43.94  | 106  | Bhutan                | 0.10  | 0.00  |
| 44   | Mauritius                  | 30.50 | 43.37  | 104  | Argentina             | 0.10  | 0.00  |
| 45   | Kazakhstan                 | 30.4  | 43.22  |      | Bangladesh            | n/a   | n/a   |
| 46   | United Kingdom             | 29.70 | 42.23  |      | Botswana              | n/a   | n/a   |
| 47   | Brazil                     | 29.40 | 41.80  |      | Brunei Darussalam     | n/a   | n/a   |
| 48   | Australia                  | 29.30 | 41.65  |      | Gambia                | n/a   | n/a   |
| 49   | Oman                       | 29.10 | 41.37  |      | Iceland               | n/a   | n/a   |
| 50   | Ecuador                    | 28.70 | 40.80  |      | Laos                  | n/a   | n/a   |
| 51   | Tunisia                    | 27.50 | 39.09  |      | Liberia               | n/a   | n/a   |
| 52   | Greece                     | 27.40 | 38.94  |      | Madagascar            | n/a   | n/a   |
| 53   | Ireland                    | 27.20 | 38.66  |      | Malawi                | n/a   | n/a   |
| 54   | Colombia                   | 25.80 | 36.66  |      | Morocco               | n/a   | n/a   |
| 55   | Philippines                | 25.60 | 36.38  |      | Namibia               | n/a   | n/a   |
| 56   | Iran, Islamic Rep.         | 25.20 | 35.81  |      | Nicaragua             | n/a   | n/a   |
| 57   | New Zealand                | 25.10 | 35.66  |      | Nigeria               | n/a   | n/a   |
| 58   | Venezuela, Bolivarian Rep. | 24.90 | 35.38  |      | Tajikistan            | n/a   | n/a   |
| 59   | Egypt                      | 24.00 | 34.09  |      | Ukraine               | n/a   | n/a   |
| 60   | Paraguay                   | 23.90 | 33.95  |      | United Arab Emirates  | n/a   | n/a   |
| 61   | Canada                     | 23.10 | 32.81  |      | Yemen                 | n/a   | n/a   |
| 62   | Indonesia                  | 23.00 | 32.67  |      | Zambia                | n/a   | n/a   |
| 62   | Saudi Arabia               | 23.00 | 32.67  |      |                       |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 5.1.3 Technicians and associate professionals

### Technicians and associate professionals (%) | 2017

| Rank | Country                     | Value | Score  | Rank | Country                        | Value | Score |
|------|-----------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Japan.....                  | 22.60 | 100.00 | 64   | Tunisia.....                   | 7.60  | 33.04 |
| 2    | Germany.....                | 22.30 | 98.66  | 65   | Argentina.....                 | 7.50  | 32.59 |
| 3    | Nigeria.....                | 21.10 | 93.30  | 66   | Kuwait.....                    | 7.40  | 32.14 |
| 4    | Singapore.....              | 20.00 | 88.39  | 66   | Uruguay.....                   | 7.40  | 32.14 |
| 5    | France.....                 | 19.90 | 87.95  | 68   | Paraguay.....                  | 7.30  | 31.70 |
| 6    | Austria.....                | 19.30 | 85.27  | 68   | Venezuela, Bolivarian Rep..... | 7.30  | 31.70 |
| 7    | Switzerland.....            | 19.20 | 84.82  | 70   | Mexico.....                    | 7.10  | 30.80 |
| 8    | Finland.....                | 19.00 | 83.93  | 71   | Honduras.....                  | 6.90  | 29.91 |
| 9    | Sweden.....                 | 18.50 | 81.70  | 72   | Qatar.....                     | 6.70  | 29.02 |
| 10   | Denmark.....                | 17.90 | 79.02  | 73   | Nicaragua.....                 | 6.60  | 28.57 |
| 11   | Italy.....                  | 17.50 | 77.23  | 74   | Dominican Republic.....        | 6.40  | 27.68 |
| 12   | Czech Republic.....         | 17.20 | 75.89  | 75   | Moldova, Rep.....              | 6.30  | 27.23 |
| 12   | Luxembourg.....             | 17.20 | 75.89  | 76   | Bahrain.....                   | 6.20  | 26.79 |
| 14   | Canada.....                 | 16.80 | 74.11  | 77   | Romania.....                   | 6.00  | 25.89 |
| 15   | Norway.....                 | 16.50 | 72.77  | 78   | Georgia.....                   | 5.90  | 25.45 |
| 16   | Brunei Darussalam.....      | 16.20 | 71.43  | 78   | Sri Lanka.....                 | 5.90  | 25.45 |
| 17   | Netherlands.....            | 15.70 | 69.20  | 80   | Tajikistan.....                | 5.80  | 25.00 |
| 18   | Slovakia.....               | 15.10 | 66.52  | 80   | Turkey.....                    | 5.80  | 25.00 |
| 19   | Hungary.....                | 15.00 | 66.07  | 82   | Namibia.....                   | 5.70  | 24.55 |
| 19   | Malta.....                  | 15.00 | 66.07  | 83   | Congo, Dem. Rep.....           | 5.60  | 24.11 |
| 21   | Iceland.....                | 14.80 | 65.18  | 84   | Iran, Islamic Rep.....         | 5.10  | 21.88 |
| 22   | Croatia.....                | 14.50 | 63.84  | 85   | Ecuador.....                   | 4.60  | 19.64 |
| 23   | Latvia.....                 | 14.20 | 62.50  | 86   | Thailand.....                  | 4.50  | 19.20 |
| 24   | Belgium.....                | 13.60 | 59.82  | 87   | Morocco.....                   | 4.40  | 18.75 |
| 25   | Slovenia.....               | 13.50 | 59.38  | 88   | Albania.....                   | 4.20  | 17.86 |
| 26   | Estonia.....                | 13.40 | 58.93  | 88   | Lesotho.....                   | 4.20  | 17.86 |
| 27   | Cyprus.....                 | 13.10 | 57.59  | 90   | Algeria.....                   | 4.00  | 16.96 |
| 27   | Israel.....                 | 13.10 | 57.59  | 91   | El Salvador.....               | 3.80  | 16.07 |
| 29   | Australia.....              | 13.00 | 57.14  | 92   | Cambodia.....                  | 3.70  | 15.63 |
| 29   | Russian Federation.....     | 13.00 | 57.14  | 93   | Bhutan.....                    | 3.60  | 15.18 |
| 31   | Peru.....                   | 12.80 | 56.25  | 94   | Yemen.....                     | 3.50  | 14.73 |
| 32   | Poland.....                 | 12.70 | 55.80  | 95   | India.....                     | 3.30  | 13.84 |
| 33   | United Kingdom.....         | 12.50 | 54.91  | 95   | Philippines.....               | 3.30  | 13.84 |
| 34   | New Zealand.....            | 12.40 | 54.46  | 97   | Pakistan.....                  | 3.10  | 12.95 |
| 35   | Chile.....                  | 11.90 | 52.23  | 97   | Viet Nam.....                  | 3.10  | 12.95 |
| 36   | Trinidad and Tobago.....    | 11.80 | 51.79  | 99   | Guatemala.....                 | 2.90  | 12.05 |
| 37   | Ukraine.....                | 11.70 | 51.34  | 99   | Indonesia.....                 | 2.90  | 12.05 |
| 38   | Saudi Arabia.....           | 11.60 | 50.89  | 101  | Mongolia.....                  | 2.50  | 10.27 |
| 38   | Serbia.....                 | 11.60 | 50.89  | 102  | Burundi.....                   | 2.20  | 8.93  |
| 40   | Portugal.....               | 11.50 | 50.45  | 102  | Ghana.....                     | 2.20  | 8.93  |
| 41   | Ireland.....                | 11.30 | 49.55  | 102  | Uganda.....                    | 2.20  | 8.93  |
| 41   | Kazakhstan.....             | 11.30 | 49.55  | 105  | Tanzania, United Rep.....      | 2.10  | 8.48  |
| 43   | Costa Rica.....             | 11.20 | 49.11  | 106  | Bangladesh.....                | 1.90  | 7.59  |
| 43   | Spain.....                  | 11.20 | 49.11  | 106  | Nepal.....                     | 1.90  | 7.59  |
| 45   | Mauritius.....              | 11.1  | 48.66  | 106  | Zambia.....                    | 1.90  | 7.59  |
| 45   | Montenegro.....             | 11.10 | 48.66  | 109  | Liberia.....                   | 1.80  | 7.14  |
| 47   | South Africa.....           | 10.70 | 46.88  | 110  | Zimbabwe.....                  | 1.60  | 6.25  |
| 48   | Malaysia.....               | 10.30 | 45.09  | 111  | Gambia.....                    | 1.50  | 5.80  |
| 48   | Oman.....                   | 10.30 | 45.09  | 111  | Mozambique.....                | 1.50  | 5.80  |
| 50   | Lebanon.....                | 9.70  | 42.41  | 111  | Senegal.....                   | 1.50  | 5.80  |
| 50   | United Arab Emirates.....   | 9.70  | 42.41  | 114  | Ethiopia.....                  | 1.30  | 4.91  |
| 52   | Armenia.....                | 9.60  | 41.96  | 114  | Laos.....                      | 1.30  | 4.91  |
| 52   | Bosnia and Herzegovina..... | 9.60  | 41.96  | 116  | Mali.....                      | 1.00  | 3.57  |
| 54   | Bulgaria.....               | 9.50  | 41.52  | 117  | Madagascar.....                | 0.90  | 3.13  |
| 54   | Lithuania.....              | 9.50  | 41.52  | 118  | Rwanda.....                    | 0.60  | 1.79  |
| 56   | Azerbaijan.....             | 9.40  | 41.07  | 119  | Malawi.....                    | 0.20  | 0.00  |
| 57   | Egypt.....                  | 8.90  | 38.84  |      | Cameroon.....                  | n/a   | n/a   |
| 58   | Colombia.....               | 8.80  | 38.39  |      | China.....                     | n/a   | n/a   |
| 59   | Panama.....                 | 8.30  | 36.16  |      | Jordan.....                    | n/a   | n/a   |
| 60   | Brazil.....                 | 8.10  | 35.27  |      | Kenya.....                     | n/a   | n/a   |
| 61   | Greece.....                 | 7.90  | 34.38  |      | Korea, Rep.....                | n/a   | n/a   |
| 62   | Botswana.....               | 7.80  | 33.93  |      | United States of America.....  | n/a   | n/a   |
| 63   | Kyrgyzstan.....             | 7.70  | 33.48  |      |                                |       |       |

**SOURCE:** International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

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## 5.1.4 Labour productivity per employee

### Labour productivity per person employed (2017 US\$) | 2018

| Rank | Country                  | Value     | Score  | Rank | Country                    | Value    | Score |
|------|--------------------------|-----------|--------|------|----------------------------|----------|-------|
| 1    | United Arab Emirates     | 179786.00 | 100.00 | 64   | Dominican Republic         | 38078.00 | 20.18 |
| 2    | Qatar                    | 156943.00 | 87.13  | 65   | Azerbaijan                 | 34485.00 | 18.16 |
| 3    | Saudi Arabia             | 144239.00 | 79.98  | 66   | Sri Lanka                  | 34465.00 | 18.15 |
| 4    | Kuwait                   | 144052.00 | 79.87  | 67   | Albania                    | 32742.00 | 17.18 |
| 5    | Luxembourg               | 143971.00 | 79.83  | 68   | Thailand                   | 32407.00 | 16.99 |
| 6    | Ireland                  | 142893.00 | 79.22  | 69   | Colombia                   | 31637.00 | 16.56 |
| 7    | Singapore                | 142823.00 | 79.18  | 70   | Brazil                     | 30887.00 | 16.13 |
| 8    | Norway                   | 134993.00 | 74.77  | 71   | China                      | 30686.00 | 16.02 |
| 9    | United States of America | 124442.00 | 68.83  | 72   | Venezuela, Bolivarian Rep. | 29118.00 | 15.14 |
| 10   | Belgium                  | 111024.00 | 61.27  | 73   | Indonesia                  | 26930.00 | 13.91 |
| 11   | Sweden                   | 103596.00 | 57.09  | 74   | Armenia                    | 26860.00 | 13.87 |
| 12   | Switzerland              | 102408.00 | 56.42  | 75   | Peru                       | 25794.00 | 13.27 |
| 13   | France                   | 101012.00 | 55.63  | 76   | Ecuador                    | 24102.00 | 12.31 |
| 14   | Australia                | 100925.00 | 55.58  | 77   | Morocco                    | 23161.00 | 11.78 |
| 15   | Netherlands              | 100126.00 | 55.13  | 78   | Ukraine                    | 22571.00 | 11.45 |
| 16   | Austria                  | 98541.00  | 54.24  | 79   | Georgia                    | 22246.00 | 11.27 |
| 17   | Denmark                  | 97380.00  | 53.59  | 80   | Philippines                | 21224.00 | 10.69 |
| 18   | Finland                  | 96021.00  | 52.82  | 81   | Guatemala                  | 20569.00 | 10.32 |
| 19   | Germany                  | 93464.00  | 51.38  | 82   | Pakistan                   | 18237.00 | 9.01  |
| 20   | Canada                   | 93070.00  | 51.16  | 83   | India                      | 17558.00 | 8.63  |
| 21   | Italy                    | 91427.00  | 50.23  | 84   | Nigeria                    | 17075.00 | 8.35  |
| 22   | Spain                    | 90391.00  | 49.65  | 85   | Moldova, Rep.              | 16346.00 | 7.94  |
| 23   | United Kingdom           | 89761.00  | 49.29  | 86   | Zambia                     | 13828.00 | 6.53  |
| 24   | Iceland                  | 88479.00  | 48.57  | 87   | Yemen                      | 12339.00 | 5.69  |
| 25   | Malta                    | 87762.00  | 48.17  | 88   | Viet Nam                   | 11928.00 | 5.46  |
| 26   | Bahrain                  | 83971.00  | 46.03  | 89   | Tajikistan                 | 11318.00 | 5.11  |
| 27   | Japan                    | 80302.00  | 43.97  | 90   | Bangladesh                 | 10619.00 | 4.72  |
| 28   | Cyprus                   | 80115.00  | 43.86  | 91   | Ghana                      | 9612.00  | 4.15  |
| 29   | Israel                   | 76222.00  | 41.67  | 92   | Kyrgyzstan                 | 9463.00  | 4.07  |
| 30   | Turkey                   | 76136.00  | 41.62  | 93   | Kenya                      | 8473.00  | 3.51  |
| 31   | Korea, Rep.              | 75869.00  | 41.47  | 94   | Cameroon                   | 8088.00  | 3.29  |
| 32   | Slovakia                 | 75440.00  | 41.23  | 95   | Senegal                    | 8045.00  | 3.27  |
| 33   | Oman                     | 75093.00  | 41.03  | 96   | Cambodia                   | 6887.00  | 2.62  |
| 34   | New Zealand              | 73312.00  | 40.03  | 97   | Tanzania, United Rep.      | 6526.00  | 2.41  |
| 35   | Iran, Islamic Rep.       | 71677.00  | 39.11  | 98   | Mali                       | 6381.00  | 2.33  |
| 36   | Greece                   | 71656.00  | 39.10  | 99   | Uganda                     | 5708.00  | 1.95  |
| 37   | Slovenia                 | 71334.00  | 38.92  | 100  | Zimbabwe                   | 4302.00  | 1.16  |
| 38   | Czech Republic           | 70083.00  | 38.21  | 101  | Mozambique                 | 3866.00  | 0.91  |
| 39   | Trinidad and Tobago      | 69359.00  | 37.80  | 102  | Ethiopia                   | 3456.00  | 0.68  |
| 40   | Poland                   | 68340.00  | 37.23  | 103  | Madagascar                 | 3088.00  | 0.48  |
| 41   | Lithuania                | 66873.00  | 36.40  | 104  | Malawi                     | 2918.00  | 0.38  |
| 42   | Portugal                 | 64789.00  | 35.23  | 105  | Congo, Dem. Rep.           | 2242.00  | 0.00  |
| 43   | Croatia                  | 64135.00  | 34.86  |      | Bhutan                     | n/a      | n/a   |
| 44   | Malaysia                 | 64061.00  | 34.82  |      | Botswana                   | n/a      | n/a   |
| 45   | Estonia                  | 64028.00  | 34.80  |      | Brunei Darussalam          | n/a      | n/a   |
| 46   | Hungary                  | 63403.00  | 34.45  |      | Burundi                    | n/a      | n/a   |
| 47   | Latvia                   | 59800.00  | 32.42  |      | El Salvador                | n/a      | n/a   |
| 48   | Russian Federation       | 57520.00  | 31.13  |      | Gambia                     | n/a      | n/a   |
| 49   | Algeria                  | 57491.00  | 31.12  |      | Honduras                   | n/a      | n/a   |
| 50   | Kazakhstan               | 55283.00  | 29.87  |      | Laos                       | n/a      | n/a   |
| 51   | Romania                  | 55043.00  | 29.74  |      | Lebanon                    | n/a      | n/a   |
| 52   | Chile                    | 54400.00  | 29.38  |      | Lesotho                    | n/a      | n/a   |
| 53   | Bosnia and Herzegovina   | 54169.00  | 29.25  |      | Liberia                    | n/a      | n/a   |
| 54   | Uruguay                  | 47105.00  | 25.27  |      | Mauritius                  | n/a      | n/a   |
| 55   | Argentina                | 45750.00  | 24.51  |      | Mongolia                   | n/a      | n/a   |
| 56   | Mexico                   | 45651.00  | 24.45  |      | Montenegro                 | n/a      | n/a   |
| 57   | Egypt                    | 44304.00  | 23.69  |      | Namibia                    | n/a      | n/a   |
| 58   | Bulgaria                 | 44025.00  | 23.53  |      | Nepal                      | n/a      | n/a   |
| 59   | South Africa             | 43322.00  | 23.14  |      | Nicaragua                  | n/a      | n/a   |
| 60   | Jordan                   | 42499.00  | 22.67  |      | Panama                     | n/a      | n/a   |
| 61   | Costa Rica               | 41823.00  | 22.29  |      | Paraguay                   | n/a      | n/a   |
| 62   | Serbia                   | 41801.00  | 22.28  |      | Rwanda                     | n/a      | n/a   |
| 63   | Tunisia                  | 40087.00  | 21.32  |      |                            |          |       |

**SOURCE:** The Conference Board, Total Economy Database™ (Adjusted version) ([www.conference-board.org/data/economydatabase](http://www.conference-board.org/data/economydatabase))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 5.2.1 Ease of finding skilled employees

Average answer to the question: In your country, to what extent can companies find people with the skills required to fill their vacancies? [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | United States of America..... | 5.67  | 100.00 | 64   | Pakistan.....                  | 4.07  | 45.87 |
| 2    | Norway.....                   | 5.66  | 99.46  | 65   | Mauritius.....                 | 4.06  | 45.53 |
| 3    | Finland.....                  | 5.61  | 97.77  | 66   | Iran, Islamic Rep.....         | 4.05  | 45.13 |
| 4    | Israel.....                   | 5.52  | 94.72  | 67   | Kazakhstan.....                | 4.03  | 44.35 |
| 5    | United Arab Emirates.....     | 5.50  | 94.28  | 67   | Madagascar.....                | 4.03  | 44.35 |
| 6    | Switzerland.....              | 5.43  | 91.88  | 69   | Nigeria.....                   | 4.02  | 44.15 |
| 7    | Malaysia.....                 | 5.36  | 89.38  | 70   | Honduras.....                  | 4.01  | 43.74 |
| 8    | Germany.....                  | 5.33  | 88.26  | 71   | Uruguay.....                   | 4.00  | 43.34 |
| 9    | Iceland.....                  | 5.30  | 87.38  | 72   | Algeria.....                   | 3.98  | 42.90 |
| 10   | Canada.....                   | 5.30  | 87.25  | 73   | Tanzania, United Rep.....      | 3.96  | 42.15 |
| 11   | Netherlands.....              | 5.27  | 86.27  | 74   | Laos.....                      | 3.96  | 41.98 |
| 12   | Qatar.....                    | 5.23  | 84.98  | 75   | Malta.....                     | 3.92  | 40.66 |
| 13   | Ireland.....                  | 5.22  | 84.84  | 76   | Botswana.....                  | 3.92  | 40.60 |
| 14   | Costa Rica.....               | 5.14  | 82.00  | 77   | Ecuador.....                   | 3.89  | 39.61 |
| 15   | Singapore.....                | 5.10  | 80.75  | 78   | Estonia.....                   | 3.88  | 39.48 |
| 16   | Australia.....                | 5.03  | 78.35  | 79   | Albania.....                   | 3.88  | 39.31 |
| 17   | United Kingdom.....           | 4.98  | 76.49  | 80   | Tajikistan.....                | 3.87  | 38.97 |
| 18   | Austria.....                  | 4.97  | 76.32  | 81   | Thailand.....                  | 3.87  | 38.90 |
| 19   | France.....                   | 4.93  | 74.97  | 82   | Turkey.....                    | 3.86  | 38.60 |
| 19   | Sweden.....                   | 4.93  | 74.97  | 83   | Armenia.....                   | 3.82  | 37.31 |
| 21   | Chile.....                    | 4.93  | 74.86  | 84   | South Africa.....              | 3.81  | 37.01 |
| 22   | Denmark.....                  | 4.92  | 74.63  | 85   | Dominican Republic.....        | 3.81  | 36.84 |
| 23   | Lebanon.....                  | 4.92  | 74.53  | 86   | Bhutan.....                    | 3.80  | 36.77 |
| 24   | Kenya.....                    | 4.85  | 72.16  | 87   | Viet Nam.....                  | 3.80  | 36.64 |
| 25   | Belgium.....                  | 4.84  | 71.79  | 88   | Nepal.....                     | 3.79  | 36.33 |
| 26   | New Zealand.....              | 4.83  | 71.48  | 89   | Brunei Darussalam.....         | 3.76  | 35.35 |
| 27   | Portugal.....                 | 4.81  | 70.67  | 90   | Morocco.....                   | 3.73  | 34.40 |
| 28   | Cyprus.....                   | 4.78  | 69.65  | 91   | Kuwait.....                    | 3.73  | 34.37 |
| 29   | Korea, Rep.....               | 4.76  | 69.15  | 92   | Serbia.....                    | 3.73  | 34.30 |
| 30   | Azerbaijan.....               | 4.72  | 67.76  | 93   | Peru.....                      | 3.73  | 34.17 |
| 31   | Indonesia.....                | 4.70  | 67.22  | 94   | Latvia.....                    | 3.72  | 34.03 |
| 32   | Bahrain.....                  | 4.70  | 66.95  | 95   | Brazil.....                    | 3.72  | 34.00 |
| 33   | Senegal.....                  | 4.65  | 65.53  | 96   | Ethiopia.....                  | 3.69  | 32.95 |
| 34   | Zambia.....                   | 4.63  | 64.88  | 97   | Panama.....                    | 3.69  | 32.85 |
| 35   | Jordan.....                   | 4.63  | 64.61  | 98   | Montenegro.....                | 3.67  | 32.27 |
| 36   | Italy.....                    | 4.61  | 63.90  | 99   | Bangladesh.....                | 3.65  | 31.56 |
| 37   | China.....                    | 4.58  | 63.13  | 100  | Burundi.....                   | 3.63  | 30.85 |
| 38   | Spain.....                    | 4.54  | 61.84  | 101  | Egypt.....                     | 3.63  | 30.78 |
| 39   | Ukraine.....                  | 4.53  | 61.40  | 102  | Malawi.....                    | 3.61  | 30.35 |
| 40   | Japan.....                    | 4.53  | 61.33  | 103  | Kyrgyzstan.....                | 3.60  | 29.77 |
| 41   | Ghana.....                    | 4.51  | 60.76  | 104  | Croatia.....                   | 3.59  | 29.60 |
| 42   | Greece.....                   | 4.50  | 60.49  | 105  | Czech Republic.....            | 3.57  | 28.89 |
| 43   | Cameroon.....                 | 4.49  | 60.15  | 106  | El Salvador.....               | 3.57  | 28.72 |
| 44   | Philippines.....              | 4.46  | 59.10  | 107  | Liberia.....                   | 3.55  | 28.35 |
| 45   | Gambia.....                   | 4.46  | 59.00  | 108  | Oman.....                      | 3.54  | 27.91 |
| 46   | India.....                    | 4.46  | 58.83  | 109  | Namibia.....                   | 3.54  | 27.81 |
| 47   | Uganda.....                   | 4.43  | 57.95  | 110  | Venezuela, Bolivarian Rep..... | 3.47  | 25.37 |
| 48   | Guatemala.....                | 4.42  | 57.51  | 111  | Lithuania.....                 | 3.44  | 24.59 |
| 49   | Slovenia.....                 | 4.36  | 55.68  | 112  | Cambodia.....                  | 3.44  | 24.42 |
| 50   | Poland.....                   | 4.36  | 55.45  | 113  | Bosnia and Herzegovina.....    | 3.43  | 24.02 |
| 51   | Trinidad and Tobago.....      | 4.34  | 55.01  | 114  | Yemen.....                     | 3.41  | 23.48 |
| 52   | Argentina.....                | 4.34  | 54.87  | 115  | Slovakia.....                  | 3.41  | 23.34 |
| 52   | Rwanda.....                   | 4.34  | 54.87  | 116  | Nicaragua.....                 | 3.41  | 23.31 |
| 54   | Mexico.....                   | 4.33  | 54.67  | 117  | Georgia.....                   | 3.40  | 23.07 |
| 55   | Zimbabwe.....                 | 4.31  | 54.06  | 118  | Mozambique.....                | 3.34  | 21.04 |
| 56   | Mali.....                     | 4.29  | 53.32  | 119  | Moldova, Rep.....              | 3.30  | 19.59 |
| 57   | Congo, Dem. Rep.....          | 4.28  | 52.91  | 120  | Paraguay.....                  | 3.25  | 17.93 |
| 58   | Luxembourg.....               | 4.26  | 52.23  | 121  | Lesotho.....                   | 3.24  | 17.86 |
| 59   | Colombia.....                 | 4.25  | 52.03  | 122  | Romania.....                   | 3.23  | 17.46 |
| 60   | Russian Federation.....       | 4.24  | 51.59  | 123  | Bulgaria.....                  | 3.16  | 14.95 |
| 61   | Saudi Arabia.....             | 4.24  | 51.52  | 124  | Hungary.....                   | 2.86  | 4.80  |
| 62   | Sri Lanka.....                | 4.18  | 49.36  | 125  | Mongolia.....                  | 2.72  | 0.00  |
| 63   | Tunisia.....                  | 4.15  | 48.38  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 5.2.2 Relevance of education system to the economy

Average answer to the question: In your country, how well does the education system meet the needs of a competitive economy? [1 = not well at all; 7 = extremely well] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 6.19  | 100.00 | 64   | Nepal.....                     | 3.66  | 35.88 |
| 2    | Singapore.....                | 5.82  | 90.56  | 65   | Lesotho.....                   | 3.64  | 35.50 |
| 3    | Finland.....                  | 5.81  | 90.33  | 66   | Viet Nam.....                  | 3.63  | 35.32 |
| 4    | United States of America..... | 5.62  | 85.63  | 67   | Poland.....                    | 3.61  | 34.69 |
| 5    | Qatar.....                    | 5.57  | 84.34  | 68   | Lithuania.....                 | 3.59  | 34.26 |
| 6    | Netherlands.....              | 5.45  | 81.25  | 69   | Botswana.....                  | 3.59  | 34.24 |
| 7    | Ireland.....                  | 5.42  | 80.64  | 70   | Oman.....                      | 3.57  | 33.76 |
| 8    | Canada.....                   | 5.39  | 79.83  | 71   | Kazakhstan.....                | 3.54  | 32.95 |
| 9    | Germany.....                  | 5.37  | 79.33  | 72   | Senegal.....                   | 3.53  | 32.69 |
| 10   | New Zealand.....              | 5.35  | 78.87  | 73   | Cambodia.....                  | 3.50  | 31.93 |
| 11   | Norway.....                   | 5.32  | 77.91  | 74   | Ethiopia.....                  | 3.49  | 31.76 |
| 12   | United Arab Emirates.....     | 5.28  | 77.00  | 75   | Korea, Rep.....                | 3.48  | 31.50 |
| 13   | Iceland.....                  | 5.23  | 75.84  | 76   | Cameroon.....                  | 3.47  | 31.10 |
| 14   | Malaysia.....                 | 5.18  | 74.52  | 77   | Colombia.....                  | 3.44  | 30.31 |
| 15   | Belgium.....                  | 5.09  | 72.14  | 78   | Bangladesh.....                | 3.40  | 29.33 |
| 16   | Australia.....                | 5.07  | 71.63  | 79   | Uganda.....                    | 3.39  | 29.25 |
| 17   | Denmark.....                  | 4.99  | 69.66  | 80   | Chile.....                     | 3.39  | 29.23 |
| 18   | Lebanon.....                  | 4.99  | 69.53  | 81   | Bulgaria.....                  | 3.39  | 29.12 |
| 19   | Malta.....                    | 4.96  | 68.80  | 82   | Ecuador.....                   | 3.39  | 29.05 |
| 20   | Sweden.....                   | 4.76  | 63.84  | 83   | Kuwait.....                    | 3.32  | 27.45 |
| 21   | United Kingdom.....           | 4.67  | 61.66  | 84   | Tanzania, United Rep.....      | 3.28  | 26.49 |
| 22   | Estonia.....                  | 4.67  | 61.56  | 85   | Mali.....                      | 3.28  | 26.42 |
| 23   | Bahrain.....                  | 4.64  | 60.78  | 86   | Namibia.....                   | 3.28  | 26.32 |
| 24   | Israel.....                   | 4.64  | 60.75  | 87   | Serbia.....                    | 3.27  | 26.24 |
| 25   | India.....                    | 4.62  | 60.25  | 88   | Iran, Islamic Rep.....         | 3.27  | 26.01 |
| 26   | Costa Rica.....               | 4.53  | 57.97  | 89   | Moldova, Rep.....              | 3.24  | 25.30 |
| 27   | Kenya.....                    | 4.52  | 57.74  | 90   | Panama.....                    | 3.23  | 25.20 |
| 28   | China.....                    | 4.52  | 57.69  | 91   | Algeria.....                   | 3.21  | 24.67 |
| 29   | Bhutan.....                   | 4.50  | 57.26  | 92   | Honduras.....                  | 3.19  | 24.19 |
| 30   | Portugal.....                 | 4.44  | 55.64  | 93   | Malawi.....                    | 3.18  | 23.84 |
| 31   | Indonesia.....                | 4.43  | 55.57  | 94   | Turkey.....                    | 3.18  | 23.79 |
| 32   | Brunei Darussalam.....        | 4.43  | 55.49  | 95   | Argentina.....                 | 3.17  | 23.68 |
| 33   | Azerbaijan.....               | 4.40  | 54.73  | 96   | Tunisia.....                   | 3.08  | 21.43 |
| 34   | Japan.....                    | 4.38  | 54.33  | 97   | Kyrgyzstan.....                | 3.07  | 21.13 |
| 35   | Gambia.....                   | 4.38  | 54.25  | 98   | Burundi.....                   | 3.06  | 20.80 |
| 36   | Rwanda.....                   | 4.36  | 53.80  | 99   | Greece.....                    | 3.05  | 20.50 |
| 37   | Luxembourg.....               | 4.35  | 53.47  | 100  | Georgia.....                   | 3.03  | 19.94 |
| 38   | France.....                   | 4.31  | 52.33  | 101  | Mexico.....                    | 3.00  | 19.33 |
| 39   | Saudi Arabia.....             | 4.29  | 51.97  | 102  | Liberia.....                   | 2.98  | 18.83 |
| 40   | Albania.....                  | 4.29  | 51.87  | 103  | Madagascar.....                | 2.96  | 18.29 |
| 41   | Jordan.....                   | 4.23  | 50.43  | 104  | Hungary.....                   | 2.91  | 17.03 |
| 42   | Austria.....                  | 4.23  | 50.40  | 105  | Croatia.....                   | 2.91  | 16.98 |
| 43   | Trinidad and Tobago.....      | 4.21  | 50.00  | 106  | Congo, Dem. Rep.....           | 2.86  | 15.74 |
| 44   | Philippines.....              | 4.21  | 49.92  | 107  | South Africa.....              | 2.80  | 14.30 |
| 45   | Ghana.....                    | 4.08  | 46.66  | 108  | Mongolia.....                  | 2.80  | 14.20 |
| 46   | Mauritius.....                | 4.08  | 46.61  | 108  | Romania.....                   | 2.80  | 14.20 |
| 47   | Tajikistan.....               | 4.06  | 46.03  | 110  | Nigeria.....                   | 2.79  | 13.92 |
| 48   | Zimbabwe.....                 | 4.05  | 45.77  | 111  | Slovakia.....                  | 2.77  | 13.54 |
| 49   | Slovenia.....                 | 4.04  | 45.67  | 112  | Mozambique.....                | 2.72  | 12.30 |
| 50   | Laos.....                     | 4.01  | 44.89  | 113  | Morocco.....                   | 2.71  | 12.07 |
| 51   | Cyprus.....                   | 3.95  | 43.32  | 114  | Uruguay.....                   | 2.70  | 11.82 |
| 52   | Ukraine.....                  | 3.86  | 41.12  | 115  | Guatemala.....                 | 2.61  | 9.51  |
| 53   | Armenia.....                  | 3.85  | 40.74  | 116  | Peru.....                      | 2.60  | 9.13  |
| 54   | Montenegro.....               | 3.80  | 39.60  | 117  | Brazil.....                    | 2.59  | 8.83  |
| 55   | Czech Republic.....           | 3.78  | 39.12  | 118  | Venezuela, Bolivarian Rep..... | 2.56  | 8.27  |
| 56   | Sri Lanka.....                | 3.76  | 38.44  | 119  | Dominican Republic.....        | 2.54  | 7.69  |
| 57   | Pakistan.....                 | 3.75  | 38.34  | 120  | Egypt.....                     | 2.47  | 5.77  |
| 58   | Zambia.....                   | 3.75  | 38.31  | 121  | Bosnia and Herzegovina.....    | 2.37  | 3.47  |
| 59   | Russian Federation.....       | 3.72  | 37.50  | 122  | El Salvador.....               | 2.30  | 1.64  |
| 59   | Thailand.....                 | 3.72  | 37.50  | 123  | Yemen.....                     | 2.29  | 1.21  |
| 61   | Italy.....                    | 3.71  | 37.35  | 124  | Nicaragua.....                 | 2.27  | 0.91  |
| 62   | Spain.....                    | 3.68  | 36.51  | 125  | Paraguay.....                  | 2.24  | 0.00  |
| 63   | Latvia.....                   | 3.66  | 36.11  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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## 5.2.3 Skills matching with secondary education

**Average answer to the question: In your country, to what extent do graduating students possess the skills needed by businesses at the following levels: a. Secondary education [1 = not at all; 7 = to a great extent] | 2017**

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 5.88  | 100.00 | 64   | Panama.....                    | 3.71  | 41.60 |
| 2    | Finland.....                  | 5.39  | 86.94  | 65   | Mexico.....                    | 3.68  | 40.71 |
| 3    | United States of America..... | 5.34  | 85.38  | 66   | Armenia.....                   | 3.66  | 40.17 |
| 4    | Netherlands.....              | 5.30  | 84.49  | 67   | Kenya.....                     | 3.66  | 40.15 |
| 5    | Germany.....                  | 5.24  | 82.69  | 68   | Zimbabwe.....                  | 3.65  | 40.06 |
| 6    | Singapore.....                | 5.07  | 78.27  | 69   | Honduras.....                  | 3.63  | 39.58 |
| 7    | Qatar.....                    | 5.05  | 77.76  | 70   | Zambia.....                    | 3.63  | 39.39 |
| 8    | Iceland.....                  | 5.05  | 77.60  | 71   | Thailand.....                  | 3.62  | 39.12 |
| 9    | Malaysia.....                 | 4.96  | 75.31  | 72   | Tajikistan.....                | 3.61  | 39.04 |
| 10   | Sweden.....                   | 4.95  | 74.91  | 73   | Slovakia.....                  | 3.61  | 38.83 |
| 11   | Norway.....                   | 4.91  | 73.83  | 74   | Pakistan.....                  | 3.60  | 38.77 |
| 12   | United Arab Emirates.....     | 4.89  | 73.51  | 75   | Iran, Islamic Rep.....         | 3.58  | 38.13 |
| 13   | Austria.....                  | 4.85  | 72.37  | 76   | Latvia.....                    | 3.53  | 36.83 |
| 14   | New Zealand.....              | 4.83  | 71.84  | 77   | Oman.....                      | 3.52  | 36.54 |
| 15   | Costa Rica.....               | 4.82  | 71.41  | 78   | Montenegro.....                | 3.51  | 36.27 |
| 16   | Denmark.....                  | 4.81  | 71.32  | 79   | Uruguay.....                   | 3.49  | 35.78 |
| 17   | Belgium.....                  | 4.78  | 70.33  | 80   | Argentina.....                 | 3.49  | 35.57 |
| 18   | Canada.....                   | 4.71  | 68.61  | 81   | Nepal.....                     | 3.46  | 34.92 |
| 19   | Israel.....                   | 4.71  | 68.44  | 82   | Cameroon.....                  | 3.46  | 34.87 |
| 20   | Azerbaijan.....               | 4.61  | 65.81  | 83   | Namibia.....                   | 3.45  | 34.49 |
| 21   | Estonia.....                  | 4.56  | 64.59  | 84   | Moldova, Rep.....              | 3.44  | 34.38 |
| 22   | Malta.....                    | 4.56  | 64.49  | 85   | Croatia.....                   | 3.43  | 34.19 |
| 23   | Australia.....                | 4.53  | 63.81  | 86   | Hungary.....                   | 3.41  | 33.60 |
| 24   | China.....                    | 4.52  | 63.33  | 87   | Bulgaria.....                  | 3.41  | 33.47 |
| 25   | Luxembourg.....               | 4.51  | 63.06  | 88   | Burundi.....                   | 3.39  | 32.96 |
| 26   | Ireland.....                  | 4.49  | 62.65  | 89   | Dominican Republic.....        | 3.38  | 32.79 |
| 27   | Cyprus.....                   | 4.43  | 61.12  | 89   | Laos.....                      | 3.38  | 32.79 |
| 28   | Lebanon.....                  | 4.41  | 60.42  | 91   | Turkey.....                    | 3.35  | 31.93 |
| 29   | Indonesia.....                | 4.38  | 59.59  | 92   | El Salvador.....               | 3.34  | 31.61 |
| 30   | United Kingdom.....           | 4.36  | 59.21  | 93   | Poland.....                    | 3.33  | 31.48 |
| 31   | Portugal.....                 | 4.36  | 58.99  | 94   | South Africa.....              | 3.32  | 31.18 |
| 32   | India.....                    | 4.33  | 58.24  | 95   | Bosnia and Herzegovina.....    | 3.31  | 30.83 |
| 33   | Czech Republic.....           | 4.25  | 56.11  | 96   | Ghana.....                     | 3.31  | 30.80 |
| 34   | Bahrain.....                  | 4.24  | 55.92  | 97   | Viet Nam.....                  | 3.30  | 30.48 |
| 35   | France.....                   | 4.24  | 55.82  | 98   | Peru.....                      | 3.28  | 30.16 |
| 36   | Korea, Rep.....               | 4.23  | 55.49  | 99   | Venezuela, Bolivarian Rep..... | 3.25  | 29.13 |
| 37   | Slovenia.....                 | 4.22  | 55.47  | 100  | Madagascar.....                | 3.23  | 28.81 |
| 38   | Sri Lanka.....                | 4.13  | 52.99  | 101  | Botswana.....                  | 3.23  | 28.65 |
| 39   | Brunei Darussalam.....        | 4.09  | 51.91  | 102  | Tunisia.....                   | 3.19  | 27.63 |
| 40   | Mauritius.....                | 4.07  | 51.29  | 103  | Congo, Dem. Rep.....           | 3.18  | 27.25 |
| 41   | Rwanda.....                   | 4.04  | 50.48  | 104  | Brazil.....                    | 3.17  | 27.19 |
| 42   | Greece.....                   | 4.02  | 49.87  | 105  | Lithuania.....                 | 3.17  | 27.14 |
| 43   | Trinidad and Tobago.....      | 4.01  | 49.78  | 106  | Kyrgyzstan.....                | 3.17  | 26.98 |
| 44   | Gambia.....                   | 3.99  | 49.14  | 107  | Tanzania, United Rep.....      | 3.15  | 26.66 |
| 45   | Colombia.....                 | 3.98  | 48.90  | 108  | Morocco.....                   | 3.13  | 26.12 |
| 46   | Spain.....                    | 3.96  | 48.44  | 109  | Kuwait.....                    | 3.13  | 25.98 |
| 47   | Japan.....                    | 3.95  | 48.01  | 110  | Algeria.....                   | 3.13  | 25.90 |
| 48   | Albania.....                  | 3.94  | 47.82  | 111  | Nicaragua.....                 | 3.09  | 25.01 |
| 49   | Mali.....                     | 3.94  | 47.77  | 112  | Paraguay.....                  | 3.07  | 24.47 |
| 50   | Mongolia.....                 | 3.94  | 47.74  | 113  | Bangladesh.....                | 3.04  | 23.64 |
| 51   | Russian Federation.....       | 3.93  | 47.58  | 114  | Ethiopia.....                  | 2.90  | 19.71 |
| 52   | Serbia.....                   | 3.92  | 47.36  | 115  | Georgia.....                   | 2.88  | 19.28 |
| 53   | Bhutan.....                   | 3.92  | 47.33  | 116  | Liberia.....                   | 2.81  | 17.50 |
| 54   | Italy.....                    | 3.91  | 46.96  | 117  | Cambodia.....                  | 2.80  | 16.99 |
| 55   | Philippines.....              | 3.85  | 45.37  | 118  | Uganda.....                    | 2.75  | 15.64 |
| 56   | Ukraine.....                  | 3.85  | 45.29  | 119  | Romania.....                   | 2.70  | 14.38 |
| 57   | Jordan.....                   | 3.83  | 44.72  | 120  | Egypt.....                     | 2.69  | 14.11 |
| 58   | Chile.....                    | 3.77  | 43.30  | 121  | Malawi.....                    | 2.69  | 14.05 |
| 59   | Senegal.....                  | 3.76  | 43.03  | 122  | Nigeria.....                   | 2.67  | 13.65 |
| 60   | Guatemala.....                | 3.76  | 42.84  | 123  | Mozambique.....                | 2.64  | 12.76 |
| 61   | Ecuador.....                  | 3.75  | 42.73  | 124  | Lesotho.....                   | 2.25  | 2.32  |
| 62   | Saudi Arabia.....             | 3.75  | 42.70  | 125  | Yemen.....                     | 2.16  | 0.00  |
| 63   | Kazakhstan.....               | 3.73  | 42.06  |      |                                |       |       |

**SOURCE:** World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.



## 5.2.4 Skills matching with tertiary education

Average answer to the question: In your country, to what extent do graduating students possess the skills needed by businesses at the following levels: b. University level [1 = not at all; 7 = to a great extent] | 2017

| Rank | Country                        | Value | Score  | Rank | Country                     | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1    | Switzerland.....               | 6.06  | 100.00 | 64   | Jordan.....                 | 4.40  | 47.27 |
| 2    | Qatar.....                     | 5.90  | 94.72  | 65   | Pakistan.....               | 4.40  | 47.20 |
| 3    | United States of America.....  | 5.76  | 90.56  | 66   | Mauritius.....              | 4.39  | 46.85 |
| 4    | Singapore.....                 | 5.70  | 88.53  | 67   | Panama.....                 | 4.38  | 46.54 |
| 5    | Netherlands.....               | 5.65  | 87.06  | 68   | Tajikistan.....             | 4.35  | 45.45 |
| 6    | Iceland.....                   | 5.62  | 85.92  | 69   | Burundi.....                | 4.34  | 45.30 |
| 7    | Finland.....                   | 5.59  | 84.93  | 70   | South Africa.....           | 4.32  | 44.56 |
| 8    | Denmark.....                   | 5.55  | 83.82  | 71   | Cambodia.....               | 4.30  | 43.90 |
| 9    | Norway.....                    | 5.53  | 83.09  | 72   | Albania.....                | 4.26  | 42.82 |
| 10   | Malaysia.....                  | 5.52  | 82.84  | 73   | Oman.....                   | 4.25  | 42.53 |
| 11   | New Zealand.....               | 5.51  | 82.45  | 74   | Peru.....                   | 4.23  | 41.86 |
| 12   | Germany.....                   | 5.50  | 82.20  | 75   | Honduras.....               | 4.21  | 41.07 |
| 13   | Ireland.....                   | 5.49  | 81.95  | 76   | Sri Lanka.....              | 4.20  | 40.85 |
| 14   | Belgium.....                   | 5.48  | 81.53  | 77   | Russian Federation.....     | 4.19  | 40.65 |
| 15   | Sweden.....                    | 5.45  | 80.64  | 78   | Slovenia.....               | 4.19  | 40.40 |
| 16   | United Arab Emirates.....      | 5.45  | 80.42  | 79   | Cameroon.....               | 4.18  | 40.31 |
| 17   | Israel.....                    | 5.42  | 79.69  | 80   | Latvia.....                 | 4.15  | 39.32 |
| 18   | Austria.....                   | 5.42  | 79.56  | 81   | Serbia.....                 | 4.14  | 39.00 |
| 19   | Canada.....                    | 5.33  | 76.86  | 82   | Zimbabwe.....               | 4.10  | 37.79 |
| 20   | Costa Rica.....                | 5.32  | 76.57  | 83   | Madagascar.....             | 4.04  | 35.66 |
| 21   | Lebanon.....                   | 5.32  | 76.48  | 84   | Dominican Republic.....     | 4.02  | 34.97 |
| 22   | Bahrain.....                   | 5.19  | 72.31  | 84   | Nepal.....                  | 4.02  | 34.97 |
| 23   | Chile.....                     | 5.18  | 72.06  | 86   | Lithuania.....              | 4.01  | 34.93 |
| 24   | Australia.....                 | 5.12  | 70.09  | 87   | Mali.....                   | 4.00  | 34.49 |
| 25   | United Kingdom.....            | 5.10  | 69.58  | 88   | Botswana.....               | 4.00  | 34.33 |
| 26   | Malta.....                     | 5.06  | 68.28  | 89   | Poland.....                 | 3.98  | 33.98 |
| 27   | Luxembourg.....                | 5.03  | 67.23  | 90   | Tanzania, United Rep. ....  | 3.97  | 33.41 |
| 28   | Indonesia.....                 | 4.97  | 65.19  | 91   | Algeria.....                | 3.93  | 32.17 |
| 29   | France.....                    | 4.95  | 64.75  | 92   | Hungary.....                | 3.91  | 31.56 |
| 30   | Cyprus.....                    | 4.93  | 64.08  | 93   | Uganda.....                 | 3.90  | 31.31 |
| 31   | Portugal.....                  | 4.93  | 63.89  | 94   | Ethiopia.....               | 3.89  | 31.12 |
| 32   | Estonia.....                   | 4.90  | 63.03  | 95   | Iran, Islamic Rep.....      | 3.88  | 30.80 |
| 33   | Uruguay.....                   | 4.88  | 62.52  | 96   | Namibia.....                | 3.86  | 30.13 |
| 34   | Gambia.....                    | 4.84  | 61.28  | 97   | Turkey.....                 | 3.86  | 30.07 |
| 35   | Lesotho.....                   | 4.83  | 60.78  | 98   | Congo, Dem. Rep.....        | 3.86  | 29.91 |
| 36   | Azerbaijan.....                | 4.81  | 60.08  | 99   | El Salvador.....            | 3.85  | 29.82 |
| 37   | Philippines.....               | 4.72  | 57.28  | 100  | Armenia.....                | 3.84  | 29.37 |
| 38   | Argentina.....                 | 4.70  | 56.74  | 101  | Bangladesh.....             | 3.83  | 29.12 |
| 39   | Kenya.....                     | 4.69  | 56.45  | 102  | Kuwait.....                 | 3.82  | 28.61 |
| 40   | Czech Republic.....            | 4.68  | 56.10  | 103  | Viet Nam.....               | 3.80  | 28.00 |
| 41   | Thailand.....                  | 4.66  | 55.47  | 104  | Montenegro.....             | 3.79  | 27.94 |
| 42   | Guatemala.....                 | 4.65  | 55.05  | 105  | Malawi.....                 | 3.79  | 27.84 |
| 43   | Colombia.....                  | 4.63  | 54.35  | 106  | Kazakhstan.....             | 3.78  | 27.62 |
| 44   | Ukraine.....                   | 4.61  | 53.81  | 107  | Liberia.....                | 3.78  | 27.53 |
| 45   | China.....                     | 4.58  | 52.89  | 108  | Slovakia.....               | 3.77  | 27.18 |
| 46   | Korea, Rep.....                | 4.58  | 52.80  | 109  | Brazil.....                 | 3.75  | 26.38 |
| 47   | Bhutan.....                    | 4.57  | 52.73  | 110  | Morocco.....                | 3.69  | 24.67 |
| 48   | Greece.....                    | 4.57  | 52.45  | 111  | Tunisia.....                | 3.68  | 24.25 |
| 49   | Zambia.....                    | 4.55  | 51.88  | 112  | Croatia.....                | 3.67  | 24.00 |
| 50   | Japan.....                     | 4.54  | 51.78  | 113  | Moldova, Rep.....           | 3.59  | 21.55 |
| 50   | Mexico.....                    | 4.54  | 51.78  | 114  | Georgia.....                | 3.57  | 20.72 |
| 52   | Spain.....                     | 4.54  | 51.49  | 115  | Paraguay.....               | 3.56  | 20.41 |
| 53   | India.....                     | 4.53  | 51.24  | 116  | Bulgaria.....               | 3.53  | 19.39 |
| 54   | Brunei Darussalam.....         | 4.52  | 51.08  | 117  | Romania.....                | 3.52  | 19.36 |
| 55   | Ghana.....                     | 4.50  | 50.51  | 118  | Nicaragua.....              | 3.50  | 18.60 |
| 56   | Trinidad and Tobago.....       | 4.49  | 50.19  | 119  | Bosnia and Herzegovina..... | 3.42  | 16.12 |
| 57   | Saudi Arabia.....              | 4.47  | 49.43  | 120  | Nigeria.....                | 3.29  | 11.95 |
| 58   | Italy.....                     | 4.47  | 49.40  | 121  | Mozambique.....             | 3.24  | 10.24 |
| 59   | Rwanda.....                    | 4.46  | 49.14  | 122  | Kyrgyzstan.....             | 3.20  | 9.12  |
| 60   | Laos.....                      | 4.46  | 49.08  | 123  | Egypt.....                  | 3.18  | 8.33  |
| 61   | Venezuela, Bolivarian Rep..... | 4.46  | 48.95  | 124  | Yemen.....                  | 2.98  | 2.10  |
| 62   | Senegal.....                   | 4.42  | 47.90  | 125  | Mongolia.....               | 2.92  | 0.00  |
| 63   | Ecuador.....                   | 4.41  | 47.55  |      |                             |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

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# Pillar 6

## Global Knowledge Skills

## 6.1.1 Workforce with tertiary education

### Labour force with tertiary education (%) | 2017

| Rank | Country                        | Value | Score  | Rank | Country                     | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1    | Canada.....                    | 64.96 | 100.00 | 64   | Sri Lanka.....              | 19.56 | 29.38 |
| 2    | Ukraine.....                   | 52.55 | 80.70  | 65   | Argentina.....              | 19.46 | 29.23 |
| 3    | Singapore.....                 | 51.57 | 79.17  | 66   | Tunisia.....                | 19.35 | 29.06 |
| 4    | Russian Federation.....        | 51.49 | 79.05  | 67   | Brazil.....                 | 19.31 | 28.99 |
| 5    | Japan.....                     | 48.23 | 73.98  | 68   | Kuwait.....                 | 19.11 | 28.68 |
| 6    | Israel.....                    | 45.89 | 70.34  | 69   | Egypt.....                  | 18.87 | 28.31 |
| 7    | Korea, Rep.....                | 45.60 | 69.89  | 70   | Albania.....                | 18.70 | 28.04 |
| 8    | Cyprus.....                    | 44.60 | 68.33  | 71   | Qatar.....                  | 18.21 | 27.28 |
| 9    | Ireland.....                   | 43.78 | 67.06  | 72   | Kyrgyzstan.....             | 18.19 | 27.25 |
| 10   | Norway.....                    | 42.73 | 65.42  | 73   | Mexico.....                 | 17.18 | 25.68 |
| 11   | United Kingdom.....            | 42.65 | 65.30  | 74   | Chile.....                  | 17.08 | 25.52 |
| 12   | Lithuania.....                 | 42.48 | 65.03  | 75   | United Arab Emirates.....   | 16.61 | 24.79 |
| 13   | Belgium.....                   | 42.18 | 64.57  | 76   | Ethiopia.....               | 16.42 | 24.50 |
| 14   | Finland.....                   | 41.68 | 63.79  | 77   | Bosnia and Herzegovina..... | 16.18 | 24.13 |
| 15   | Luxembourg.....                | 40.65 | 62.19  | 78   | Thailand.....               | 16.06 | 23.94 |
| 16   | Switzerland.....               | 39.96 | 61.11  | 79   | South Africa.....           | 16.03 | 23.89 |
| 17   | Sweden.....                    | 39.87 | 60.97  | 80   | Botswana.....               | 15.89 | 23.67 |
| 18   | Spain.....                     | 39.04 | 59.68  | 81   | Tajikistan.....             | 15.81 | 23.55 |
| 19   | Estonia.....                   | 38.93 | 59.51  | 82   | Ecuador.....                | 15.35 | 22.83 |
| 20   | France.....                    | 38.27 | 58.48  | 83   | Paraguay.....               | 14.23 | 21.09 |
| 21   | Australia.....                 | 38.16 | 58.31  | 84   | Uruguay.....                | 12.94 | 19.09 |
| 22   | United States of America.....  | 36.01 | 54.97  | 85   | Indonesia.....              | 12.22 | 17.97 |
| 23   | Denmark.....                   | 35.27 | 53.82  | 86   | Namibia.....                | 12.17 | 17.89 |
| 24   | Iceland.....                   | 35.20 | 53.71  | 87   | Nepal.....                  | 12.08 | 17.75 |
| 25   | Kazakhstan.....                | 35.09 | 53.54  | 88   | Viet Nam.....               | 12.04 | 17.69 |
| 26   | Latvia.....                    | 34.98 | 53.37  | 89   | Zimbabwe.....               | 11.34 | 16.60 |
| 27   | Netherlands.....               | 34.79 | 53.07  | 90   | Mauritius.....              | 11.27 | 16.49 |
| 28   | Slovenia.....                  | 33.87 | 51.64  | 91   | India.....                  | 9.95  | 14.43 |
| 29   | Austria.....                   | 33.12 | 50.47  | 92   | Bahrain.....                | 9.86  | 14.29 |
| 30   | Greece.....                    | 32.66 | 49.76  | 93   | Morocco.....                | 9.01  | 12.97 |
| 31   | Poland.....                    | 32.64 | 49.73  | 93   | Pakistan.....               | 9.01  | 12.97 |
| 32   | Georgia.....                   | 32.63 | 49.71  | 95   | Ghana.....                  | 8.67  | 12.44 |
| 33   | New Zealand.....               | 31.79 | 48.41  | 96   | Laos.....                   | 8.45  | 12.10 |
| 34   | Mongolia.....                  | 30.88 | 46.99  | 97   | Nicaragua.....              | 8.12  | 11.59 |
| 35   | Peru.....                      | 30.48 | 46.37  | 98   | Yemen.....                  | 7.92  | 11.28 |
| 36   | Bulgaria.....                  | 30.39 | 46.23  | 99   | Honduras.....               | 6.57  | 9.18  |
| 37   | Venezuela, Bolivarian Rep..... | 30.28 | 46.06  | 100  | Congo, Dem. Rep.....        | 6.36  | 8.85  |
| 38   | Armenia.....                   | 28.83 | 43.80  | 101  | El Salvador.....            | 6.20  | 8.60  |
| 39   | Panama.....                    | 28.61 | 43.46  | 102  | Bangladesh.....             | 5.60  | 7.67  |
| 40   | Germany.....                   | 28.34 | 43.04  | 103  | Senegal.....                | 5.35  | 7.28  |
| 41   | Colombia.....                  | 28.27 | 42.93  | 104  | Uganda.....                 | 5.26  | 7.14  |
| 42   | Saudi Arabia.....              | 27.14 | 41.17  | 105  | Bhutan.....                 | 5.22  | 7.08  |
| 43   | Azerbaijan.....                | 26.75 | 40.57  | 106  | Madagascar.....             | 4.80  | 6.42  |
| 44   | Croatia.....                   | 26.23 | 39.76  | 107  | Lesotho.....                | 4.52  | 5.99  |
| 45   | Philippines.....               | 25.52 | 38.65  | 108  | Guatemala.....              | 4.13  | 5.38  |
| 46   | Portugal.....                  | 25.50 | 38.62  | 109  | Cameroon.....               | 3.06  | 3.72  |
| 47   | Hungary.....                   | 25.34 | 38.37  | 110  | Malawi.....                 | 2.84  | 3.38  |
| 48   | Dominican Republic.....        | 25.21 | 38.17  | 111  | Cambodia.....               | 2.77  | 3.27  |
| 49   | Serbia.....                    | 25.02 | 37.88  | 112  | Liberia.....                | 2.71  | 3.17  |
| 50   | Malta.....                     | 24.88 | 37.66  | 113  | Rwanda.....                 | 1.68  | 1.57  |
| 51   | Moldova, Rep.....              | 24.43 | 36.96  | 114  | Mali.....                   | 1.66  | 1.54  |
| 52   | Montenegro.....                | 24.40 | 36.91  | 115  | Tanzania, United Rep.....   | 1.11  | 0.68  |
| 53   | Lebanon.....                   | 24.17 | 36.55  | 116  | Gambia.....                 | 0.67  | 0.00  |
| 54   | Czech Republic.....            | 23.59 | 35.65  |      | Burundi.....                | n/a   | n/a   |
| 55   | Malaysia.....                  | 23.50 | 35.51  |      | China.....                  | n/a   | n/a   |
| 56   | Turkey.....                    | 23.26 | 35.14  |      | Iran, Islamic Rep.....      | n/a   | n/a   |
| 57   | Algeria.....                   | 22.73 | 34.31  |      | Jordan.....                 | n/a   | n/a   |
| 58   | Slovakia.....                  | 22.62 | 34.14  |      | Kenya.....                  | n/a   | n/a   |
| 59   | Trinidad and Tobago.....       | 21.84 | 32.93  |      | Mozambique.....             | n/a   | n/a   |
| 60   | Brunei Darussalam.....         | 21.08 | 31.75  |      | Nigeria.....                | n/a   | n/a   |
| 61   | Costa Rica.....                | 20.24 | 30.44  |      | Oman.....                   | n/a   | n/a   |
| 62   | Italy.....                     | 20.18 | 30.35  |      | Zambia.....                 | n/a   | n/a   |
| 63   | Romania.....                   | 19.96 | 30.00  |      |                             |       |       |

**SOURCE:** International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.1.2 Population with tertiary education

### Population with tertiary education (%) | 2016

| Rank | Country                    | Value | Score  | Rank | Country                | Value | Score |
|------|----------------------------|-------|--------|------|------------------------|-------|-------|
| 1    | Russian Federation         | 60.00 | 100.00 | 64   | Lebanon                | 15.30 | 24.11 |
| 2    | Canada                     | 47.70 | 79.12  | 65   | Romania                | 14.50 | 22.75 |
| 3    | Armenia                    | 47.40 | 78.61  | 66   | Italy                  | 14.40 | 22.58 |
| 4    | Israel                     | 47.00 | 77.93  | 67   | Paraguay               | 14.30 | 22.41 |
| 5    | Singapore                  | 42.90 | 70.97  | 68   | Sri Lanka              | 14.10 | 22.07 |
| 6    | United States of America   | 42.30 | 69.95  | 69   | Ecuador                | 13.60 | 21.22 |
| 7    | Australia                  | 39.30 | 64.86  | 69   | Kuwait                 | 13.60 | 21.22 |
| 8    | Estonia                    | 37.60 | 61.97  | 71   | Egypt                  | 13.20 | 20.54 |
| 9    | Switzerland                | 36.80 | 60.61  | 72   | Brazil                 | 13.10 | 20.37 |
| 10   | Korea, Rep.                | 35.40 | 58.23  | 73   | Zimbabwe               | 13.00 | 20.20 |
| 11   | Norway                     | 35.10 | 57.72  | 74   | Albania                | 12.90 | 20.03 |
| 12   | Cyprus                     | 34.80 | 57.22  | 75   | Dominican Republic     | 12.40 | 19.19 |
| 13   | Luxembourg                 | 34.30 | 56.37  | 75   | Uruguay                | 12.40 | 19.19 |
| 14   | Finland                    | 34.10 | 56.03  | 77   | Tunisia                | 12.30 | 19.02 |
| 15   | Lithuania                  | 33.10 | 54.33  | 78   | Bosnia and Herzegovina | 10.50 | 15.96 |
| 15   | Moldova, Rep.              | 33.10 | 54.33  | 79   | El Salvador            | 10.10 | 15.28 |
| 17   | United Kingdom             | 32.40 | 53.14  | 80   | India                  | 9.90  | 14.94 |
| 18   | Belgium                    | 32.20 | 52.80  | 81   | Honduras               | 9.80  | 14.77 |
| 19   | Georgia                    | 31.90 | 52.29  | 82   | Nepal                  | 9.60  | 14.43 |
| 20   | Denmark                    | 31.50 | 51.61  | 82   | Trinidad and Tobago    | 9.60  | 14.43 |
| 21   | Sweden                     | 31.10 | 50.93  | 84   | Indonesia              | 9.30  | 13.92 |
| 22   | Netherlands                | 30.60 | 50.08  | 85   | Congo, Dem. Rep.       | 9.00  | 13.41 |
| 23   | France                     | 30.40 | 49.75  | 86   | China                  | 8.80  | 13.07 |
| 24   | Ireland                    | 30.30 | 49.58  | 86   | Pakistan               | 8.80  | 13.07 |
| 25   | New Zealand                | 30.10 | 49.24  | 88   | Guatemala              | 8.40  | 12.39 |
| 26   | Japan                      | 29.90 | 48.90  | 89   | Algeria                | 8.00  | 11.71 |
| 27   | Latvia                     | 29.80 | 48.73  | 89   | Uganda                 | 8.00  | 11.71 |
| 28   | Venezuela, Bolivarian Rep. | 29.60 | 48.39  | 91   | South Africa           | 7.70  | 11.21 |
| 29   | Spain                      | 29.30 | 47.88  | 92   | Viet Nam               | 6.70  | 9.51  |
| 30   | Austria                    | 26.90 | 43.80  | 93   | Mauritius              | 5.20  | 6.96  |
| 31   | Philippines                | 26.60 | 43.29  | 94   | Bhutan                 | 4.60  | 5.94  |
| 32   | Slovenia                   | 26.20 | 42.61  | 95   | Senegal                | 4.20  | 5.26  |
| 33   | Azerbaijan                 | 25.40 | 41.26  | 96   | Rwanda                 | 3.50  | 4.07  |
| 33   | Germany                    | 25.40 | 41.26  | 97   | Ghana                  | 3.10  | 3.40  |
| 35   | Bulgaria                   | 24.50 | 39.73  | 98   | Kenya                  | 2.20  | 1.87  |
| 36   | Poland                     | 24.00 | 38.88  | 99   | Mali                   | 2.10  | 1.70  |
| 37   | Greece                     | 23.80 | 38.54  | 100  | Lesotho                | 1.90  | 1.36  |
| 38   | Mongolia                   | 23.70 | 38.37  | 100  | Tanzania, United Rep.  | 1.90  | 1.36  |
| 39   | Kazakhstan                 | 22.70 | 36.67  | 102  | Mozambique             | 1.70  | 1.02  |
| 40   | Costa Rica                 | 21.80 | 35.14  | 103  | Cambodia               | 1.50  | 0.68  |
| 40   | Iran, Islamic Rep.         | 21.80 | 35.14  | 104  | Cameroon               | 1.40  | 0.51  |
| 42   | Hungary                    | 21.70 | 34.97  | 105  | Burundi                | 1.30  | 0.34  |
| 43   | Oman                       | 21.20 | 34.13  | 106  | Ethiopia               | 1.10  | 0.00  |
| 43   | Panama                     | 21.20 | 34.13  | 104  | Argentina              | 0.60  | 0.00  |
| 45   | Saudi Arabia               | 21    | 33.79  |      | Bangladesh             | n/a   | n/a   |
| 46   | Peru                       | 20.80 | 33.45  |      | Botswana               | n/a   | n/a   |
| 47   | Qatar                      | 20.30 | 32.60  |      | Brunei Darussalam      | n/a   | n/a   |
| 48   | Serbia                     | 20.00 | 32.09  |      | Gambia                 | n/a   | n/a   |
| 49   | Colombia                   | 19.50 | 31.24  |      | Iceland                | n/a   | n/a   |
| 49   | Czech Republic             | 19.50 | 31.24  |      | Laos                   | n/a   | n/a   |
| 49   | Montenegro                 | 19.50 | 31.24  |      | Liberia                | n/a   | n/a   |
| 52   | Bahrain                    | 19.30 | 30.90  |      | Madagascar             | n/a   | n/a   |
| 52   | Slovakia                   | 19.30 | 30.90  |      | Malawi                 | n/a   | n/a   |
| 54   | Thailand                   | 18.90 | 30.22  |      | Morocco                | n/a   | n/a   |
| 55   | Croatia                    | 18.30 | 29.20  |      | Namibia                | n/a   | n/a   |
| 56   | Chile                      | 18.20 | 29.03  |      | Nicaragua              | n/a   | n/a   |
| 56   | Portugal                   | 18.20 | 29.03  |      | Nigeria                | n/a   | n/a   |
| 58   | Kyrgyzstan                 | 17.60 | 28.01  |      | Tajikistan             | n/a   | n/a   |
| 59   | Malta                      | 16.50 | 26.15  |      | Ukraine                | n/a   | n/a   |
| 60   | Malaysia                   | 16.40 | 25.98  |      | United Arab Emirates   | n/a   | n/a   |
| 61   | Jordan                     | 16.20 | 25.64  |      | Yemen                  | n/a   | n/a   |
| 61   | Mexico                     | 16.20 | 25.64  |      | Zambia                 | n/a   | n/a   |
| 63   | Turkey                     | 16.10 | 25.47  |      |                        |       |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.1.3 Professionals

### Professionals (%) | 2017

| Rank | Country                    | Value | Score  | Rank | Country               | Value | Score |
|------|----------------------------|-------|--------|------|-----------------------|-------|-------|
| 1    | Luxembourg                 | 36.20 | 100.00 | 62   | Lebanon               | 10.30 | 27.25 |
| 2    | Sweden                     | 27.80 | 76.40  | 65   | Turkey                | 10.20 | 26.97 |
| 3    | Norway                     | 27.40 | 75.28  | 66   | Argentina             | 9.50  | 25.00 |
| 4    | Denmark                    | 26.00 | 71.35  | 67   | Mexico                | 9.30  | 24.44 |
| 5    | Netherlands                | 25.70 | 70.51  | 68   | Mauritius             | 9.20  | 24.16 |
| 6    | Iceland                    | 25.40 | 69.66  | 69   | Iran, Islamic Rep.    | 9.10  | 23.88 |
| 7    | Israel                     | 25.20 | 69.10  | 69   | Qatar                 | 9.10  | 23.88 |
| 8    | Finland                    | 25.00 | 68.54  | 71   | Oman                  | 8.90  | 23.31 |
| 8    | United Kingdom             | 25.00 | 68.54  | 72   | Bhutan                | 8.70  | 22.75 |
| 10   | Switzerland                | 24.60 | 67.42  | 72   | Namibia               | 8.70  | 22.75 |
| 11   | Belgium                    | 23.90 | 65.45  | 74   | Costa Rica            | 8.30  | 21.63 |
| 12   | Russian Federation         | 23.80 | 65.17  | 75   | Ghana                 | 8.10  | 21.07 |
| 13   | Lithuania                  | 23.30 | 63.76  | 76   | Kuwait                | 8.00  | 20.79 |
| 14   | United States of America   | 22.20 | 60.67  | 77   | Dominican Republic    | 7.90  | 20.51 |
| 15   | Slovenia                   | 22.00 | 60.11  | 78   | Bahrain               | 7.60  | 19.66 |
| 16   | Australia                  | 21.60 | 58.99  | 78   | Tajikistan            | 7.60  | 19.66 |
| 17   | Ireland                    | 21.30 | 58.15  | 80   | Ecuador               | 7.50  | 19.38 |
| 18   | Estonia                    | 20.10 | 54.78  | 81   | Yemen                 | 7.30  | 18.82 |
| 18   | Korea, Rep.                | 20.10 | 54.78  | 82   | Paraguay              | 7.10  | 18.26 |
| 20   | Montenegro                 | 20.00 | 54.49  | 83   | Viet Nam              | 6.90  | 17.70 |
| 21   | Greece                     | 19.40 | 52.81  | 84   | Botswana              | 6.80  | 17.42 |
| 22   | Poland                     | 18.90 | 51.40  | 84   | Tunisia               | 6.80  | 17.42 |
| 23   | Canada                     | 18.70 | 50.84  | 86   | Liberia               | 6.40  | 16.29 |
| 24   | Cyprus                     | 18.50 | 50.28  | 86   | Sri Lanka             | 6.40  | 16.29 |
| 25   | Portugal                   | 18.40 | 50.00  | 88   | Nigeria               | 6.10  | 15.45 |
| 26   | Singapore                  | 18.30 | 49.72  | 89   | Indonesia             | 6.00  | 15.17 |
| 27   | France                     | 18.00 | 48.88  | 90   | Thailand              | 5.80  | 14.61 |
| 28   | Spain                      | 17.90 | 48.60  | 91   | China                 | 5.70  | 14.33 |
| 28   | Ukraine                    | 17.90 | 48.60  | 91   | El Salvador           | 5.70  | 14.33 |
| 30   | Germany                    | 17.80 | 48.31  | 93   | Guatemala             | 5.60  | 14.04 |
| 30   | Latvia                     | 17.80 | 48.31  | 94   | Nicaragua             | 5.20  | 12.92 |
| 32   | Austria                    | 17.50 | 47.47  | 95   | Philippines           | 5.10  | 12.64 |
| 33   | Malta                      | 17.10 | 46.35  | 96   | Bangladesh            | 5.00  | 12.36 |
| 34   | Brunei Darussalam          | 17.00 | 46.07  | 97   | Laos                  | 4.80  | 11.80 |
| 35   | Kazakhstan                 | 16.80 | 45.51  | 98   | Pakistan              | 4.70  | 11.52 |
| 35   | New Zealand                | 16.80 | 45.51  | 99   | Trinidad and Tobago   | 4.60  | 11.24 |
| 37   | Croatia                    | 16.70 | 45.22  | 100  | Honduras              | 4.50  | 10.96 |
| 38   | Bulgaria                   | 16.10 | 43.54  | 100  | Zambia                | 4.50  | 10.96 |
| 39   | Mongolia                   | 15.90 | 42.98  | 102  | Cambodia              | 4.40  | 10.67 |
| 40   | Czech Republic             | 15.30 | 41.29  | 103  | South Africa          | 4.20  | 10.11 |
| 41   | Romania                    | 15.20 | 41.01  | 104  | Senegal               | 4.10  | 9.83  |
| 42   | Venezuela, Bolivarian Rep. | 15.00 | 40.45  | 105  | Gambia                | 3.80  | 8.99  |
| 43   | Italy                      | 14.80 | 39.89  | 106  | India                 | 3.70  | 8.71  |
| 44   | Hungary                    | 14.70 | 39.61  | 107  | Zimbabwe              | 3.50  | 8.15  |
| 45   | Armenia                    | 14.3  | 38.48  | 108  | Malawi                | 3.00  | 6.74  |
| 46   | United Arab Emirates       | 14.20 | 38.20  | 109  | Ethiopia              | 2.60  | 5.62  |
| 47   | Moldova, Rep.              | 13.80 | 37.08  | 110  | Congo, Dem. Rep.      | 2.40  | 5.06  |
| 48   | Serbia                     | 13.50 | 36.24  | 111  | Mali                  | 2.30  | 4.78  |
| 49   | Georgia                    | 12.80 | 34.27  | 112  | Colombia              | 2.20  | 4.49  |
| 50   | Azerbaijan                 | 12.70 | 33.99  | 113  | Madagascar            | 2.10  | 4.21  |
| 51   | Malaysia                   | 12.40 | 33.15  | 114  | Mozambique            | 2.00  | 3.93  |
| 51   | Slovakia                   | 12.40 | 33.15  | 114  | Rwanda                | 2.00  | 3.93  |
| 53   | Chile                      | 11.70 | 31.18  | 116  | Morocco               | 1.80  | 3.37  |
| 54   | Saudi Arabia               | 11.60 | 30.90  | 117  | Nepal                 | 1.70  | 3.09  |
| 55   | Uruguay                    | 11.50 | 30.62  | 118  | Uganda                | 1.60  | 2.81  |
| 56   | Peru                       | 11.30 | 30.06  | 119  | Lesotho               | 1.20  | 1.69  |
| 57   | Egypt                      | 10.90 | 28.93  | 120  | Tanzania, United Rep. | 0.90  | 0.84  |
| 58   | Bosnia and Herzegovina     | 10.80 | 28.65  | 121  | Burundi               | 0.60  | 0.00  |
| 58   | Panama                     | 10.80 | 28.65  |      | Cameroon              | n/a   | n/a   |
| 60   | Albania                    | 10.60 | 28.09  |      | Japan                 | n/a   | n/a   |
| 61   | Brazil                     | 10.50 | 27.81  |      | Jordan                | n/a   | n/a   |
| 62   | Algeria                    | 10.30 | 27.25  |      | Kenya                 | n/a   | n/a   |
| 62   | Kyrgyzstan                 | 10.30 | 27.25  |      |                       |       |       |

**SOURCE:** International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.1.4 Researchers

### Full-time equivalent researchers (per million population) | 2016

| Rank | Country                  | Value   | Score  | Rank | Country                    | Value  | Score |
|------|--------------------------|---------|--------|------|----------------------------|--------|-------|
| 1    | Israel                   | 8250.47 | 100.00 | 64   | Chile                      | 502.10 | 6.00  |
| 2    | Denmark                  | 7514.70 | 91.07  | 65   | South Africa               | 473.12 | 5.65  |
| 3    | Sweden                   | 7153.42 | 86.69  | 66   | Bosnia and Herzegovina     | 404.40 | 4.82  |
| 4    | Korea, Rep.              | 7113.17 | 86.20  | 67   | Ecuador                    | 400.71 | 4.77  |
| 5    | Singapore                | 6729.68 | 81.55  | 68   | Kuwait                     | 385.69 | 4.59  |
| 6    | Iceland                  | 6635.11 | 80.40  | 69   | Bahrain                    | 368.90 | 4.39  |
| 7    | Finland                  | 6525.01 | 79.07  | 70   | Pakistan                   | 293.65 | 3.47  |
| 8    | Norway                   | 6073.24 | 73.59  | 71   | Mexico                     | 244.18 | 2.87  |
| 9    | Ireland                  | 5563.39 | 67.40  | 72   | Venezuela, Bolivarian Rep. | 240.35 | 2.83  |
| 10   | Switzerland              | 5257.30 | 63.69  | 73   | Kenya                      | 225.03 | 2.64  |
| 11   | Japan                    | 5209.97 | 63.12  | 74   | India                      | 216.18 | 2.53  |
| 12   | Austria                  | 5157.52 | 62.48  | 75   | Oman                       | 215.95 | 2.53  |
| 13   | Germany                  | 4893.15 | 59.27  | 76   | Philippines                | 187.66 | 2.19  |
| 14   | Netherlands              | 4842.67 | 58.66  | 77   | Paraguay                   | 184.06 | 2.15  |
| 15   | Belgium                  | 4734.04 | 57.34  | 78   | Mauritius                  | 181.83 | 2.12  |
| 16   | Canada                   | 4552.49 | 55.14  | 79   | Botswana                   | 179.47 | 2.09  |
| 17   | Australia                | 4539.49 | 54.98  | 80   | Albania                    | 156.10 | 1.81  |
| 18   | United Kingdom           | 4429.58 | 53.65  | 81   | Namibia                    | 143.32 | 1.65  |
| 19   | Luxembourg               | 4350.87 | 52.69  | 82   | Colombia                   | 131.96 | 1.51  |
| 20   | United States of America | 4313.38 | 52.24  | 83   | Sri Lanka                  | 99.74  | 1.12  |
| 21   | France                   | 4307.22 | 52.16  | 84   | Indonesia                  | 89.20  | 0.99  |
| 22   | New Zealand              | 4052.42 | 49.07  | 85   | Zimbabwe                   | 88.72  | 0.99  |
| 23   | Portugal                 | 3928.60 | 47.57  | 86   | El Salvador                | 63.37  | 0.68  |
| 24   | Slovenia                 | 3899.20 | 47.21  | 87   | Malawi                     | 48.27  | 0.50  |
| 25   | Czech Republic           | 3518.82 | 42.60  | 88   | Ethiopia                   | 44.97  | 0.46  |
| 26   | Estonia                  | 3305.29 | 40.01  | 89   | Mozambique                 | 41.48  | 0.42  |
| 27   | Russian Federation       | 2979.10 | 36.05  | 90   | Zambia                     | 40.97  | 0.41  |
| 28   | Lithuania                | 2931.66 | 35.48  | 91   | Panama                     | 39.08  | 0.39  |
| 29   | Spain                    | 2732.25 | 33.06  | 92   | Ghana                      | 38.37  | 0.38  |
| 30   | Hungary                  | 2645.67 | 32.01  | 93   | Gambia                     | 33.56  | 0.32  |
| 31   | Greece                   | 2629.09 | 31.81  | 94   | Mali                       | 30.79  | 0.29  |
| 32   | Slovakia                 | 2598.90 | 31.44  | 95   | Cambodia                   | 30.37  | 0.28  |
| 33   | United Arab Emirates     | 2406.57 | 29.11  | 96   | Uganda                     | 26.47  | 0.23  |
| 34   | Malaysia                 | 2273.99 | 27.50  | 97   | Madagascar                 | 24.70  | 0.21  |
| 35   | Bulgaria                 | 2243.71 | 27.13  | 98   | Lesotho                    | 22.83  | 0.19  |
| 36   | Poland                   | 2158.46 | 26.10  | 99   | Honduras                   | 22.77  | 0.19  |
| 37   | Serbia                   | 2132.77 | 25.79  | 100  | Guatemala                  | 22.15  | 0.18  |
| 38   | Italy                    | 2131.48 | 25.77  | 101  | Tanzania, United Rep.      | 18.34  | 0.13  |
| 39   | Tunisia                  | 1964.97 | 23.75  | 102  | Rwanda                     | 12.35  | 0.06  |
| 40   | Malta                    | 1930.77 | 23.33  | 103  | Congo, Dem. Rep.           | 7.23   | 0.00  |
| 41   | Croatia                  | 1793.15 | 21.67  | 101  | Algeria                    | 18.49  | 0.08  |
| 42   | Latvia                   | 1599.57 | 19.32  | 102  | Armenia                    | 12.29  | 0.00  |
| 43   | Georgia                  | 1336.56 | 16.13  |      | Azerbaijan                 | n/a    | n/a   |
| 44   | Argentina                | 1220.00 | 14.71  |      | Bangladesh                 | n/a    | n/a   |
| 45   | Turkey                   | 1215.78 | 14.66  |      | Bhutan                     | n/a    | n/a   |
| 46   | China                    | 1205.68 | 14.54  |      | Brunei Darussalam          | n/a    | n/a   |
| 47   | Morocco                  | 1068.96 | 12.88  |      | Burundi                    | n/a    | n/a   |
| 48   | Ukraine                  | 1037.24 | 12.50  |      | Cameroon                   | n/a    | n/a   |
| 49   | Cyprus                   | 1000.23 | 12.05  |      | Dominican Republic         | n/a    | n/a   |
| 50   | Romania                  | 912.42  | 10.98  |      | Kyrgyzstan                 | n/a    | n/a   |
| 51   | Brazil                   | 900.30  | 10.83  |      | Laos                       | n/a    | n/a   |
| 52   | Thailand                 | 865.40  | 10.41  |      | Lebanon                    | n/a    | n/a   |
| 53   | Montenegro               | 833.00  | 10.02  |      | Liberia                    | n/a    | n/a   |
| 54   | Moldova, Rep.            | 725.74  | 8.72   |      | Mongolia                   | n/a    | n/a   |
| 55   | Kazakhstan               | 687.64  | 8.25   |      | Nepal                      | n/a    | n/a   |
| 56   | Egypt                    | 680.30  | 8.17   |      | Nicaragua                  | n/a    | n/a   |
| 57   | Viet Nam                 | 672.07  | 8.07   |      | Nigeria                    | n/a    | n/a   |
| 58   | Iran, Islamic Rep.       | 671.02  | 8.05   |      | Peru                       | n/a    | n/a   |
| 59   | Uruguay                  | 645.18  | 7.74   |      | Saudi Arabia               | n/a    | n/a   |
| 60   | Qatar                    | 603.79  | 7.24   |      | Tajikistan                 | n/a    | n/a   |
| 61   | Jordan                   | 598.57  | 7.17   |      | Trinidad and Tobago        | n/a    | n/a   |
| 62   | Costa Rica               | 572.98  | 6.86   |      | Yemen                      | n/a    | n/a   |
| 63   | Senegal                  | 549.32  | 6.58   |      |                            |        |       |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

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## 6.1.5 Senior officials and managers

### Legislators, senior officials, and managers (%) | 2017

| Rank | Country                    | Value | Score  | Rank | Country                | Value | Score |
|------|----------------------------|-------|--------|------|------------------------|-------|-------|
| 1    | Philippines                | 17.00 | 100.00 | 64   | Georgia                | 3.60  | 20.24 |
| 2    | Singapore                  | 16.10 | 94.64  | 65   | Finland                | 3.50  | 19.64 |
| 3    | United States of America   | 15.80 | 92.86  | 66   | Botswana               | 3.40  | 19.05 |
| 4    | New Zealand                | 13.70 | 80.36  | 67   | Mexico                 | 3.20  | 17.86 |
| 5    | Egypt                      | 13.10 | 76.79  | 68   | Bosnia and Herzegovina | 3.10  | 17.26 |
| 6    | Estonia                    | 12.10 | 70.83  | 69   | Honduras               | 3.00  | 16.67 |
| 7    | Lebanon                    | 11.90 | 69.64  | 70   | Iran, Islamic Rep.     | 2.90  | 16.07 |
| 8    | Australia                  | 11.40 | 66.67  | 70   | Serbia                 | 2.90  | 16.07 |
| 9    | United Kingdom             | 11.20 | 65.48  | 72   | Algeria                | 2.70  | 14.88 |
| 10   | Israel                     | 10.60 | 61.90  | 72   | Tajikistan             | 2.70  | 14.88 |
| 11   | Iceland                    | 10.30 | 60.12  | 74   | Denmark                | 2.50  | 13.69 |
| 12   | Latvia                     | 10.20 | 59.52  | 74   | Greece                 | 2.50  | 13.69 |
| 13   | Malta                      | 9.40  | 54.76  | 74   | Kuwait                 | 2.50  | 13.69 |
| 14   | Lithuania                  | 9.10  | 52.98  | 74   | Uruguay                | 2.50  | 13.69 |
| 14   | Switzerland                | 9.10  | 52.98  | 78   | Dominican Republic     | 2.40  | 13.10 |
| 16   | Norway                     | 8.70  | 50.60  | 79   | Japan                  | 2.30  | 12.50 |
| 17   | Trinidad and Tobago        | 8.60  | 50.00  | 79   | Luxembourg             | 2.30  | 12.50 |
| 18   | Belgium                    | 8.40  | 48.81  | 81   | Chile                  | 2.20  | 11.90 |
| 19   | Ireland                    | 8.30  | 48.21  | 81   | Pakistan               | 2.20  | 11.90 |
| 20   | Canada                     | 8.20  | 47.62  | 81   | Romania                | 2.20  | 11.90 |
| 21   | Bahrain                    | 8.10  | 47.02  | 84   | Cambodia               | 2.10  | 11.31 |
| 22   | Ukraine                    | 7.70  | 44.64  | 84   | Costa Rica             | 2.10  | 11.31 |
| 23   | Brunei Darussalam          | 7.60  | 44.05  | 84   | Qatar                  | 2.10  | 11.31 |
| 23   | United Arab Emirates       | 7.60  | 44.05  | 87   | Bhutan                 | 2.00  | 10.71 |
| 25   | Slovenia                   | 7.50  | 43.45  | 87   | Indonesia              | 2.00  | 10.71 |
| 26   | South Africa               | 7.30  | 42.26  | 87   | Nicaragua              | 2.00  | 10.71 |
| 27   | France                     | 7.20  | 41.67  | 90   | Albania                | 1.80  | 9.52  |
| 27   | India                      | 7.20  | 41.67  | 90   | Bangladesh             | 1.80  | 9.52  |
| 29   | Moldova, Rep.              | 7.00  | 40.48  | 92   | China                  | 1.70  | 8.93  |
| 29   | Russian Federation         | 7.00  | 40.48  | 92   | El Salvador            | 1.70  | 8.93  |
| 31   | Tunisia                    | 6.60  | 38.10  | 94   | Yemen                  | 1.60  | 8.33  |
| 32   | Panama                     | 6.50  | 37.50  | 95   | Laos                   | 1.50  | 7.74  |
| 33   | Mongolia                   | 6.40  | 36.90  | 96   | Ghana                  | 1.40  | 7.14  |
| 34   | Poland                     | 6.30  | 36.31  | 96   | Korea, Rep.            | 1.40  | 7.14  |
| 35   | Montenegro                 | 6.20  | 35.71  | 96   | Lesotho                | 1.40  | 7.14  |
| 35   | Portugal                   | 6.20  | 35.71  | 99   | Azerbaijan             | 1.30  | 6.55  |
| 37   | Armenia                    | 6.00  | 34.52  | 99   | Congo, Dem. Rep.       | 1.30  | 6.55  |
| 37   | Sweden                     | 6.00  | 34.52  | 99   | Liberia                | 1.30  | 6.55  |
| 39   | Bulgaria                   | 5.80  | 33.33  | 102  | Kyrgyzstan             | 1.20  | 5.95  |
| 39   | Colombia                   | 5.80  | 33.33  | 102  | Nigeria                | 1.20  | 5.95  |
| 41   | Netherlands                | 5.40  | 30.95  | 104  | Ecuador                | 1.10  | 5.36  |
| 41   | Oman                       | 5.40  | 30.95  | 104  | Zimbabwe               | 1.10  | 5.36  |
| 43   | Czech Republic             | 5.20  | 29.76  | 106  | Guatemala              | 1.00  | 4.76  |
| 43   | Kazakhstan                 | 5.20  | 29.76  | 106  | Viet Nam               | 1.00  | 4.76  |
| 45   | Brazil                     | 5.00  | 28.57  | 106  | Zambia                 | 1.00  | 4.76  |
| 45   | Turkey                     | 5.00  | 28.57  | 109  | Senegal                | 0.90  | 4.17  |
| 47   | Argentina                  | 4.80  | 27.38  | 110  | Madagascar             | 0.80  | 3.57  |
| 47   | Austria                    | 4.80  | 27.38  | 110  | Mali                   | 0.80  | 3.57  |
| 49   | Malaysia                   | 4.70  | 26.79  | 112  | Ethiopia               | 0.70  | 2.98  |
| 50   | Croatia                    | 4.60  | 26.19  | 112  | Morocco                | 0.70  | 2.98  |
| 50   | Germany                    | 4.60  | 26.19  | 112  | Peru                   | 0.70  | 2.98  |
| 50   | Hungary                    | 4.60  | 26.19  | 115  | Malawi                 | 0.60  | 2.38  |
| 53   | Sri Lanka                  | 4.50  | 25.60  | 115  | Nepal                  | 0.60  | 2.38  |
| 54   | Mauritius                  | 4.40  | 25.00  | 115  | Rwanda                 | 0.60  | 2.38  |
| 54   | Namibia                    | 4.40  | 25.00  | 118  | Gambia                 | 0.50  | 1.79  |
| 54   | Slovakia                   | 4.40  | 25.00  | 118  | Tanzania, United Rep.  | 0.50  | 1.79  |
| 57   | Venezuela, Bolivarian Rep. | 4.20  | 23.81  | 120  | Uganda                 | 0.40  | 1.19  |
| 58   | Saudi Arabia               | 4.10  | 23.21  | 121  | Mozambique             | 0.30  | 0.60  |
| 58   | Spain                      | 4.10  | 23.21  | 122  | Burundi                | 0.20  | 0.00  |
| 60   | Paraguay                   | 3.90  | 22.02  |      | Cameroon               | n/a   | n/a   |
| 60   | Thailand                   | 3.90  | 22.02  |      | Jordan                 | n/a   | n/a   |
| 62   | Italy                      | 3.80  | 21.43  |      | Kenya                  | n/a   | n/a   |
| 63   | Cyprus                     | 3.70  | 20.83  |      |                        |       |       |

**SOURCE:** International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

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## 6.1.6 Availability of scientists and engineers

Average answer to the question: In your country, to what extent are scientists and engineers available?  
[1 = not at all; 7 = widely available] | 2017

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Finland.....                  | 6.03  | 100.00 | 64   | Argentina.....                 | 3.94  | 39.05 |
| 2    | United States of America..... | 5.75  | 91.76  | 64   | Kazakhstan.....                | 3.94  | 39.05 |
| 3    | United Arab Emirates.....     | 5.44  | 82.89  | 66   | Serbia.....                    | 3.93  | 38.67 |
| 4    | Canada.....                   | 5.44  | 82.80  | 67   | Slovenia.....                  | 3.93  | 38.64 |
| 5    | Qatar.....                    | 5.38  | 81.10  | 68   | Guatemala.....                 | 3.91  | 38.17 |
| 6    | Israel.....                   | 5.34  | 79.79  | 69   | Mauritius.....                 | 3.89  | 37.50 |
| 7    | Malaysia.....                 | 5.33  | 79.56  | 70   | Colombia.....                  | 3.87  | 36.97 |
| 8    | Japan.....                    | 5.32  | 79.26  | 71   | Czech Republic.....            | 3.83  | 35.84 |
| 9    | Singapore.....                | 5.20  | 75.82  | 72   | Philippines.....               | 3.83  | 35.72 |
| 10   | Greece.....                   | 5.16  | 74.53  | 73   | Oman.....                      | 3.83  | 35.66 |
| 11   | Germany.....                  | 5.15  | 74.42  | 74   | Bangladesh.....                | 3.81  | 35.16 |
| 12   | Switzerland.....              | 5.13  | 73.57  | 75   | Zambia.....                    | 3.80  | 34.99 |
| 13   | Jordan.....                   | 5.11  | 73.01  | 76   | Viet Nam.....                  | 3.80  | 34.87 |
| 14   | Norway.....                   | 5.05  | 71.41  | 77   | Nigeria.....                   | 3.80  | 34.75 |
| 15   | Lebanon.....                  | 5.01  | 70.30  | 78   | Romania.....                   | 3.78  | 34.40 |
| 16   | Australia.....                | 4.89  | 66.76  | 79   | Ghana.....                     | 3.78  | 34.32 |
| 17   | United Kingdom.....           | 4.89  | 66.68  | 80   | Congo, Dem. Rep.....           | 3.77  | 33.85 |
| 18   | Iceland.....                  | 4.86  | 65.80  | 81   | Algeria.....                   | 3.74  | 32.97 |
| 19   | Netherlands.....              | 4.86  | 65.68  | 82   | Tanzania, United Rep.....      | 3.72  | 32.62 |
| 20   | Sweden.....                   | 4.84  | 65.30  | 83   | Montenegro.....                | 3.70  | 31.95 |
| 21   | Ireland.....                  | 4.81  | 64.22  | 84   | Senegal.....                   | 3.69  | 31.72 |
| 22   | Chile.....                    | 4.79  | 63.76  | 85   | Madagascar.....                | 3.66  | 30.64 |
| 23   | Azerbaijan.....               | 4.75  | 62.56  | 86   | Brunei Darussalam.....         | 3.63  | 29.85 |
| 24   | Ukraine.....                  | 4.72  | 61.80  | 87   | Brazil.....                    | 3.62  | 29.67 |
| 25   | New Zealand.....              | 4.70  | 61.21  | 88   | Hungary.....                   | 3.60  | 29.12 |
| 26   | Costa Rica.....               | 4.70  | 61.13  | 89   | Ethiopia.....                  | 3.60  | 29.00 |
| 27   | Portugal.....                 | 4.70  | 61.10  | 90   | Bulgaria.....                  | 3.58  | 28.42 |
| 28   | China.....                    | 4.68  | 60.54  | 91   | Nepal.....                     | 3.58  | 28.39 |
| 29   | France.....                   | 4.65  | 59.64  | 92   | Croatia.....                   | 3.58  | 28.33 |
| 30   | India.....                    | 4.63  | 59.05  | 93   | Honduras.....                  | 3.57  | 28.18 |
| 31   | Cyprus.....                   | 4.57  | 57.45  | 94   | Cameroon.....                  | 3.56  | 27.75 |
| 32   | Saudi Arabia.....             | 4.56  | 57.04  | 95   | Kuwait.....                    | 3.55  | 27.54 |
| 33   | Indonesia.....                | 4.54  | 56.60  | 96   | Botswana.....                  | 3.54  | 27.22 |
| 34   | Austria.....                  | 4.53  | 56.07  | 96   | South Africa.....              | 3.54  | 27.22 |
| 34   | Italy.....                    | 4.53  | 56.07  | 98   | Uruguay.....                   | 3.50  | 26.11 |
| 36   | Korea, Rep.....               | 4.51  | 55.58  | 99   | Peru.....                      | 3.48  | 25.55 |
| 37   | Iran, Islamic Rep.....        | 4.48  | 54.70  | 100  | Namibia.....                   | 3.46  | 25.03 |
| 38   | Spain.....                    | 4.47  | 54.41  | 101  | Slovakia.....                  | 3.46  | 25.00 |
| 39   | Kenya.....                    | 4.45  | 53.97  | 102  | Mali.....                      | 3.46  | 24.88 |
| 40   | Belgium.....                  | 4.45  | 53.91  | 103  | Dominican Republic.....        | 3.44  | 24.42 |
| 41   | Tunisia.....                  | 4.40  | 52.34  | 104  | Bosnia and Herzegovina.....    | 3.44  | 24.30 |
| 42   | Denmark.....                  | 4.40  | 52.28  | 105  | Latvia.....                    | 3.40  | 23.16 |
| 43   | Bahrain.....                  | 4.38  | 51.81  | 106  | Malawi.....                    | 3.39  | 22.84 |
| 44   | Estonia.....                  | 4.33  | 50.32  | 107  | Ecuador.....                   | 3.38  | 22.46 |
| 45   | Trinidad and Tobago.....      | 4.3   | 49.47  | 108  | Kyrgyzstan.....                | 3.31  | 20.50 |
| 46   | Armenia.....                  | 4.30  | 49.45  | 109  | Albania.....                   | 3.28  | 19.71 |
| 47   | Turkey.....                   | 4.26  | 48.25  | 110  | Gambia.....                    | 3.26  | 18.98 |
| 48   | Russian Federation.....       | 4.25  | 48.10  | 111  | Bhutan.....                    | 3.24  | 18.52 |
| 49   | Tajikistan.....               | 4.25  | 48.07  | 112  | Cambodia.....                  | 3.21  | 17.64 |
| 50   | Poland.....                   | 4.19  | 46.23  | 113  | Laos.....                      | 3.20  | 17.23 |
| 51   | Mexico.....                   | 4.18  | 45.91  | 114  | Yemen.....                     | 3.16  | 16.03 |
| 52   | Sri Lanka.....                | 4.17  | 45.74  | 115  | Moldova, Rep.....              | 3.11  | 14.84 |
| 53   | Egypt.....                    | 4.12  | 44.25  | 115  | Zimbabwe.....                  | 3.11  | 14.84 |
| 54   | Thailand.....                 | 4.12  | 44.16  | 117  | Mozambique.....                | 3.11  | 14.75 |
| 55   | Lithuania.....                | 4.11  | 43.95  | 118  | Burundi.....                   | 3.05  | 13.03 |
| 56   | Rwanda.....                   | 4.10  | 43.66  | 119  | Georgia.....                   | 3.02  | 12.15 |
| 57   | Uganda.....                   | 4.10  | 43.49  | 120  | Venezuela, Bolivarian Rep..... | 2.92  | 9.20  |
| 58   | Morocco.....                  | 4.08  | 43.11  | 121  | Lesotho.....                   | 2.92  | 9.02  |
| 59   | Luxembourg.....               | 4.01  | 40.92  | 122  | Nicaragua.....                 | 2.84  | 6.86  |
| 59   | Mongolia.....                 | 4.01  | 40.92  | 123  | Paraguay.....                  | 2.81  | 6.05  |
| 61   | Pakistan.....                 | 3.98  | 40.01  | 124  | Liberia.....                   | 2.71  | 3.13  |
| 62   | Panama.....                   | 3.97  | 39.95  | 125  | El Salvador.....               | 2.61  | 0.00  |
| 63   | Malta.....                    | 3.97  | 39.81  |      |                                |       |       |

SOURCE: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.2.1 Innovation output

### Innovation output sub-index | 2018

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 67.13 | 100.00 | 64   | South Africa.....              | 24.89 | 28.68 |
| 2    | Netherlands.....              | 60.19 | 88.28  | 65   | Panama.....                    | 24.55 | 28.11 |
| 3    | Sweden.....                   | 56.94 | 82.80  | 66   | Jordan.....                    | 24.19 | 27.50 |
| 4    | Luxembourg.....               | 52.87 | 75.92  | 67   | Philippines.....               | 23.98 | 27.15 |
| 5    | Germany.....                  | 52.79 | 75.79  | 68   | Morocco.....                   | 23.50 | 26.34 |
| 6    | United Kingdom.....           | 52.37 | 75.08  | 69   | Brazil.....                    | 23.49 | 26.32 |
| 7    | United States of America..... | 51.81 | 74.13  | 70   | Tanzania, United Rep. ....     | 23.47 | 26.29 |
| 8    | Finland.....                  | 51.38 | 73.41  | 71   | Colombia.....                  | 22.52 | 24.68 |
| 9    | Ireland.....                  | 51.25 | 73.19  | 72   | Indonesia.....                 | 22.47 | 24.60 |
| 10   | China.....                    | 50.98 | 72.73  | 73   | Bahrain.....                   | 22.41 | 24.50 |
| 11   | Israel.....                   | 50.83 | 72.48  | 74   | Oman.....                      | 22.18 | 24.11 |
| 12   | Korea, Rep.....               | 49.84 | 70.81  | 75   | Dominican Republic.....        | 21.89 | 23.62 |
| 13   | Denmark.....                  | 49.34 | 69.96  | 76   | Saudi Arabia.....              | 21.81 | 23.48 |
| 14   | Malta.....                    | 45.84 | 64.06  | 77   | Egypt.....                     | 21.62 | 23.16 |
| 15   | Singapore.....                | 45.43 | 63.36  | 78   | Sri Lanka.....                 | 21.06 | 22.22 |
| 16   | France.....                   | 45.40 | 63.31  | 79   | Argentina.....                 | 20.75 | 21.70 |
| 17   | Estonia.....                  | 45.39 | 63.30  | 80   | Bosnia and Herzegovina.....    | 20.60 | 21.44 |
| 18   | Japan.....                    | 44.49 | 61.78  | 81   | Peru.....                      | 20.48 | 21.24 |
| 19   | Iceland.....                  | 44.26 | 61.39  | 82   | Cambodia.....                  | 20.32 | 20.97 |
| 20   | Czech Republic.....           | 43.23 | 59.65  | 83   | Madagascar.....                | 20.21 | 20.78 |
| 21   | Cyprus.....                   | 42.30 | 58.08  | 84   | Paraguay.....                  | 20.09 | 20.58 |
| 22   | Belgium.....                  | 41.47 | 56.68  | 85   | Azerbaijan.....                | 20.00 | 20.43 |
| 23   | Norway.....                   | 41.08 | 56.02  | 86   | Tajikistan.....                | 19.98 | 20.40 |
| 24   | Hungary.....                  | 40.95 | 55.80  | 87   | Mauritius.....                 | 19.90 | 20.26 |
| 25   | Canada.....                   | 40.28 | 54.67  | 88   | Senegal.....                   | 19.87 | 20.21 |
| 26   | Spain.....                    | 40.20 | 54.53  | 89   | Kazakhstan.....                | 19.28 | 19.21 |
| 27   | Austria.....                  | 40.02 | 54.23  | 90   | Pakistan.....                  | 19.19 | 19.06 |
| 28   | Slovenia.....                 | 39.82 | 53.89  | 91   | Lebanon.....                   | 18.70 | 18.23 |
| 29   | New Zealand.....              | 39.17 | 52.79  | 92   | Albania.....                   | 18.39 | 17.71 |
| 30   | Australia.....                | 38.30 | 51.33  | 93   | Guatemala.....                 | 18.35 | 17.64 |
| 31   | Italy.....                    | 38.28 | 51.29  | 94   | Ecuador.....                   | 18.11 | 17.24 |
| 32   | Portugal.....                 | 37.82 | 50.51  | 95   | Cameroon.....                  | 17.60 | 16.38 |
| 33   | Bulgaria.....                 | 37.68 | 50.28  | 96   | Zimbabwe.....                  | 17.36 | 15.97 |
| 34   | Ukraine.....                  | 36.59 | 48.44  | 97   | Mali.....                      | 17.23 | 15.75 |
| 35   | Slovakia.....                 | 36.42 | 48.15  | 98   | Kyrgyzstan.....                | 17.14 | 15.60 |
| 36   | Moldova, Rep.....             | 35.41 | 46.45  | 99   | Ghana.....                     | 16.63 | 14.74 |
| 37   | Latvia.....                   | 35.27 | 46.21  | 100  | Namibia.....                   | 16.44 | 14.42 |
| 38   | Malaysia.....                 | 34.26 | 44.50  | 101  | Trinidad and Tobago.....       | 16.08 | 13.81 |
| 39   | Poland.....                   | 33.92 | 43.93  | 102  | Bangladesh.....                | 16.01 | 13.69 |
| 40   | Viet Nam.....                 | 33.70 | 43.56  | 103  | Honduras.....                  | 15.99 | 13.66 |
| 41   | Croatia.....                  | 33.52 | 43.26  | 104  | Botswana.....                  | 15.85 | 13.42 |
| 42   | Turkey.....                   | 32.19 | 41.01  | 105  | Malawi.....                    | 15.72 | 13.20 |
| 43   | Lithuania.....                | 31.77 | 40.30  | 106  | Mozambique.....                | 15.71 | 13.19 |
| 44   | Thailand.....                 | 31.51 | 39.86  | 107  | Uganda.....                    | 15.69 | 13.15 |
| 45   | Iran, Islamic Rep.....        | 30.16 | 37.58  | 108  | Brunei Darussalam.....         | 15.63 | 13.05 |
| 46   | Mongolia.....                 | 30.06 | 37.41  | 109  | El Salvador.....               | 15.17 | 12.27 |
| 47   | Romania.....                  | 29.84 | 37.04  | 110  | Nepal.....                     | 15.03 | 12.04 |
| 48   | Kuwait.....                   | 29.36 | 36.23  | 111  | Nigeria.....                   | 14.89 | 11.80 |
| 49   | Armenia.....                  | 29.21 | 35.98  | 112  | Algeria.....                   | 14.07 | 10.42 |
| 50   | Costa Rica.....               | 28.95 | 35.54  | 113  | Zambia.....                    | 12.77 | 8.22  |
| 51   | Greece.....                   | 28.75 | 35.20  | 114  | Rwanda.....                    | 12.59 | 7.92  |
| 52   | Chile.....                    | 28.41 | 34.63  | 115  | Yemen.....                     | 7.90  | 0.00  |
| 53   | United Arab Emirates.....     | 28.36 | 34.54  |      | Bhutan.....                    | n/a   | n/a   |
| 54   | Montenegro.....               | 28.23 | 34.32  |      | Burundi.....                   | n/a   | n/a   |
| 55   | Russian Federation.....       | 27.91 | 33.78  |      | Congo, Dem. Rep.....           | n/a   | n/a   |
| 56   | India.....                    | 27.83 | 33.65  |      | Ethiopia.....                  | n/a   | n/a   |
| 57   | Serbia.....                   | 27.42 | 32.96  |      | Gambia.....                    | n/a   | n/a   |
| 58   | Uruguay.....                  | 26.77 | 31.86  |      | Laos.....                      | n/a   | n/a   |
| 59   | Qatar.....                    | 26.49 | 31.39  |      | Lesotho.....                   | n/a   | n/a   |
| 60   | Mexico.....                   | 26.35 | 31.15  |      | Liberia.....                   | n/a   | n/a   |
| 61   | Georgia.....                  | 25.65 | 29.97  |      | Nicaragua.....                 | n/a   | n/a   |
| 62   | Tunisia.....                  | 25.47 | 29.66  |      | Venezuela, Bolivarian Rep..... | n/a   | n/a   |
| 63   | Kenya.....                    | 25.30 | 29.38  |      |                                |       |       |

**SOURCE:** INSEAD, Cornell University, and World Intellectual Property Organization, *The Global Innovation Index 2018* (<https://www.globalinnovationindex.org>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.2.2 High-value exports

### High technology manufactures (%) | 2016

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Philippines              | 55.10 | 100.00 | 64   | Tunisia                    | 6.07  | 11.01 |
| 1    | Singapore                | 67.43 | 100.00 | 65   | Armenia                    | 5.94  | 10.77 |
| 3    | Malaysia                 | 42.97 | 77.99  | 66   | Indonesia                  | 5.79  | 10.50 |
| 4    | Laos                     | 33.58 | 60.94  | 67   | Panama                     | 5.73  | 10.39 |
| 5    | Kazakhstan               | 30.39 | 55.15  | 68   | Guatemala                  | 5.45  | 9.88  |
| 6    | Ireland                  | 29.09 | 52.79  | 69   | South Africa               | 5.29  | 9.60  |
| 7    | Switzerland              | 27.08 | 49.15  | 70   | Portugal                   | 5.29  | 9.59  |
| 8    | Viet Nam                 | 26.93 | 48.87  | 71   | Zambia                     | 5.27  | 9.56  |
| 9    | France                   | 26.67 | 48.40  | 72   | Zimbabwe                   | 5.21  | 9.44  |
| 10   | Korea, Rep.              | 26.58 | 48.24  | 73   | Mali                       | 4.71  | 8.54  |
| 11   | China                    | 25.24 | 45.80  | 74   | Yemen                      | 4.70  | 8.52  |
| 12   | Iceland                  | 23.25 | 42.19  | 75   | El Salvador                | 4.62  | 8.37  |
| 13   | United Kingdom           | 21.83 | 39.62  | 76   | Dominican Republic         | 4.38  | 7.94  |
| 14   | Thailand                 | 21.51 | 39.04  | 77   | Peru                       | 4.25  | 7.71  |
| 15   | Malta                    | 21.47 | 38.97  | 78   | Iran, Islamic Rep.         | 4.12  | 7.46  |
| 16   | United States of America | 19.96 | 36.22  | 79   | Georgia                    | 3.90  | 7.07  |
| 17   | Norway                   | 19.28 | 34.99  | 80   | Kenya                      | 3.76  | 6.82  |
| 18   | Kyrgyzstan               | 18.49 | 33.55  | 81   | Cameroon                   | 3.71  | 6.73  |
| 19   | Israel                   | 18.38 | 33.35  | 82   | Morocco                    | 3.67  | 6.66  |
| 20   | Costa Rica               | 18.26 | 33.13  | 83   | Serbia                     | 3.63  | 6.59  |
| 21   | Brunei Darussalam        | 17.93 | 32.54  | 84   | Burundi                    | 3.49  | 6.33  |
| 22   | Netherlands              | 17.78 | 32.26  | 85   | Moldova, Rep.              | 3.10  | 5.63  |
| 23   | Ethiopia                 | 17.24 | 31.29  | 86   | Saudi Arabia               | 2.97  | 5.38  |
| 24   | Germany                  | 16.91 | 30.68  | 87   | Oman                       | 2.83  | 5.12  |
| 25   | Mongolia                 | 16.32 | 29.61  | 88   | Bosnia and Herzegovina     | 2.61  | 4.73  |
| 26   | Japan                    | 16.22 | 29.43  | 89   | Honduras                   | 2.48  | 4.50  |
| 27   | Denmark                  | 15.67 | 28.44  | 90   | Lebanon                    | 2.37  | 4.30  |
| 28   | Austria                  | 15.31 | 27.79  | 91   | United Arab Emirates       | 2.32  | 4.21  |
| 29   | Mexico                   | 15.29 | 27.74  | 92   | Qatar                      | 2.20  | 3.98  |
| 30   | Australia                | 14.78 | 26.82  | 93   | Namibia                    | 2.19  | 3.98  |
| 31   | Sweden                   | 14.29 | 25.92  | 94   | Malawi                     | 2.16  | 3.91  |
| 32   | Hungary                  | 14.04 | 25.47  | 95   | Azerbaijan                 | 2.08  | 3.78  |
| 33   | Czech Republic           | 13.88 | 25.18  | 96   | Senegal                    | 2.08  | 3.77  |
| 34   | Brazil                   | 13.45 | 24.40  | 97   | Turkey                     | 2.03  | 3.68  |
| 35   | Canada                   | 12.93 | 23.47  | 98   | Tanzania, United Rep.      | 2.02  | 3.65  |
| 36   | Belgium                  | 12.54 | 22.75  | 99   | Nigeria                    | 1.97  | 3.57  |
| 37   | Latvia                   | 12.51 | 22.70  | 100  | Jordan                     | 1.92  | 3.48  |
| 38   | Rwanda                   | 12.28 | 22.28  | 101  | Kuwait                     | 1.91  | 3.46  |
| 39   | Lithuania                | 11.75 | 21.32  | 102  | Pakistan                   | 1.91  | 3.46  |
| 40   | Croatia                  | 11.62 | 21.08  | 103  | Uganda                     | 1.83  | 3.32  |
| 41   | Mozambique               | 11.61 | 21.07  | 104  | Ghana                      | 1.51  | 2.73  |
| 42   | Greece                   | 11.44 | 20.76  | 105  | Gambia                     | 1.25  | 2.26  |
| 43   | Russian Federation       | 10.72 | 19.45  | 106  | Venezuela, Bolivarian Rep. | 1.13  | 2.05  |
| 44   | Estonia                  | 10.34 | 18.77  | 107  | Bahrain                    | 1.05  | 1.90  |
| 45   | New Zealand              | 10.14 | 18.40  | 108  | Sri Lanka                  | 0.84  | 1.52  |
| 46   | Slovakia                 | 9.83  | 17.83  | 109  | Madagascar                 | 0.65  | 1.17  |
| 47   | Colombia                 | 9.83  | 17.83  | 110  | Albania                    | 0.65  | 1.17  |
| 48   | Uruguay                  | 9.71  | 17.61  | 111  | Nepal                      | 0.62  | 1.12  |
| 49   | Argentina                | 8.79  | 15.95  | 112  | Nicaragua                  | 0.49  | 0.88  |
| 50   | Romania                  | 8.50  | 15.42  | 113  | Egypt                      | 0.49  | 0.88  |
| 51   | Poland                   | 8.46  | 15.34  | 114  | Cambodia                   | 0.43  | 0.78  |
| 52   | Finland                  | 8.44  | 15.31  | 115  | Botswana                   | 0.40  | 0.72  |
| 53   | Ecuador                  | 8.37  | 15.19  | 116  | Algeria                    | 0.34  | 0.62  |
| 54   | Bulgaria                 | 7.96  | 14.44  | 117  | Bangladesh                 | 0.30  | 0.54  |
| 55   | Luxembourg               | 7.60  | 13.79  | 118  | Trinidad and Tobago        | 0.13  | 0.22  |
| 56   | Italy                    | 7.49  | 13.58  | 119  | Mauritius                  | 0.07  | 0.12  |
| 57   | Cyprus                   | 7.28  | 13.21  | 120  | Bhutan                     | 0.02  | 0.04  |
| 58   | Ukraine                  | 7.27  | 13.19  | 121  | Lesotho                    | 0.00  | 0.00  |
| 59   | Paraguay                 | 7.25  | 13.14  |      | Congo, Dem. Rep.           | n/a   | n/a   |
| 60   | India                    | 7.13  | 12.93  |      | Liberia                    | n/a   | n/a   |
| 61   | Chile                    | 7.06  | 12.81  |      | Montenegro                 | n/a   | n/a   |
| 62   | Spain                    | 6.98  | 12.66  |      | Tajikistan                 | n/a   | n/a   |
| 63   | Slovenia                 | 6.34  | 11.50  |      |                            |       |       |

**SOURCE:** World Bank, World Integrated Trade Solution (<http://wits.worldbank.org/>). The classification of exports is based on Lall, S. (2000), The Technological Structure and Performance of Developing Country Manufactured Exports, *Oxford Development Studies*, 28(3), 1985–1989

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.2.3 New product entrepreneurial activity

### New product entrepreneurial activity (%) | 2017

| Rank | Country                  | Value | Score  | Rank | Country                    | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Luxembourg               | 57.13 | 100.00 | 64   | Iran, Islamic Rep.         | 16.15 | 20.78 |
| 2    | Chile                    | 54.01 | 93.97  | 65   | Trinidad and Tobago        | 15.96 | 20.41 |
| 3    | France                   | 48.63 | 83.57  | 66   | Cameroon                   | 15.90 | 20.30 |
| 4    | Lebanon                  | 46.91 | 80.24  | 67   | El Salvador                | 14.90 | 18.36 |
| 5    | Denmark                  | 46.34 | 79.14  | 68   | Colombia                   | 14.87 | 18.31 |
| 6    | Canada                   | 43.18 | 73.03  | 69   | Ghana                      | 14.73 | 18.04 |
| 7    | Ireland                  | 42.73 | 72.16  | 70   | Argentina                  | 13.98 | 16.59 |
| 8    | Cyprus                   | 40.92 | 68.66  | 71   | Norway                     | 13.97 | 16.57 |
| 9    | Namibia                  | 40.08 | 67.04  | 72   | Brazil                     | 13.91 | 16.45 |
| 10   | Belgium                  | 39.72 | 66.34  | 73   | Viet Nam                   | 13.86 | 16.35 |
| 11   | Qatar                    | 37.94 | 62.90  | 74   | Ethiopia                   | 13.72 | 16.08 |
| 12   | United States of America | 35.93 | 59.02  | 75   | Venezuela, Bolivarian Rep. | 13.44 | 15.54 |
| 13   | Austria                  | 35.00 | 57.22  | 76   | Bulgaria                   | 13.39 | 15.45 |
| 14   | Slovenia                 | 34.24 | 55.75  | 77   | Poland                     | 12.08 | 12.91 |
| 15   | Tunisia                  | 32.17 | 51.75  | 78   | Indonesia                  | 11.58 | 11.95 |
| 16   | Philippines              | 31.84 | 51.11  | 79   | Algeria                    | 11.48 | 11.75 |
| 17   | Mexico                   | 31.71 | 50.86  | 80   | Bosnia and Herzegovina     | 10.93 | 10.69 |
| 18   | Turkey                   | 30.80 | 49.10  | 81   | Panama                     | 8.51  | 6.01  |
| 19   | Estonia                  | 30.20 | 47.94  | 82   | Senegal                    | 8.21  | 5.43  |
| 20   | Romania                  | 30.00 | 47.55  | 83   | Zambia                     | 7.86  | 4.76  |
| 21   | South Africa             | 29.66 | 46.90  | 84   | Uganda                     | 7.56  | 4.18  |
| 22   | Lithuania                | 29.55 | 46.68  | 85   | Bangladesh                 | 6.78  | 2.67  |
| 23   | Guatemala                | 29.51 | 46.61  | 86   | Russian Federation         | 5.40  | 0.00  |
| 24   | Finland                  | 29.40 | 46.39  | 84   | Albania                    | 19.76 | 12.87 |
| 25   | Malaysia                 | 29.33 | 46.26  | 85   | Armenia                    | 17.51 | 9.97  |
| 26   | Thailand                 | 29.29 | 46.18  | 86   | Azerbaijan                 | 14.85 | 6.54  |
| 27   | Slovakia                 | 29.24 | 46.09  | 87   | Bahrain                    | 12.48 | 3.49  |
| 28   | Sweden                   | 29.05 | 45.72  | 88   | Bhutan                     | 10.54 | 0.99  |
| 29   | Australia                | 28.51 | 44.67  | 89   | Brunei Darussalam          | 9.77  | 0.00  |
| 30   | Pakistan                 | 28.49 | 44.64  |      | Burundi                    | n/a   | n/a   |
| 31   | Latvia                   | 28.41 | 44.48  |      | Cambodia                   | n/a   | n/a   |
| 32   | Italy                    | 28.22 | 44.11  |      | Congo, Dem. Rep.           | n/a   | n/a   |
| 33   | Malawi                   | 28.21 | 44.09  |      | Dominican Republic         | n/a   | n/a   |
| 34   | Saudi Arabia             | 27.60 | 42.92  |      | Gambia                     | n/a   | n/a   |
| 35   | Czech Republic           | 27.51 | 42.74  |      | Honduras                   | n/a   | n/a   |
| 36   | United Kingdom           | 27.06 | 41.87  |      | Iceland                    | n/a   | n/a   |
| 37   | Israel                   | 26.70 | 41.18  |      | Kenya                      | n/a   | n/a   |
| 38   | Greece                   | 26.42 | 40.63  |      | Kuwait                     | n/a   | n/a   |
| 39   | Korea, Rep.              | 26.35 | 40.50  |      | Kyrgyzstan                 | n/a   | n/a   |
| 40   | Uruguay                  | 26.25 | 40.31  |      | Laos                       | n/a   | n/a   |
| 41   | India                    | 25.60 | 39.05  |      | Lesotho                    | n/a   | n/a   |
| 42   | China                    | 25.51 | 38.87  |      | Liberia                    | n/a   | n/a   |
| 43   | Egypt                    | 25.26 | 38.39  |      | Mali                       | n/a   | n/a   |
| 44   | Spain                    | 25.01 | 37.91  |      | Malta                      | n/a   | n/a   |
| 45   | Switzerland              | 24.93 | 37.75  |      | Mauritius                  | n/a   | n/a   |
| 46   | Japan                    | 24.68 | 37.27  |      | Moldova, Rep.              | n/a   | n/a   |
| 47   | Jordan                   | 23.90 | 35.76  |      | Mongolia                   | n/a   | n/a   |
| 48   | Germany                  | 23.74 | 35.45  |      | Montenegro                 | n/a   | n/a   |
| 49   | Kazakhstan               | 23.54 | 35.07  |      | Mozambique                 | n/a   | n/a   |
| 50   | Costa Rica               | 23.18 | 34.37  |      | Nepal                      | n/a   | n/a   |
| 51   | Netherlands              | 22.52 | 33.09  |      | New Zealand                | n/a   | n/a   |
| 52   | Portugal                 | 21.00 | 30.16  |      | Nicaragua                  | n/a   | n/a   |
| 53   | Madagascar               | 20.89 | 29.94  |      | Oman                       | n/a   | n/a   |
| 54   | Singapore                | 20.47 | 29.13  |      | Paraguay                   | n/a   | n/a   |
| 55   | Hungary                  | 20.40 | 29.00  |      | Rwanda                     | n/a   | n/a   |
| 56   | Botswana                 | 20.27 | 28.75  |      | Serbia                     | n/a   | n/a   |
| 57   | Georgia                  | 20.10 | 28.42  |      | Sri Lanka                  | n/a   | n/a   |
| 58   | Croatia                  | 19.86 | 27.95  |      | Tajikistan                 | n/a   | n/a   |
| 59   | Morocco                  | 18.68 | 25.67  |      | Tanzania, United Rep.      | n/a   | n/a   |
| 60   | United Arab Emirates     | 18.67 | 25.65  |      | Ukraine                    | n/a   | n/a   |
| 61   | Nigeria                  | 18.30 | 24.94  |      | Yemen                      | n/a   | n/a   |
| 62   | Peru                     | 17.80 | 23.97  |      | Zimbabwe                   | n/a   | n/a   |
| 63   | Ecuador                  | 16.54 | 21.53  |      |                            |       |       |

**SOURCE:** Global Entrepreneurship Research Association, Global Entrepreneurship Monitor database ([www.gemconsortium.org/data](http://www.gemconsortium.org/data))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.2.4 New business density

### New corporate registrations (per 1,000 working-age population) | 2016

| Rank | Country              | Value | Score  | Rank | Country                    | Value | Score |
|------|----------------------|-------|--------|------|----------------------------|-------|-------|
| 1    | Estonia              | 20.76 | 100.00 | 64   | Turkey                     | 1.18  | 5.64  |
| 2    | Botswana             | 18.37 | 88.48  | 65   | Bosnia and Herzegovina     | 1.13  | 5.40  |
| 3    | Malta                | 17.89 | 86.17  | 66   | Zambia                     | 1.12  | 5.35  |
| 4    | Cyprus               | 16.56 | 79.76  | 67   | Namibia                    | 1.09  | 5.20  |
| 5    | United Kingdom       | 15.74 | 75.81  | 68   | Azerbaijan                 | 1.03  | 4.92  |
| 6    | Australia            | 15.51 | 74.70  | 69   | Thailand                   | 0.99  | 4.72  |
| 7    | Luxembourg           | 15.35 | 73.93  | 70   | Nepal                      | 0.98  | 4.67  |
| 8    | New Zealand          | 14.50 | 69.83  | 71   | Ghana                      | 0.90  | 4.29  |
| 9    | Iceland              | 12.14 | 58.46  | 72   | Kenya                      | 0.84  | 4.00  |
| 10   | Bulgaria             | 10.89 | 52.43  | 72   | Panama                     | 0.84  | 4.00  |
| 11   | South Africa         | 10.22 | 49.20  | 74   | Greece                     | 0.77  | 3.66  |
| 12   | Denmark              | 9.91  | 47.71  | 75   | Nigeria                    | 0.76  | 3.61  |
| 13   | Mauritius            | 9.78  | 47.08  | 76   | Uganda                     | 0.70  | 3.33  |
| 14   | Chile                | 8.93  | 42.99  | 77   | Austria                    | 0.60  | 2.84  |
| 15   | Singapore            | 8.62  | 41.49  | 77   | Jordan                     | 0.60  | 2.84  |
| 16   | Georgia              | 8.37  | 40.29  | 79   | Algeria                    | 0.58  | 2.75  |
| 17   | Norway               | 8.15  | 39.23  | 80   | Guatemala                  | 0.54  | 2.55  |
| 18   | Sweden               | 8.09  | 38.94  | 80   | Mexico                     | 0.54  | 2.55  |
| 19   | Latvia               | 8.04  | 38.70  | 82   | El Salvador                | 0.53  | 2.51  |
| 20   | Ireland              | 6.71  | 32.29  | 83   | Sri Lanka                  | 0.51  | 2.41  |
| 21   | Montenegro           | 6.70  | 32.24  | 84   | Saudi Arabia               | 0.44  | 2.07  |
| 22   | Mongolia             | 6.31  | 30.36  | 85   | Argentina                  | 0.43  | 2.02  |
| 23   | Netherlands          | 6.07  | 29.20  | 86   | Senegal                    | 0.42  | 1.98  |
| 24   | Romania              | 5.61  | 26.99  | 87   | Indonesia                  | 0.33  | 1.54  |
| 25   | Portugal             | 5.01  | 24.10  | 87   | Philippines                | 0.33  | 1.54  |
| 26   | Croatia              | 4.96  | 23.86  | 89   | Laos                       | 0.30  | 1.40  |
| 27   | Slovakia             | 4.70  | 22.60  | 90   | Tajikistan                 | 0.18  | 0.82  |
| 28   | Russian Federation   | 4.34  | 20.87  | 91   | Japan                      | 0.15  | 0.67  |
| 29   | Switzerland          | 4.31  | 20.72  | 92   | Paraguay                   | 0.14  | 0.63  |
| 30   | Czech Republic       | 3.98  | 19.13  | 93   | Brazil                     | 0.13  | 0.58  |
| 31   | Finland              | 3.95  | 18.99  | 94   | India                      | 0.11  | 0.48  |
| 32   | Belgium              | 3.72  | 17.88  | 95   | Bangladesh                 | 0.09  | 0.39  |
| 33   | Peru                 | 3.63  | 17.45  | 95   | Bhutan                     | 0.09  | 0.39  |
| 34   | Israel               | 3.44  | 16.53  | 97   | Malawi                     | 0.08  | 0.34  |
| 35   | Hungary              | 3.38  | 16.24  | 98   | Madagascar                 | 0.07  | 0.29  |
| 36   | Lithuania            | 3.33  | 16.00  | 99   | Canada                     | 0.06  | 0.24  |
| 37   | Spain                | 3.23  | 15.52  | 99   | Pakistan                   | 0.06  | 0.24  |
| 38   | Slovenia             | 3.13  | 15.04  | 101  | Congo, Dem. Rep.           | 0.04  | 0.14  |
| 39   | Italy                | 2.65  | 12.72  | 102  | Ethiopia                   | 0.03  | 0.10  |
| 40   | United Arab Emirates | 2.62  | 12.58  | 103  | Liberia                    | 0.01  | 0.00  |
| 41   | Korea, Rep.          | 2.58  | 12.39  |      | Bahrain                    | n/a   | n/a   |
| 42   | Brunei Darussalam    | 2.48  | 11.90  |      | Burundi                    | n/a   | n/a   |
| 43   | Colombia             | 2.28  | 10.94  |      | Cambodia                   | n/a   | n/a   |
| 44   | Malaysia             | 2.26  | 10.84  |      | Cameroon                   | n/a   | n/a   |
| 45   | Kazakhstan           | 2.24  | 10.75  |      | China                      | n/a   | n/a   |
| 46   | Oman                 | 2.11  | 10.12  |      | Ecuador                    | n/a   | n/a   |
| 47   | Costa Rica           | 2.10  | 10.07  |      | Egypt                      | n/a   | n/a   |
| 48   | Uruguay              | 2.07  | 9.93   |      | Gambia                     | n/a   | n/a   |
| 49   | Rwanda               | 1.95  | 9.35   |      | Honduras                   | n/a   | n/a   |
| 50   | France               | 1.84  | 8.82   |      | Iran, Islamic Rep.         | n/a   | n/a   |
| 51   | Serbia               | 1.76  | 8.43   |      | Kuwait                     | n/a   | n/a   |
| 52   | Moldova, Rep.        | 1.75  | 8.39   |      | Lebanon                    | n/a   | n/a   |
| 53   | Armenia              | 1.74  | 8.34   |      | Mali                       | n/a   | n/a   |
| 54   | Qatar                | 1.70  | 8.14   |      | Mozambique                 | n/a   | n/a   |
| 55   | Tunisia              | 1.67  | 8.00   |      | Nicaragua                  | n/a   | n/a   |
| 56   | Poland               | 1.66  | 7.95   |      | Tanzania, United Rep.      | n/a   | n/a   |
| 57   | Morocco              | 1.65  | 7.90   |      | Trinidad and Tobago        | n/a   | n/a   |
| 58   | Lesotho              | 1.55  | 7.42   |      | United States of America   | n/a   | n/a   |
| 59   | Ukraine              | 1.54  | 7.37   |      | Venezuela, Bolivarian Rep. | n/a   | n/a   |
| 60   | Dominican Republic   | 1.48  | 7.08   |      | Viet Nam                   | n/a   | n/a   |
| 61   | Albania              | 1.35  | 6.46   |      | Yemen                      | n/a   | n/a   |
| 62   | Germany              | 1.30  | 6.22   |      | Zimbabwe                   | n/a   | n/a   |
| 63   | Kyrgyzstan           | 1.27  | 6.07   |      |                            |       |       |

**SOURCE:** World Bank, Doing Business, Entrepreneurship Project (<http://www.doingbusiness.org/en/data/exploretopics/entrepreneurship>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

## 6.2.5 Scientific journal articles

### Number of scientific and technical journal articles (per 10,000 inhabitants) | 2016

| Rank | Country                       | Value | Score  | Rank | Country                        | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1    | Switzerland.....              | 24.96 | 100.00 | 64   | Bosnia and Herzegovina.....    | 1.45  | 5.77  |
| 2    | Denmark.....                  | 23.35 | 93.55  | 65   | Bahrain.....                   | 1.41  | 5.62  |
| 3    | Australia.....                | 20.76 | 83.18  | 66   | Thailand.....                  | 1.39  | 5.52  |
| 4    | Norway.....                   | 20.31 | 81.36  | 67   | Trinidad and Tobago.....       | 1.35  | 5.38  |
| 5    | Singapore.....                | 20.05 | 80.34  | 68   | Colombia.....                  | 1.25  | 4.96  |
| 6    | Sweden.....                   | 19.80 | 79.34  | 69   | Mauritius.....                 | 1.23  | 4.91  |
| 7    | Finland.....                  | 19.13 | 76.66  | 70   | Morocco.....                   | 1.14  | 4.52  |
| 8    | Iceland.....                  | 19.10 | 76.52  | 71   | Mexico.....                    | 1.12  | 4.47  |
| 9    | Netherlands.....              | 17.48 | 70.03  | 72   | Egypt.....                     | 1.11  | 4.40  |
| 10   | Slovenia.....                 | 16.48 | 66.04  | 73   | Algeria.....                   | 1.08  | 4.28  |
| 11   | Canada.....                   | 15.62 | 62.60  | 74   | Botswana.....                  | 0.99  | 3.92  |
| 12   | New Zealand.....              | 15.57 | 62.38  | 75   | Kazakhstan.....                | 0.87  | 3.44  |
| 13   | Czech Republic.....           | 15.07 | 60.38  | 76   | Moldova, Rep.....              | 0.83  | 3.30  |
| 14   | United Kingdom.....           | 14.77 | 59.18  | 77   | India.....                     | 0.82  | 3.26  |
| 15   | Belgium.....                  | 14.42 | 57.75  | 78   | Costa Rica.....                | 0.77  | 3.04  |
| 16   | Ireland.....                  | 14.20 | 56.88  | 79   | Albania.....                   | 0.67  | 2.63  |
| 17   | Austria.....                  | 14.04 | 56.23  | 80   | Ecuador.....                   | 0.66  | 2.60  |
| 18   | Israel.....                   | 13.65 | 54.68  | 81   | Bhutan.....                    | 0.50  | 1.96  |
| 19   | Luxembourg.....               | 13.64 | 54.66  | 82   | Azerbaijan.....                | 0.49  | 1.91  |
| 20   | Portugal.....                 | 13.38 | 53.60  | 83   | Sri Lanka.....                 | 0.48  | 1.89  |
| 21   | United States of America..... | 12.56 | 50.29  | 84   | Pakistan.....                  | 0.47  | 1.83  |
| 22   | Germany.....                  | 12.47 | 49.95  | 85   | Namibia.....                   | 0.43  | 1.66  |
| 23   | Korea, Rep.....               | 12.25 | 49.08  | 86   | Panama.....                    | 0.39  | 1.52  |
| 24   | Italy.....                    | 11.42 | 45.72  | 87   | Mongolia.....                  | 0.37  | 1.42  |
| 25   | Spain.....                    | 11.34 | 45.43  | 88   | Ghana.....                     | 0.34  | 1.33  |
| 26   | Estonia.....                  | 11.26 | 45.11  | 89   | Peru.....                      | 0.31  | 1.22  |
| 27   | France.....                   | 10.34 | 41.43  | 90   | Viet Nam.....                  | 0.31  | 1.20  |
| 28   | Greece.....                   | 9.97  | 39.92  | 91   | Indonesia.....                 | 0.29  | 1.13  |
| 29   | Slovakia.....                 | 9.85  | 39.45  | 92   | Cameroon.....                  | 0.28  | 1.08  |
| 30   | Croatia.....                  | 9.83  | 39.37  | 93   | Venezuela, Bolivarian Rep..... | 0.27  | 1.03  |
| 31   | Poland.....                   | 8.68  | 34.77  | 94   | Senegal.....                   | 0.22  | 0.85  |
| 32   | Cyprus.....                   | 8.25  | 33.02  | 95   | Gambia.....                    | 0.22  | 0.85  |
| 33   | Lithuania.....                | 7.71  | 30.88  | 96   | Nigeria.....                   | 0.20  | 0.76  |
| 34   | Japan.....                    | 7.61  | 30.48  | 97   | Kenya.....                     | 0.20  | 0.76  |
| 35   | Serbia.....                   | 7.19  | 28.80  | 98   | Nepal.....                     | 0.19  | 0.71  |
| 36   | Malta.....                    | 6.89  | 27.56  | 99   | Zimbabwe.....                  | 0.18  | 0.68  |
| 37   | Latvia.....                   | 6.48  | 25.92  | 100  | Kyrgyzstan.....                | 0.16  | 0.61  |
| 38   | Malaysia.....                 | 6.43  | 25.73  | 101  | Bangladesh.....                | 0.15  | 0.58  |
| 39   | Hungary.....                  | 6.35  | 25.40  | 102  | Philippines.....               | 0.15  | 0.56  |
| 40   | Romania.....                  | 5.20  | 20.82  | 103  | Paraguay.....                  | 0.14  | 0.53  |
| 41   | Brunei Darussalam.....        | 5.06  | 20.24  | 104  | Uganda.....                    | 0.13  | 0.50  |
| 42   | Iran, Islamic Rep.....        | 5.05  | 20.20  | 105  | Laos.....                      | 0.12  | 0.46  |
| 43   | Qatar.....                    | 4.97  | 19.87  | 106  | Malawi.....                    | 0.11  | 0.40  |
| 44   | Tunisia.....                  | 4.57  | 18.26  | 107  | Ethiopia.....                  | 0.11  | 0.39  |
| 45   | Turkey.....                   | 4.2   | 16.79  | 108  | Zambia.....                    | 0.10  | 0.38  |
| 46   | Montenegro.....               | 4.14  | 16.56  | 109  | Lesotho.....                   | 0.10  | 0.37  |
| 47   | Russian Federation.....       | 4.09  | 16.37  | 110  | Rwanda.....                    | 0.09  | 0.34  |
| 48   | Chile.....                    | 3.74  | 14.94  | 111  | Tanzania, United Rep.....      | 0.09  | 0.34  |
| 49   | Bulgaria.....                 | 3.62  | 14.46  | 112  | Cambodia.....                  | 0.07  | 0.25  |
| 50   | China.....                    | 3.07  | 12.28  | 113  | Nicaragua.....                 | 0.06  | 0.19  |
| 51   | Saudi Arabia.....             | 2.80  | 11.20  | 114  | Tajikistan.....                | 0.05  | 0.17  |
| 52   | Brazil.....                   | 2.56  | 10.23  | 115  | Guatemala.....                 | 0.05  | 0.16  |
| 53   | Uruguay.....                  | 2.34  | 9.34   | 116  | Mali.....                      | 0.05  | 0.15  |
| 54   | United Arab Emirates.....     | 2.32  | 9.26   | 117  | El Salvador.....               | 0.04  | 0.14  |
| 55   | Lebanon.....                  | 2.30  | 9.17   | 118  | Madagascar.....                | 0.04  | 0.12  |
| 56   | South Africa.....             | 2.09  | 8.36   | 119  | Yemen.....                     | 0.04  | 0.12  |
| 57   | Argentina.....                | 1.95  | 7.79   | 120  | Honduras.....                  | 0.04  | 0.10  |
| 58   | Kuwait.....                   | 1.79  | 7.12   | 121  | Liberia.....                   | 0.04  | 0.10  |
| 59   | Armenia.....                  | 1.78  | 7.09   | 122  | Mozambique.....                | 0.03  | 0.10  |
| 60   | Oman.....                     | 1.71  | 6.83   | 123  | Dominican Republic.....        | 0.03  | 0.07  |
| 61   | Jordan.....                   | 1.70  | 6.79   | 124  | Congo, Dem. Rep.....           | 0.01  | 0.02  |
| 62   | Ukraine.....                  | 1.64  | 6.55   | 125  | Burundi.....                   | 0.01  | 0.00  |
| 63   | Georgia.....                  | 1.56  | 6.21   |      |                                |       |       |

**SOURCE:** World Bank, World Development Indicators based on National Science Foundation, Science and Engineering Indicators; population data come from World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2007.

# Appendices





# Appendix I

Technical Notes



# Technical Notes

## Audit by the Joint Research Centre of the European Commission

The Joint Research Centre (JRC) of the European Commission has conducted extensive research on the development of composite indicators, most notably publishing the *Handbook on Constructing Composite Indicators: Methodology and User Guide* in collaboration with the Organisation for Economic Co-operation and Development (OECD). For the sixth consecutive edition of the Global Talent Competitiveness Index (GTCI), the GTCI development team engaged the JRC to conduct an audit.<sup>1</sup> This exercise has provided external validation and further improved the statistical analyses to ensure the consistency and rigour of the GTCI index model.

In July 2018, an earlier version of the index model for the GTCI 2019 was submitted to the JRC team. The results from the preliminary audit were taken into account and are reflected in the final version of the index model, as appropriate. The final audit was then completed in September 2018 based on the latest model, the results of which can be found in Chapter 6.

## Composite Indicators

The GTCI framework builds on six pillars: (1) Enable, (2) Attract, (3) Grow, (4) Retain, (5) Vocational and Technical Skills, and (6) Global Knowledge Skills. Each pillar consists of two to three sub-pillars. Each sub-pillar is composed of three to six variables. Each sub-pillar score is derived from the simple arithmetic average of its individual variables. The successive arithmetic aggregation continues at pillar level.

Overall, the GTCI includes three indices:

- The Talent Competitiveness Input sub-index is the simple average of the first four pillars.
- The Talent Competitiveness Output sub-index is the simple average of the last two pillars.
- The Global Talent Competitiveness Index is the simple average of the six pillars.

## Individual Variables

The GTCI 2019 model includes 68 variables, which fall within the following categories:<sup>2</sup>

1. Hard/quantitative data (25 variables)
2. Index/composite indicator data (15 variables)
3. Survey/qualitative data (28 variables)

## Hard Data

The 25 variables based on hard data were drawn from a variety of public sources, such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Conference on Trade and Development (UNCTAD), the International

Labour Organization (ILO), the World Bank, the OECD, and The Conference Board. Most variables were already scaled at their source and therefore did not need to be re-scaled.

## Indices

The 15 variables measured as indices come from sources such as the World Bank (the World Governance Indicators and the *Doing Business* report series), the International Telecommunication Union, and Transparency International. They also come from other composite indicators such as the Social Progress Index, the Global Innovation Index (Cornell, INSEAD, and the World Intellectual Property Organization), and the Environmental Performance Index (Yale University and Columbia University). There were two main concerns about using 'indices within an index': (1) doubts over its methodology to derive a single score; and (2) the risk of duplicating variables. Despite these concerns, the GTCI team determined that the gains outweighed the downsides, as there are certain phenomena that are best captured by a multi-dimensional index. To address these concerns, only indices that transparently indicate their methodology and are widely well received were included in the GTCI. Additionally, to avoid double-counting, only indices with a narrow focus were selected.

## Survey Data

The 28 variables based on survey data were mainly extracted from the World Economic Forum's Executive Opinion Survey. Qualitative information tends to provide the most current assessment of certain areas related to talent competitiveness for which hard data either do not exist or have low country coverage.

## Country Coverage and Missing Data

The 125 countries covered in the GTCI 2019 were selected based on an aggregate data availability threshold of at least 80% (54 out of 68 variables) and a sub-pillar level data availability threshold of at least 40%. The most recent data points for each country were considered in the calculation, with 2007 as the cut-off year. Meanwhile, each variable had to pass a country-based availability threshold of 50% (63 out of 125 countries). In order to provide transparency and replicability, there was no imputation effort to fill in missing values in the data set. Missing values were noted with 'n/a' and were not considered in the calculation of sub-pillar scores.

## Treatment of Series with Outliers

Inclusion of series with outliers can be problematic and potentially bias the rankings. Outliers were detected based on an absolute value of skewness greater than 2 and kurtosis greater than 3.5.<sup>3</sup> In our data set, there were three variables with outliers.<sup>4</sup> As a

general rule, for variables with one to five outliers, the Winsorisation method should be applied. The values distorting the variable distribution were assigned the next highest value until the reported skewness and/or kurtosis fell within the ranges specified above. For variables with five outliers and above, transformation by natural logarithms, with the following formula, was used:<sup>5</sup>

$$\ln \left[ (\max \times \text{factor} - 1) \times \frac{(\text{value} - \min)}{(\max - \min)} + 1 \right]$$

## Normalisation

To adjust for differences in units of measurement and ranges of variation, all 68 variables were normalised into the [0, 100] range, with higher scores representing better outcomes. A min-max normalisation method was adopted, given the minimum and maximum values of each variable respectively.

For variables where higher values indicate higher outcomes, the following normalisation formula was applied:

$$100 \times \frac{(\text{value} - \min)}{(\max - \min)}$$

For variables where higher values indicate worse outcomes, the following reverse normalisation formula was applied:<sup>6</sup>

$$-100 \times \frac{(\text{value} - \min)}{(\max - \min)}$$

## REFERENCES

- Groeneveld, R. A. & Meeden, G. (1984). Measuring skewness and kurtosis. *Journal of the Royal Statistical Society, Series D (The Statistician)*, 33, 391–399.
- Paruolo, P., Saisana, M., & Saltelli, A. (2013). Ratings and rankings: Voodoo or science? *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 176, (3), 609–634.
- OECD & EC JRC (2008). *Handbook on constructing composite indicators: Methodology and user guide*. Paris: OECD, available at <http://www.oecd.org/std/42495745.pdf>

## ENDNOTES

- 1 The JRC has audited various index projects, including the Global Innovation Index (Cornell, INSEAD and WIPO), the Environment Performance Index (Yale and Columbia), and the Corruption Perceptions Index (Transparency international).
- 2 This is unchanged from the last edition of the GTCL.
- 3 Adopted from Groeneveld & Meeden (1984).
- 4 The three indicators are: 2.1.3 Migrant stock; 2.1.4 International students; and 6.2.2 High-value exports.
- 5 The formula ensures that natural logarithms are positive and start at zero.
- 6 The reverse normalisation affects three indicators: 1.3.1 Ease of hiring; 1.3.2 Ease of redundancy; and 2.2.1 Tolerance of minorities.

# Appendix II

Sources and Definitions



# Sources and Definitions

## 1 ENABLE

### 1.1 Regulatory Landscape

#### 1.1.1 Government effectiveness

Government effectiveness indicator | 2016

The government effectiveness indicator captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Scores are standardised.

Source: World Bank, *Worldwide Governance Indicators*, 2017 Update ([www.govindicators.org](http://www.govindicators.org))

#### 1.1.2 Business-government relations

Average answer to the question: In your country, how would you best characterize relations between business and government? [1 = highly confrontational; 7 = highly cooperative] | 2014

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2013–2014 (<http://reports.weforum.org>)

#### 1.1.3 Political stability

Political stability and absence of violence indicator | 2016

The political stability and absence of violence indicator measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. Scores are standardised.

Source: World Bank, *Worldwide Governance Indicators*, 2017 Update ([www.govindicators.org](http://www.govindicators.org))

#### 1.1.4 Regulatory quality

Regulatory quality indicator | 2016

The regulatory quality indicator captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Scores are standardised.

Source: World Bank, *Worldwide Governance Indicators*, 2017 Update ([www.govindicators.org](http://www.govindicators.org))

#### 1.1.5 Corruption

Corruption Perceptions Index | 2017

The Corruption Perceptions Index aggregates data from a number of different sources that provide perceptions of business people and country experts of the level of corruption in the public sector.

Source: Transparency International, *The Corruption Perceptions Index 2017* (<http://www.transparency.org/research/cpi>)

### 1.2 Market Landscape

#### 1.2.1 Competition intensity

Average answer to the question: In your country, how intense is competition in the local markets? [1 = not intense at all; 7 = extremely intense] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

#### 1.2.2 Ease of doing business

Ease of doing business index | 2017

The ease of doing business index aggregates a country's percentile rankings on 10 topics covered in the World Bank's *Doing Business* report series. The topics are: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency. A high ranking indicates that the regulatory environment is more conducive to setting up business.

Source: World Bank, *Doing Business 2018: Reforming to Create Jobs* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2018>)

### 1.2.3 Cluster development

Average answer to the question: In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)? [1 = nonexistent; 7 = widespread in many fields] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 1.2.4 R&D expenditure

Gross expenditure on R&D (%) | 2016

*R&D expenditure* refers to the total domestic intramural expenditure on research and development (R&D) during a given period as a percentage of GDP. Intramural R&D expenditure is all expenditure for R&D performed within a statistical unit or sector of the economy during a specific period, whatever the source of funds.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

### 1.2.5 ICT infrastructure

ICT access index | 2017

The ICT access index is a composite indicator that aggregates five ICT indicators (at 20% each): (1) Fixed-telephone subscriptions per 100 inhabitants; (2) Mobile-cellular telephone subscriptions per 100 inhabitants; (3) International internet bandwidth (bit/s) per internet user; (4) Percentage of households with a computer; and (5) Percentage of households with internet access. It is the first sub-index in ITU's ICT Development Index (IDI).

Source: International Telecommunication Union, *Measuring the Information Society Report 2017*, ICT Development Index 2017 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx>)

### 1.2.6 Technology utilisation

Average answer to the question: In your country, to what extent do businesses adopt the latest technologies? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 1.3 Business and Labour Landscape

### Labour Market

#### 1.3.1 Ease of hiring

Hiring indicators | 2018

*Doing Business* measures the regulation of employment as it relates to the hiring and redundancy of workers and the scheduling of working hours. The hiring indicators measure (1) whether fixed-term contracts are prohibited for permanent tasks; (2) the maximum cumulative duration of fixed-term contracts; and (3) the ratio of the minimum wage for a trainee or first-time employee to the average value added per worker. The score is calculated based on the proposed methodology from the Employing Workers annex in the World Bank's 2012 *Doing Business* report. The values are between 0 and 100, with higher values indicating more rigid regulation.

Source: World Bank, *Doing Business 2018: Reforming to Create Jobs* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2018>)

#### 1.3.2 Ease of redundancy

Redundancy indicators | 2018

*Doing Business* measures the regulation of employment as it relates to the hiring and redundancy of workers and the scheduling of working hours. The redundancy indicators measure: (1) whether redundancy is disallowed as a basis for terminating workers; (2) whether the employer needs to notify a third party (such as a government agency) to terminate one redundant worker; (3) whether the employer needs to notify a third party to terminate a group of nine redundant workers; (4) whether the employer needs approval from a third party to terminate one redundant worker; (5) whether the employer needs approval from a third party to terminate a group of nine redundant workers; (6) whether the law requires the employer to reassign or retrain a worker before making the worker redundant; (7) whether priority rules apply for redundancies; and (8) whether priority rules apply for reemployment. The score is calculated based on the proposed methodology from the Employing Workers annex in the World Bank's 2012 *Doing Business* report. The values are between 0 and 100, with higher values indicating more rigid regulation.

Source: World Bank, *Doing Business 2018: Reforming to Create Jobs* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2018>)

#### 1.3.3 Active labour market policies

Average answer to the question: In your country, to what extent do labour market policies help unemployed people to reskill and find new employment (including skills matching, retraining, etc.)? [1 = not at all; 7 = to a great extent] | 2017

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Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)



### 1.3.4 Labour-employer cooperation

Average answer to the question: In your country, how do you characterize labor-employer relations? [1 = generally confrontational; 7 = generally cooperative] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

#### Management Practice

### 1.3.5 Professional management

Average answer to the question: In your country, who holds senior management positions in companies? [1 = usually relatives or friends without regard to merit; 7 = mostly professional managers chosen for merit and qualifications] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 1.3.6 Relationship of pay to productivity

Average answer to the question: In your country, to what extent is pay related to employee productivity? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 2 ATTRACT

### 2.1 External Openness

#### Attract Business

#### 2.1.1 FDI and technology transfer

Average answer to the question: To what extent does foreign direct investment (FDI) bring new technology into your country? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

#### 2.1.2 Prevalence of foreign ownership

Average answer to the question: In your country, how prevalent is foreign ownership of companies? [1 = extremely rare; 7 = extremely prevalent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

#### Attract People

#### 2.1.3 Migrant stock

Adult migrant stock (%) | 2017

*Adult migrant stock* refers to the percentage of the migrant stock population above 25 years old in the total population of the same age group.

Source: United Nations Population Division, Trends in International Migrant Stock: Migrants by Age and Sex ([www.un.org/en/development/desa/population/migration/data/estimates2/estimates17.shtml](http://www.un.org/en/development/desa/population/migration/data/estimates2/estimates17.shtml))

#### 2.1.4 International students

Tertiary inbound mobility ratio (%) | 2017

*Tertiary inbound mobility ratio* refers to the number of students from abroad studying in a given country, as a percentage of the total tertiary enrolment in that country.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

### 2.1.5 Brain gain

Average answer to the question: To what extent does your country attract talented people from abroad? [1 = not at all; 7 = to a great extent—the country attracts the best and brightest from around the world] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 2.2 Internal Openness

### *Social Inclusion*

### 2.2.1 Tolerance of minorities

Discrimination and violence against minorities | 2017

This indicator is a component of the tolerance and inclusion variables used to measure the Opportunity dimension of the Social Progress Index. It takes into account six components—discrimination, powerlessness, ethnic violence, communal violence, sectarian violence, and religious violence—measured on a scale of 0 (low pressures) to 10 (very high pressures).

Source: Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>) based on the Fund for Peace Fragile States Index

### 2.2.2 Tolerance of immigrants

The percentage of respondents answering yes to the question: Is the city or area where you live a good place or not a good place to live for immigrants from other countries? | 2017

This indicator is used as a component of the tolerance and inclusion variables to measure the Opportunity dimension of the Social Progress Index.

Source: Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>) based on the Gallup World Poll

### 2.2.3 Social mobility

Average answer to the question: In your country, to what extent do individuals have the opportunity to improve their economic situation through their personal efforts regardless of the socio-economic status of their parents? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### *Gender Equality*

### 2.2.4 Female graduates

Female tertiary graduates (%) | 2017

*Female tertiary graduates* refers to the percentage of female graduates whose highest educational attainment is the tertiary level. The tertiary level is based on International Standard Classification of Education (ISCED) levels 5–8.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

### 2.2.5 Gender earnings gap

Estimated earned income ratio | 2017

The *estimated earned income ratio* refers to the estimated income earned by females over the corresponding value for males.

Source: World Economic Forum, *The Global Gender Gap Report 2017* (<http://reports.weforum.org/global-gender-gap-report-2017>)

### 2.2.6 Leadership opportunities for women

Average answer to the question: In your country, to what extent do companies provide women with the same opportunities as men to rise to positions of leadership? [1 = not at all; 7 = to a great extent] | 2017

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Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 3 GROW

### 3.1 Formal Education

#### *Enrolment*

#### 3.1.1 Vocational enrolment

Vocational enrolment (%) | 2017

*Vocational enrolment* refers to the total number of students enrolled in vocational programmes in secondary education, expressed as a percentage of the total number of students enrolled in all programmes (vocational and general) at that level. The secondary level is based on International Standard Classification of Education (ISCED) levels 2–4.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

#### 3.1.2 Tertiary enrolment

Tertiary enrolment (%) | 2017

*Tertiary enrolment* refers to the ratio of total tertiary enrolment, regardless of age, to the population of the age group that officially corresponds to the tertiary level of education. Tertiary education, whether or not to an advanced research qualification, normally requires as a minimum condition of admission the successful completion of education at the secondary level. The tertiary level is based on International Standard Classification of Education (ISCED) levels 5–8.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

#### *Quality*

#### 3.1.3 Tertiary education expenditure

Government expenditure on tertiary education (%) | 2017

Government expenditure on tertiary education as a percentage of GDP. Tertiary education is based on International Standard Classification of Education (ISCED) levels 5–8.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

#### 3.1.4 Reading, maths, and science

PISA average scores in reading, mathematics, and science | 2015

The OECD Programme for International Student Assessment (PISA) develops triennial surveys that examine 15-year-old students' performance in reading, mathematics, and science. The scores are calculated so that the mean is 500 and the standard deviation is 100. The scores for China come from Beijing-Shanghai-Jiangsu-Guangdong.

Source: OECD Programme for International Student Assessment (PISA) ([www.oecd.org/pisa](http://www.oecd.org/pisa))

### 3.1.5 University ranking

QS World University Ranking | 2019

The QS World University Ranking is based on six indicators (with their weights in parentheses): (1) Academic reputation from global survey (40%); (2) Employer reputation from global survey (10%); (3) Citations per faculty from Elsevier's *Scopus* database (20%); (4) Faculty-student ratio (20%); (5) Proportion of international students (5%); and (6) Proportion of international faculty (5%). The value is derived from the average score of the top three universities per country. If the country has fewer than three universities listed in the QS ranking, the sum of the scores of the listed universities is still divided by three, implying a score of 0 for non-listed universities.

Source: Quacquarelli Symonds Ltd (QS), QS World University Ranking 2019, Top Universities ([www.topuniversities.com/university-rankings/world-university-rankings](http://www.topuniversities.com/university-rankings/world-university-rankings))

## 3.2 Lifelong Learning

### 3.2.1 Quality of management schools

Average answer to the question: In your country, how do you assess the quality of business schools? [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2017

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Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 3.2.2 Prevalence of training in firms

Proportion of firms offering formal training (%) | 2017

The Enterprise Survey is a firm-level survey of a representative sample of an economy's private sector. The surveys cover a broad range of business environment topics including access to finance, corruption, infrastructure, crime, competition, and performance measures. Since 2005–06, under its developed Global Methodology, the World Bank's Enterprise Analysis Unit has collected these data based on over 135,000 interviews with top managers and business owners in 139 economies.

Source: World Bank, Enterprise Surveys ([www.enterprisesurveys.org](http://www.enterprisesurveys.org))

### 3.2.3 Employee development

Average answer to the question: In your country, to what extent do companies invest in training and employee development? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement the *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 3.3 Access to Growth Opportunities

### Empowerment

### 3.3.1 Delegation of authority

Average answer to the question: In your country, to what extent does senior management delegate authority to subordinates? [1 = not at all; 7 = to a great extent] | 2017

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Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 3.3.2 Personal rights

Personal rights indicator | 2017

Personal Rights are a component in the Opportunity Dimension of the Social Progress Index. This component is based on four variables: Political rights, Freedom of expression, Freedom of assembly, and Private property rights.

Source: Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>)

### Collaboration

### 3.3.3 Use of virtual social networks

Average answer to the question: In your country, how widely are virtual social networks used (e.g., Facebook, Twitter, LinkedIn)? [1 = not at all used; 7 = used extensively] | 2017

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Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 3.3.4 Use of virtual professional networks

LinkedIn users (per 1,000 labour force) | 2016

*LinkedIn users* refers to the number of registered LinkedIn accounts per 1,000 labour force (15–64 years old).

Source: LinkedIn, LinkedIn Campaign Manager and International Labour Organization, *Key Indicators of the Labour Market*, 8th edition (<http://key-indicators-of-the-labour-market-8th.software.informer.com/download>)

### 3.3.5 Collaboration within organisations

Average answer to the question: In your country, to what extent do people collaborate and share ideas within a company? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 3.3.6 Collaboration across organisations

Average answer to the question: In your country, to what extent do companies collaborate in sharing ideas and innovating? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 4 RETAIN

### 4.1 Sustainability

#### 4.1.1 Pension system

Workforce contributing to pension system (%) | 2012

Pension system coverage, in this context, includes only mandatory schemes because voluntary arrangements are not formally integrated into most mandatory social security systems. It is reported as the percentage of the active workforce contributing to the pension system.

Source: Pallares-Miralles, M., Romero, C., & Whitehouse, E. 2012. International patterns of pension provision II: A worldwide overview of facts and figures. Social protection and labor discussion paper no. SP 1211. Washington, DC: World Bank (<https://openknowledge.worldbank.org/handle/10986/13560>)

#### 4.1.2 Social protection

Average answer to the question: In your country, to what extent does a formal social safety net provide protection to the general population from economic insecurity in the event of job loss or disability? [1 = not at all; 7 = provides full protection] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

#### 4.1.3 Brain retention

Average answer to the question: To what extent does your country retain talented people? [1 = not at all—the best and brightest leave to pursue opportunities abroad; 7 = to a great extent—the best and brightest stay and pursue opportunities in the country] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 4.2 Lifestyle

#### 4.2.1 Environmental performance

Environmental Performance Index | 2018

The Environmental Performance Index (EPI) ranks how well countries perform in two fundamental dimensions of sustainable development: environmental health and ecosystem vitality. Indicators in the EPI measure how close countries are to meeting internationally established targets or, in the absence of agreed-upon targets, how they compare relative to the best-performing countries.

Source: The 2018 Environmental Performance Index, Yale Center for Environmental Law and Policy (<http://epi.yale.edu>)

#### 4.2.2 Personal safety

Personal safety indicator | 2017

Personal safety is a component in the Basic Human Needs Dimension of the Social Progress Index. This component is based on five variables: Homicide rate, Level of violent crime, Perceived criminality, Political terror, and Traffic deaths.

Source: Social Progress Imperative, The Social Progress Index 2017 (<http://www.socialprogressimperative.org/publication/2017-social-progress-index/>)

#### 4.2.3 Physician density

Physicians (per 1,000 people) | 2016

*Physician density* refers to the number of medical doctors (physicians), including generalist and specialist medical practitioners, per 1,000 people.

Source: World Bank, World Development Indicators based on World Health Organization, Global Atlas of the Health Workforce (<http://data.worldbank.org/data-catalog/world-development-indicators>)

#### 4.2.4 Sanitation

Population with access to improved sanitation facilities (%) | 2016

This indicator refers to the percentage of the population using at least basic sanitation services—that is, improved sanitation facilities that are not shared with other households. This indicator encompasses both people using basic sanitation services as well as those using safely managed sanitation services. Improved sanitation facilities include flush/pour-flush to piped sewer systems, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs.

Source: World Bank, World Development Indicators based on WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply, Sanitation and Hygiene (<http://data.worldbank.org/data-catalog/world-development-indicators>)

## 5 VOCATIONAL AND TECHNICAL SKILLS

### 5.1 Mid-Level Skills

#### 5.1.1 Workforce with secondary education

Labour force with secondary education (%) | 2017

*Workforce with secondary education* refers to the percentage of the labour force (above 15 years old) whose highest educational attainment is at the secondary level. Secondary level includes both upper secondary and post-secondary non-tertiary education based on International Standard Classification of Education (ISCED) levels 3–4.

Source: International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

#### 5.1.2 Population with secondary education

Population with secondary education (%) | 2016

*Population with secondary education* refers to the percentage of the population (above 25 years old) whose highest educational attainment is at the secondary level. This is based on International Standard Classification of Education (ISCED) levels 3–4.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

### 5.1.3 Technicians and associate professionals

Technicians and associate professionals (%) | 2017

*Technicians and associate professionals* refers to the percentage of technicians and associate professionals out of total employment. The employment by occupation is based on the International Standard Classification of Occupation (ISCO) Revision 2008. It includes physical and engineering science associate professionals, life science and health associate professionals, teaching associate professionals, and other associate professionals (finance and sales, social work, artistic, entertainment and sports, religious associate professionals, police inspectors and detectives, administrative, customs, and tax and related government associate professionals).

Source: International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

### 5.1.4 Labour productivity per employee

Labour productivity per person employed (2017 US\$) | 2018

Labour productivity estimates are obtained by dividing the total output (GDP) by the total labour input used (labour force) to produce that output. GDP has been converted to 2017 US\$ with updated 2011 purchasing power parities.

Source: The Conference Board, Total Economy Database™(Adjusted version) ([www.conference-board.org/data/economydatabase](http://www.conference-board.org/data/economydatabase))

## 5.2 Employability

### 5.2.1 Base of finding skilled employees

Average answer to the question: In your country, to what extent can companies find people with the skills required to fill their vacancies? [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 5.2.2 Relevance of education system to the economy

Average answer to the question: In your country, how well does the education system meet the needs of a competitive economy? [1 = not well at all; 7 = extremely well] | 2017

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Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 5.2.3 Skills matching with secondary education

Average answer to the question: In your country, to what extent do graduating students possess the skills needed by businesses at the following levels: a. Secondary education [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

### 5.2.4 Skills matching with tertiary education

Average answer to the question: In your country, to what extent do graduating students possess the skills needed by businesses at the following levels: b. University level [1 = not at all; 7 = to a great extent] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 6 GLOBAL KNOWLEDGE SKILLS

### 6.1 High-Level Skills

#### 6.1.1 Workforce with tertiary education

Labour force with tertiary education (%) | 2017

*Workforce with tertiary education* refers to the percentage of the labour force (above 15 years old) whose highest educational attainment is at the tertiary level. The tertiary level is based on International Standard Classification of Education (ISCED) levels 5–8.

Source: International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

#### 6.1.2 Population with tertiary education

Population with tertiary education (%) | 2016

*Population with tertiary education* refers to the percentage of the population (above 25 years old) whose highest educational attainment is at the tertiary level. The tertiary level is based on International Standard Classification of Education (ISCED) levels 5–8.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)



### 6.1.3 Professionals

Professionals (%) | 2017

*Professionals* refers to the percentage of professionals out of total employment. The employment by occupation is based on the International Standard Classification of Occupation (ISCO) Revision 2008. It includes physical, mathematical, and engineering science professionals; life science and health professionals; teaching professionals; and other professionals (business, legal, archivists, librarians, social science, religious professionals and writers and creative or performing artists).

Source: International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

### 6.1.4 Researchers

Full-time equivalent researchers (per million population) | 2016

Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods, or systems, as well as the management of these projects. Full-time equivalence (FTE) R&D data are a measure of the actual volume of human resources devoted to R&D, and are especially useful for international comparisons. One full-time equivalent may be thought of as one person-year. Thus, a person who normally spends 30% of time on R&D and the rest on other activities (such as teaching, university administration, and student counselling) should be considered as 0.3 FTE. Similarly, if a full-time R&D worker is employed at an R&D unit for only six months, this results in an FTE of 0.5. The data are reported per million population.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

### 6.1.5 Senior officials and managers

Legislators, senior officials, and managers (%) | 2017

This variable measures the percentage of legislators, senior officials, and managers within total employment. The employment by occupation is based on the International Standard Classification of Occupation (ISCO) Revision 2008.

Source: International Labour Organization, *ILOSTAT* (<http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>)

### 6.1.6 Availability of scientists and engineers

Average answer to the question: In your country, to what extent are scientists and engineers available? [1 = not at all; 7 = widely available] | 2017

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement *The Global Competitiveness Report* in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2016–2017 (<http://reports.weforum.org>)

## 6.2 Talent Impact

### 6.2.1 Innovation output

Innovation output sub-index | 2018

The Global Innovation Index (GII), developed jointly by INSEAD and the World Intellectual Property Organization, aims to capture the richness of innovation in society. Innovation output is one of the two sub-indices in the GI, which is derived by aggregating two output pillars: Knowledge and Technology Outputs and Creative Outputs. The first pillar covers elements of knowledge creation, impact, and diffusion, while the second pillar includes creative intangibles, creative goods and services, and online creativity.

Source: INSEAD, Cornell University, and World Intellectual Property Organization, *The Global Innovation Index 2018* (<https://www.globalinnovationindex.org>)

### 6.2.2 High-value exports

High technology manufactures (%) | 2016

*High-value exports* here refers to high technology manufactures (electronic and electrical and other), as calculated according to the Lall classification, over exports of all manufactured goods.

Source: World Bank, World Integrated Trade Solution (<http://wits.worldbank.org/>). The classification of exports is based on Lall, S. (2000), *The Technological Structure and Performance of Developing Country Manufactured Exports*, *Oxford Development Studies*, 28(3), 1985–1989

### 6.2.3 New product entrepreneurial activity

New product entrepreneurial activity (%) | 2017

*New product entrepreneurial activity* refers to the percentage of total early-stage entrepreneurs who indicate that their product or service is new to at least some customers AND that few/no other businesses offer the same product. The Global Entrepreneurship Monitor project is an annual assessment of the entrepreneurial activity, aspirations, and attitudes of individuals across a wide range of countries.

Source: Global Entrepreneurship Research Association, Global Entrepreneurship Monitor database ([www.gemconsortium.org/data](http://www.gemconsortium.org/data))

### 6.2.4 New business density

New corporate registrations (per 1,000 working-age population) | 2016

*New business density* is defined as the number of newly registered firms with limited liability per 1,000 working-age people (between 15 and 64 years old) per calendar year.

Source: World Bank, Doing Business, Entrepreneurship Project (<http://www.doingbusiness.org/en/data/exploretopics/entrepreneurship>)

### 6.2.5 Scientific journal articles

Number of scientific and technical journal articles (per 10,000 inhabitants) | 2016

*Scientific and technical journal articles* refers to the number of scientific and engineering articles published in the following fields: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences. The data are reported per 10,000 inhabitants.

Source: World Bank, World Development Indicators based on National Science Foundation, Science and Engineering Indicators; population data come from World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)



# Appendix III

About the Contributors  
and Partners



# About the Contributors



## Marcos Álvarez-Díaz

Marcos Álvarez-Díaz is a Researcher at the European Commission's Competence Centre on Composite Indicators and Scoreboards, and Associate Professor of Economics at the University of Vigo, Spain. He holds a PhD, an MPhil, and an MA in Economics from Columbia University, New York, USA. He then worked as

Researcher at the Economic Research Center of the saving bank Caixa de Balears, and served as Assistant Professor at the University of the Balearic Islands. He is the recipient of awards and honours such as the William Vickrey prize (Columbia University) and the Alexandre Pedrós award (Review of Public Economics). He has co-authored and authored scientific articles dealing with the modelling and forecasting of economic and financial time series.



## Michael Bratt

Michael Bratt is a Consultant for INSEAD, leading the analytical work of the Global Talent Competitiveness Index by being responsible for the calculation and analysis of the country and city rankings. Prior to his current role he was Consultant and Associate Economic Affairs Officer at United Nations Conference on Trade and Development (UNCTAD), working primarily on issues on trade and development related to least-developed countries and landlocked developing countries. Other past work experience includes consulting for the World Trade Organization and working as an analyst at the Swedish National Board of Trade, CUTS International, and Mintel International. He holds a PhD in Economics from the University of Geneva and a Master of International Law and Economics from the World Trade Institute (University of Bern).

development (UNCTAD), working primarily on issues on trade and development related to least-developed countries and landlocked developing countries. Other past work experience includes consulting for the World Trade Organization and working as an analyst at the Swedish National Board of Trade, CUTS International, and Mintel International. He holds a PhD in Economics from the University of Geneva and a Master of International Law and Economics from the World Trade Institute (University of Bern).



## William Becker

William Becker is a Researcher at the European Commission's Competence Centre on Composite Indicators and Scoreboards. His work involves providing statistical and analytical support to policymaking in the European Commission, as well as performing theoretical research on composite indicators, particularly in the areas of uncertainty and sensitivity analysis. He has authored several book chapters and a number of journal articles, and lectures at international training courses in composite indicators and sensitivity analysis. Dr Becker holds a PhD and an MEng in Mechanical Engineering from the University of Sheffield, UK.

uncertainty and sensitivity analysis. He has authored several book chapters and a number of journal articles, and lectures at international training courses in composite indicators and sensitivity analysis. Dr Becker holds a PhD and an MEng in Mechanical Engineering from the University of Sheffield, UK.



### Alain Dehaze

Alain Dehaze is CEO of the Adecco Group, the world's leading workforce solutions partner. Through its international brands Adecco, Adia, Modis, Badenoch & Clark, General Assembly, Lee Hecht Harrison, Pontoon, Spring Professional, and YOSS, the Adecco Group is making the future work for everyone.

As a Fortune Global 500 Company, the Adecco Group provides more than 700,000 people with permanent and flexible employment every day, serving more than 100,000 organisations with the talent, HR services, and cutting-edge technology they need to succeed in an ever-changing global economy. With 34,000 full-time team members in 60 countries, the Adecco Group ranked 5th on the 2018 World's Best Workplaces list, the only workforce solutions company in the top 25.

The 55-year-old Belgian national graduated as a Commercial Engineer from the ICHEC Brussels Management School before rising through the ranks at Henkel and ISS. He joined the workforce solutions sector in 2000, when he was appointed Managing Director of Creyf's Interim in Belgium. His path took him to the CEO position at Solvus, COO of USG People—when the latter took over Solvus—and CEO of the Dutch staffing services company Humares between 2007 and 2009.

Mr Dehaze joined the Adecco Group in 2009 as a member of the Executive Committee, responsible first for Northern Europe, then for the Group's largest market, France, before taking on the CEO position in September 2015. Mr Dehaze plays an active role in shaping the labour markets of tomorrow as Chair of the Global Apprenticeship Network (GAN), as a member of the ILO Global Commission on the Future of Work, and as Steward of the World Economic Forum's System Initiative 'Shaping the Future of Education, Work and Gender'.

Before leading the Adecco Group, he held board positions at the sector level with the World Employment Confederation, including the Vice-Presidency of the World Employment Confederation Europe (formerly EUROCIETT).



### Marcos Domínguez-Torreiro

Marcos Domínguez-Torreiro is a Research Fellow at the Competence Centre on Composite Indicators and Scoreboards (COIN) of the Joint Research Centre of the European Commission (Italy), where he conducts research and policy support tasks in the field of econometrics and applied statistics. After his undergraduate

studies in Economics and Business Administration, he completed his doctoral thesis in Applied Economics at the University of Vigo, Spain. His past work experience includes the private sector, universities, and public administration. He has co-authored books and research articles dealing with finance, consumer behaviour, environmental and natural resource economics, rural development, and institutional economics.



### Vinod Kumar

Vinod Kumar is the Managing Director and Group CEO of Tata Communications. Mr Kumar joined Tata Communications in April 2004, just as the company was embarking on its journey of international growth. He has been at the forefront of Tata Communications' transformation from a traditional connectivity services

provider, largely based in India, to a leading global digital infrastructure provider, offering a portfolio of integrated, globally managed network, cloud, mobility, internet of things (IoT), collaboration, and security services.

With 25 years of experience in the global telecom industry, Mr Kumar has an impressive track record in developing business strategies and creating fast-growth organisations across the globe. Prior to joining Tata Communications, he was a Senior Vice President with Asia Netcom from 2002 to 2004, where he was responsible for strategy formulation, product marketing, and sales. From 1999 to 2002, he worked with WorldCom Japan as its Chief Executive Officer. Prior to this, he held various senior positions with Global One and Sprint International in the United States and Asia.

Mr Kumar has served as a Director of the Human Capital Leadership Institute Pte Ltd, York Transport Equipment (Asia) Pte Ltd, Qubit Investments Pte Ltd, and Strategy Advisor & Consultant of UST Global (Singapore) Pte Ltd, among several others. He is also a member of the Business Sector Advisory Council for UN Women.



### Bruno Lanvin

Bruno Lanvin is the Executive Director of INSEAD's Global Indices (the Networked Readiness Index of the Global Information Technology Report, the Global Innovation Index, and the Global Talent Competitiveness Index). Before joining INSEAD, he worked for the World Bank, where he was

inter alia Senior Advisor for E-strategies, Regional Coordinator (Europe and Central Asia) for ICT and e-government issues, and Chairman of the Bank's e-Thematic Group.

Since 2002 he has been co-authoring the *Global Information Technology Report* (INSEAD-World Economic Forum); he is currently (and has been since 2007) the co-editor of the *Global Innovation Index Report* (INSEAD-WIPO-Cornell University).

From June 2001 to December 2003, he was the Manager of the Information for Development Program (infoDev) at the World Bank. In 2000, Dr Lanvin was appointed Executive Secretary of the G8-DOT Force. Until then, he occupied several high-level positions at the United Nations in Geneva and New York, including that of Chief of Cabinet of the Director General.

Dr Lanvin holds a BA in Mathematics and Physics from the University of Valenciennes (France), an MBA from Ecole des Hautes Etudes Commerciales (HEC) in Paris, and a PhD in Economics from the University of Paris I (La Sorbonne) in France. He is also an INSEAD alumnus (IDP-C). A frequent speaker at high-level meetings, he advises a number of global companies and governments and has been a member of numerous boards, including those of IDA Infocomm (Singapore), ICANN, GovTech (Singapore), the Mohammed Bin Rashid Center for Government Innovation (United Arab Emirates), IPWatch, and the Association for Accountability and Internet Democracy (AAID).



### Felipe Monteiro

Felipe Monteiro is the Academic Director of the GTCI, an Affiliate Professor of Strategy at INSEAD, France, and a Senior Fellow of the Wharton School Mack Institute for Innovation Management. Before joining INSEAD, he was a standing faculty member at the Wharton School. He has

also worked as a Senior Researcher at the Harvard Business School's Latin American Research Center in Brazil and taught at the London School of Economics (LSE).

His research explaining the patterns of inter- and intra-firm knowledge-sourcing processes in multinational organisations has been published in top academic journals such as the *Strategic Management Journal*, *Organization Science*, *Research Policy*, and the *Journal of International Business Studies*, among others. His research has also received prestigious awards from the Strategic Management Society, the Academy of Management, and the Academy of International Business. He has received multiple teaching awards and published several case studies at Harvard Business School, London Business School, and INSEAD.

Professor Monteiro obtained his PhD in Strategic and International Management at the London Business School. He also has an LLB (JD equivalent) degree, cum laude, from the Federal University of Rio de Janeiro, an MSc in Business Administration from COPPEAD/UFRJ, Brazil, and an MRes in Business Studies from London Business School.



### Frédéric Mazzella

Frédéric Mazzella is the Founder and President of BlaBlaCar and WonderLeon. BlaBlaCar is the leading European carpooling community of 65 million people globally that connects drivers with empty seats and people traveling the same way, so they can share their costs; WonderLeon is the European recruiting program that at-

tracts, recruits, and supports international talent in the digital sector. Mr Mazzella holds an MBA from INSEAD, a Master of Science in Computer Science from Stanford, and a Master of Physics from École normale supérieure (ENS). Prior to founding BlaBlaCar, he worked for three years as a Scientific Researcher at NASA (USA) and NTT (Japan). He is a regular speaker in international conferences and media events on the themes of sustainable development, entrepreneurship, global marketplaces, and building trust in online communities. He is also an accomplished classical pianist and tweets @mazaic.



### Michaela Saisana

Michaela Saisana leads the European Commission's Competence Centre on Composite Indicators and Scoreboards (COIN) at the Joint Research Centre in Italy. She conducts and coordinates research on the monitoring of multidimensional phenomena that feed into EU policy formulation and legislation. She collaborates, by

auditing performance indices, with over 100 international organisations and world-class universities, including the United Nations, UNICEF, Transparency International, the World Economic Forum, INSEAD, the World Intellectual Property Organization, Yale University, Columbia University, and Harvard University. Her publications deal with composite indicators, multi-criteria analysis, multi-objective optimisation, data envelopment analysis, and sensitivity analysis (20 peer-reviewed articles, 2 books, and 60 working papers). She provides regular trainings/seminars on composite indicators (over 30 trainings and 60 invited lectures). In 2004 she was awarded the European Commission's JRC Young Scientist Prize in Statistics and Econometrics in recognition of her research on composite indicators. She has a PhD and an MSc in Chemical Engineering.



# About the Partners



## About INSEAD, The Business School for the World ([www.insead.edu](http://www.insead.edu))

As one of the world's leading and largest graduate business schools, INSEAD brings together people, cultures and ideas to develop responsible leaders who transform business and society. A global perspective and cultural diversity are reflected in all aspects of its research and teaching.

With campuses in Europe (France), Asia (Singapore) and the Middle East (Abu Dhabi), INSEAD's business education and research spans three continents. The school's 154 renowned Faculty members from 40 countries inspire more than 1,400 degree participants annually in its MBA, Executive MBA, Executive Master in Finance, Executive Master in Change and PhD programmes. In addition, more than 11,000 executives participate in INSEAD's executive education programmes each year.

In addition to INSEAD's programmes on its three campuses, INSEAD participates in academic partnerships with the Wharton School of the University of Pennsylvania (Philadelphia & San Francisco); the Kellogg School of Management at Northwestern University near Chicago; the Johns Hopkins University/SAIS in Washington DC and the Teachers College at Columbia University in New York; and MIT Sloan School of Management in Cambridge, Massachusetts. In Asia, INSEAD partners with School of Economics and Management at Tsinghua University in Beijing, and China Europe International Business School (CEIBS) in Shanghai. INSEAD is a founding member in the multidisciplinary Sorbonne University created in 2012, and also partners with Fundação Dom Cabral in Brazil.

INSEAD became a pioneer of international business education with the graduation of the first MBA class on the Fontainebleau campus in Europe in 1960. In 2000, INSEAD opened its Asia campus in Singapore. In 2007, the school inaugurated a Centre for Research and Executive Education in the United Arab Emirates and officially opened the Middle East Campus in Abu Dhabi in 2010.

Around the world and over the decades, INSEAD continues to conduct cutting edge research and to innovate across all its programmes to provide business leaders with the knowledge and sensitivity to operate anywhere. These core values have enabled INSEAD to become truly "The Business School for the World".



**THE ADECCO GROUP**

## The Adecco Group ([www.adeccogroup.com](http://www.adeccogroup.com))

The Adecco Group is the world's leading HR solutions partner. We provide more than 700,000 people with permanent and flexible employment every day. With more than 34,000 employees in 60 countries, we transform the world of work one job at a time. Our colleagues serve more than 100,000 organisations with the talent, HR services and cutting-edge technology they need to succeed in an ever-changing global economy. As a Fortune Global 500 company, we lead by example, creating shared value that meets social needs while driving business innovation. Our culture of inclusivity, fairness and teamwork empowers individuals and organisations, fuels economies, and builds better societies. These values resonate with our employees, who voted us number 5 on the Great Place to Work®—World's Best Workplaces 2018 list. We make the future work for everyone.

The Adecco Group is based in Zurich, Switzerland. Adecco Group AG is registered in Switzerland (ISIN: CH0012138605) and listed on the SIX Swiss Exchange (ADEN). The group is powered by nine global brands: Adecco, Adia, Modis, Badenoch & Clark, General Assembly, Lee Hecht Harrison, Pontoon, Spring Professional and YOSS.

**Tata Communications ([www.tatacommunications.com](http://www.tatacommunications.com))**

Tata Communications is a leading global digital infrastructure provider that underpins today's fast-growing digital economy.

The company's customers represent 300 of the Fortune 500 whose digital transformation journeys are enabled through its portfolio of integrated, globally managed network, cloud, mobility, Internet of Things (IoT), collaboration and security services. Today, it connects businesses to 60% of the world's cloud giants, 4 out of 5 mobile subscribers worldwide and carries nearly 30% of the world's internet routes.

This is underpinned by the world's largest wholly owned and most advanced subsea fibre network and a Tier-1 IP network with connectivity to more than 240 countries and territories across 400 PoPs.

Tata Communications Limited is listed on the Bombay Stock Exchange and the National Stock Exchange of India and is present in over 200 countries and territories around the world.