INSEAD The Business School for the World®

THE ADECCO GROUP

TATA COMMUNICATIONS

The Global Talent Competitiveness Index 2019

Entrepreneurial Talent and Global Competitiveness

Bruno Lanvin and **Felipe Monteiro,** Editors

INSEAD The Business School for the World®

THE ADECCO GROUP

TATA COMMUNICATIONS

The Global Talent Competitiveness Index 2019

Entrepreneurial Talent and Global Competitiveness

Bruno Lanvin
Felipe Monteiro
Editors

INSEAD (2019): *The Global Talent Competitiveness Index 2019,* Fontainebleau, France.

Disclaimer: No representation or warranty, either express or implied, is provided in relation to the information contained herein and with regard to its fitness, sufficiency, or applicability for any particular purpose. The information contained in this report is provided for personal non-commercial use and information purposes only and may be reviewed and revised based on new information and data. INSEAD, the Adecco Group, and Tata Communications disclaim all liability relating to the content and use of the report and the information contained therein, and the report should not be used as a basis for any decision that may affect the business and financial interests of the reader or any other party. The index's methodology and the rankings do not necessarily present the views of INSEAD, Adecco, and Tata Communications. The same applies to the substantive chapters in this report, which are the responsibility of the authors.

First edition, printed December 2018.

© 2019 by INSEAD, the Adecco Group, and Tata Communications.

The information contained herein is proprietary in nature and no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of INSEAD, the Adecco Group, and Tata Communications.

ISBN: 979-10-95870-18-0

Designed by Neil Weinberg, edited by Hope Steele, and printed by INSEAD, Fontainebleau, France.

Contents

Preface v
Bruno Lanvin, Executive Director for Global Indices, INSEAD and Felipe Monteiro, Academic Director of the Global Talent Competitiveness Index and Affiliate Professor of Strategy, INSEAD

Foreword vii
Alain Dehaze, Chief Executive Officer, the Adecco Group

Foreword ix
Vinod Kumar, Chief Executive Officer and Managing Director, Tata Communications

Advisory Board, INSEAD GTCI Team and Editing Team xi

CHAPTERS

Chapter 1: Entrepreneurial Talent for Competitiveness 3
Bruno Lanvin, Felipe Monteiro, and Michael Bratt, INSEAD

Chapter 2: Education 2.0: Getting Ready for the Future of Work 37
Alain Dehaze, the Adecco Group

Chapter 3: Leading through Change 41
Vinod Kumar, Tata Communications

Chapter 4: Gaining Global Competitiveness through Rendanheyi: Case Studies from the Haier Group 45
Haier Model Research Institute

Chapter 5: Entrepreneurial Talent and Global Competition: A Unicorn's View 51
An interview with Frédéric Mazzella, Co-Founder and Chairman of BlaBlaCar

Chapter 6: JRC Statistical Audit of the Global Talent Competitiveness Index 2019 55
Michaela Saisana, Marcos Álvarez-Díaz, Marcos Domínguez-Torreiro, and William Becker, European Commission Joint Research Centre

SPECIAL SECTION: CITIES AND REGIONS

Growing, Attracting, and Retaining Talents at City Level: Exploring the Local Dynamics around Entrepreneurial Talent 71
Bruno Lanvin and Michael Bratt, INSEAD

COUNTRY PROFILES

How to Read the Country Profiles 87

Index of Country Profiles 89

Country Profiles 91

DATA TABLES

How to Read the Data Tables 219

Index of Data Tables 221

Data Tables 223

APPENDICES

Appendix I: Technical Notes 301

Appendix II: Sources and Definitions 307

Appendix III: About the Contributors and Partners 319

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 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 revaluate 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

Advisory Board and INSEAD GTCI Team

Advisory Board

Talal Abu-Ghazaleh
Founder and Chairman,
Talal Abu-Ghazaleh Organization

Thierry Breton
Chairman and CEO, Atos; former Minister of the Economy, Finance and Industry for France

Peter Cappelli
George W. Taylor Professor of Management and Director, Center for Human Resources at The Wharton School, University of Pennsylvania

Yoko Ishikura
Professor Emeritus, Hitotsubashi University; former Senior Manager at McKinsey & Company, Inc., Tokyo

Mats Karlsson
Director, The Swedish Institute of International Affairs; former Vice-President of the World Bank

Arnoud De Meyer
President, Singapore Management University

Vineet Nayar
Founder, Sampark Foundation; former CEO of HCL Technologies

INSEAD GTCI Team

Bruno Lanvin (Executive Director)
Executive Director for Global Indices

Felipe Monteiro (Academic Director)
Academic Director of the Global Talent Competitiveness Index; Affiliate Professor of Strategy

Michael Bratt (Lead Researcher)

Anna Henry (Project Manager)

Virginie Bongeot Minet (Coordinator)

Editing Team

Hope Steele
Editor, Steele Editorial Services

Neil Weinberg
Principal, Neil Weinberg Design Group

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.[1] 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),[2] 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.[3] 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).[4]

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.[5] 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.[6]

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.[7] 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,[8] political science,[9] and even zoology.[10]

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'*.[11] 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.[12]

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,[13] 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: Entrepreunerial 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-returned, 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.[14]

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).[15] 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-perfoming 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 innnovation). 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. Currenty, 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.[16] 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.[17] 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.[18] 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.[19]

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
AE	United Arab Emirates
AL	Albania
AM	Armenia
AR	Argentina
AT	Austria
AU	Australia
AZ	Azerbaijan
BA	Bosnia and Herzegovina
BD	Bangladesh
BE	Belgium
BG	Bulgaria
BH	Bahrain
BI	Burundi
BN	Brunei Darussalam
BR	Brazil
BT	Bhutan
BW	Botswana
CA	Canada
CD	Congo, Dem. Rep.
CH	Switzerland
CL	Chile
CM	Cameroon
CN	China
CO	Colombia
CR	Costa Rica

CODE	COUNTRY
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
DO	Dominican Republic
DZ	Algeria
EC	Ecuador
EE	Estonia
EG	Egypt
ES	Spain
ET	Ethiopia
FI	Finland
FR	France
GB	United Kingdom
GE	Georgia
GH	Ghana
GM	Gambia
GR	Greece
GT	Guatemala
HN	Honduras
HR	Croatia
HU	Hungary
ID	Indonesia
IE	Ireland
IL	Israel

CODE	COUNTRY
IN	India
IR	Iran, Islamic Rep.
IS	Iceland
IT	Italy
JO	Jordan
JP	Japan
KE	Kenya
KG	Kyrgyzstan
KH	Cambodia
KR	Korea, Rep.
KW	Kuwait
KZ	Kazakhstan
LA	Lao PDR
LB	Lebanon
LK	Sri Lanka
LR	Liberia
LS	Lesotho
LT	Lithuania
LU	Luxembourg
LV	Latvia
MA	Morocco
MD	Moldova, Rep.
ME	Montenegro
MG	Madagascar
ML	Mali

CODE	COUNTRY
MN	Mongolia
MT	Malta
MU	Mauritius
MW	Malawi
MX	Mexico
MY	Malaysia
MZ	Mozambique
NA	Namibia
NG	Nigeria
NI	Nicaragua
NL	Netherlands
NO	Norway
NP	Nepal
NZ	New Zealand
OM	Oman
PA	Panama
PE	Peru
PH	Philippines
PK	Pakistan
PL	Poland
PT	Portugal
PY	Paraguay
QA	Qatar
RO	Romania
RS	Serbia

CODE	COUNTRY
RU	Russian Federation
RW	Rwanda
SA	Saudi Arabia
SE	Sweden
SG	Singapore
SI	Slovenia
SK	Slovakia
SN	Senegal
SV	El Salvador
TH	Thailand
TJ	Tajikistan
TN	Tunisia
TR	Turkey
TT	Trinidad and Tobago
TZ	Tanzania, United Rep.
UA	Ukraine
UG	Uganda
US	United States of America
UY	Uruguay
VE	Venezuela, Bolivarian Rep.
VN	Viet Nam
YE	Yemen
ZA	South Africa
ZM	Zambia
ZW	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.[20] 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,[21] 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.[22]

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.

REFERENCES AND FURTHER READINGS

Ahn, T. (2010). Attitudes toward risk and self-employment of young workers. *Labour Economics,* 17(2), 434–42.

Almlund, M., Duckworth, A.L., Heckman, J.J., & Kautz, T.D. (2011). Personality psychology and economics. In Hanushek, E.A., Machin, S.J., & Woessmann, L. (eds.). *Handbook of the economics in education, Volume 4.* Amsterdam: North Holland, 1–181.

Ardagna, S. & Lusardi, A. (2010). Explaining international differences in entrepreneurship: The role of individual characteristics and regulatory constraints. In Lerner, J. & Schoar, A. (eds.). *International differences in entrepreneurship.* Chicago: University of Chicago Press, 17–62.

Audretsch, D. & M.P. Feldman. (2003). Knowledge spillovers and the geography of innovation. In J.V. Henderson & J. Thisse (eds.). *Handbook of urban and regional economics: Cities and geography, Volume 4.* Amsterdam: North Holland, 2713–2739.

Baumol, W. (1996). Entrepreneurship: Productive, unproductive, and destructive. *Journal of Business Venturing,*11(1), 3–22.

Berger, G. (1950). Traité pratique d'analyse du caractère, Presses Universitaires de France (new edition in 1979).

Blanchflower, D.G. & A.J. Oswald. (1998). What makes an entrepreneur? *Journal of Labor Economics,* 16, 26–60.

Bosma, N., Wennekers, S., & Amorós, J.E. (2012). *Global entrepreneurship monitor 2011 extended report: Entrepreneurs and entrepreneurial employees across the globe,* available at https://www.gemconsortium.org/report/48326

Brandstätter, H. (2010). Personality aspects of entrepreneurship: A look at five meta-analyses. *Personality and Individual Differences,* 51(3), 222–230.

Caggese, A. (2012). Entrepreneurial risk, investment, and innovation. *Journal of Financial Economics,* 106(2), 287–307.

Cappelli, P. & Keller, J. R. (2014). Talent management: Conceptual approaches and practical challenges. *Annual Review of Organisational Psychology and Organisational Behaviour,* 1, 305–331.

Cowling, M. (2000). Are entrepreneurs different across countries? *Applied Economics Letters,* 7(12), 785–789.

Decker, R., Haltiwanger, J., Jarmin, R., & Miranda, J. (2014). The role of entrepreneurship in US job creation and economic dynamism. *Journal of Economic Perspectives,* 28, 3–24.

Falck, O., Fritsch, M., & Heblich, S. (2011). The phantom of the opera: Cultural amenities, human capital, and regional economic growth. *Labour Economics,* 18(6), 755–766.

Fallick, B., Fleischman, C., & Rebitzer, J. (2006). Job-hopping in Silicon Valley: Some evidence concerning the microfoundations of a high-technology cluster. *Review of Economics and Statistics,* 88(3), 472–481.

Florida, R. (2004). *The rise of the creative class.* New York: HarperCollins.

Freeman, H.D. & Gosling, S.D. (2010). Personality in nonhuman primates: A review and evaluation of past research. *American Journal of Primatology,* 72(8), 653–671.

Frese, M. (2009). Towards a psychology of entrepreneurship: An action theory perspective. *Foundations and Trends in Entrepreneurship,* 5, 437–496.

Galton, F. (1883). *Inquiries into human faculty and its development.* Originally published in 1883 by Macmillan; Second edition published 1892 by Macmillan; Reissued in 1907 by JM Dent & Co. (Everyman).

Gartner, W.B. (1988). Who is an entrepreneur? Is the wrong question. *American Journal of Small Business,* 12(4), 11–32.

GEM (Global Entrepreneurship Monitor). (2018). *GEM global report 2017/18.* Global Entrepreneurship Research Association (GERA), available at https://www.gemconsortium.org/report/50012

Gerber, A.S., Huber, G.A., Doherty, D., Dowling, C.M., & Ha S.E. (2010). Personality and political attitudes: Relationships across issue domains and political contexts. *Am. Polit. Sci. Rev.,* 104, 111–133.

Greene, F.J. & Saridakis, G. (2007). Understanding the factors influencing graduate entrepreneurship. *National Council for Graduate Entrepreneurship Research Report,* 1, 2007.

Hsu, D.H., Roberts, E.B., & Eesley, C.E. (2007). Entrepreneurs from technology-based universities: Evidence from MIT. *Research Policy,* 36(5), 768–788.

Hunt, J. (2011). Which immigrants are most innovative and entrepreneurial? Distinctions by entry visa. *Journal of Labor Economics,* 29(3), 417–457.

John, O.P., Naumann, L.P. , & Soto, C.J. (2008). Paradigm shift to the integrative big five trait taxonomy: History, measurement, and conceptual issues. In John, O.P., Robins, R.W., & Pervin, L.A. (eds.). *Handbook of personality: Theory and research.* New York: Guilford Press, 114–158.

Kelley, D.J., Singer, S., & Herrington, M. (2012). *The global entrepreneurship monitor 2011 global report,* available at http://www.babson.edu/Academics/centers/blank-center/global-research/gem/Documents/GEM%20Global%202011%20Report.pdf

Kerr, S.A., Kerr, W.A., & Xu, T. (2018). Personality Traits of Entrepreneurs: A Review of Recent Literature. *Foundations and Trends® in Entrepreneurship*,14(3), 279–356, available at http://dx.doi.org/10.1561/0300000080

Kilby, P. (1971). Hunting the heffalump. *Entrepreneurship and Economic Development,* 1–40.

Knight, F. (1921). *Risk, uncertainty, and profit.* Boston: Houghton Mifflin Co.

Lanvin, B. & Evans, P. (eds.) (2013). *The global talent competitiveness index 2013.* Singapore: INSEAD and HCL.

———. (2014). *The global talent competitiveness index 2014.* Singapore: INSEAD and HCL.

———. (2015). *The global talent competitiveness index 2015–16.* Fontainebleau, France: INSEAD, Adecco, and HCLI.

———. (2016). *The global talent competitiveness index 2017.* Fontainebleau, France: INSEAD, Adecco, and HCLI.

———. (2017). *The global talent competitiveness index 2018.* Fontainbleau, France: INSEAD, the Adecco Group, and Tata Communications.

Lazear, E.P. (2005). Entrepreneurship. *Journal of Labor Economics,* 23(4), 649–680.

Lee, J., Shim, K., & Lee, H. (2016). Entrepreneurial characteristics: A systematic literature review, *PACIS 2016 Proceedings,* 81.

Lerner, M., Brush, C., & Hisrich, R. (1997). Israeli women entrepreneurs: An examination of factors affecting performance. *Journal of Business Venturing,* 12, 315–339.

Liang, J., Wang, H., & Lazear, E.P. (2014). *Demographics and entrepreneurship.* NBER Working Paper 20506.

Mayer-Haug, K., Read, S., Brinckmann, J., Dew, N., & Grichnik, D. (2013). Entrepreneurial talent and venture performance: A meta-analytic investigation of SMEs. *Research Policy,* 42 (2013), 1251–1273.

Mueller, S.L. & Thomas, A.S. (2001). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing,* 16(1), 51–75.

Murphy, K., Shleifer, A., & Vishny R. (1991). The allocation of talent: Implications for growth. *Quarterly Journal of Economics,* 106, 503–530.

Parker, S.C. (2009). *The economics of entrepreneurship.* Cambridge, UK: Cambridge University Press.

Quesnay, F. (1758). *Maximes générales de gouvernement economique d'un royaume agricole, later issued as part of 'Physiocratie'* by Pierre Samuel Dupont de Nemours (1768).

Stahl, G. K., Björkman, I., Farndale, E., Morris, S.S., Paauwe, J., Stiles, P., & Wright, P. (2012). Six principles of effective global talent management. *MIT Sloan Management Review,* 53, 25–32.

Thomas, A.S. & Mueller, S.L. (2000). A case for comparative entrepreneurship: Assessing the relevance of culture. *Journal of International Business Studies,* 287–301.

Unger, J.M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing,* 26(3), 341–358.

Venkataraman, S. (2004). Regional transformation through technological entrepreneurship. *Journal of Business Venturing,* 19, 153–167.

World Bank. (2018). Small and medium enterprises (SMEs) finance, available at https://www.worldbank.org/en/topic/smefinance

Zhang, W., Cooper, W.W., Deng, H., Parker B.R., & Ruefli, T.W. (2010). Entrepreneurial talent and economic development in China. *Socio-Economic Planning Sciences,* 44 (2010), 178–92.

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).[1]

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.[2]

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

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 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).

Table A1

Countries with highest GTCI scores by pillar

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

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 cooperation 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
By region	
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
By income group	
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.[3]

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
Central and Southern Asia (10 countries)						
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)
Eastern, Southeastern Asia and Oceania (15 countries)						
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)
Europe (37 countries)						
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
Latin America and the Caribbean (18 countries)						
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)
Northern Africa and Western Asia (19 countries)						
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)
Northern America (2 countries)						
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)
Sub-Saharan Africa (24 countries)						
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.[1] 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.

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

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 retrains 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,[2] 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.

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

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

The Adecco Group & The Boston Consulting Group. (2018). *Future-proofing the workforce: Accelerating skills acquisition to match the pace of change,* available at https://future-skilling.adeccogroup.com/

European Commission. (2016). A new skills agenda for Europe: Working together to strengthen human capital, employability and competitiveness. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016DC0381

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.[1]

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

> 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.

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*.[3] 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.[4]

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).

REFERENCES

Tata Communications. (2018a). *Cognitive diversity: AI & the future of work,* available at https://www.tatacommunications.com/digital-futures/ai-future-of-work/

———. (2018b). New study: Culture determines digital transformation success, Press Release, 20 November 2018, available at https://www.tatacommunications.com/press-release/new-study-culture-determines-digital-transformation-success/

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.[1] 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'*[2]—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'*.[3] 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

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'*.[4] 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.[5] 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 1984–1991	**Divisional enterprise 1991–2005**	**Networked enterprise 2005–2012**	**Platform-based enterprise 2012–2019**
Background and context	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
Technology support	Simple mechanical technologies	Complex mechanical technologies	The internet technology	The technology of the internet of things
Strategy	Brand strategy	Diversification and internationalisation strategies	Globalisation strategy	Network strategy
Organisational form	Triangle	Expanded triangle	Inverted triangle, community of interest	Microenterprise
Organisational logic	Heter-organisation (centralisation of authority)	Heter-organisation (decentralisation of authority)	Self-organisation (delegation of authority)	Self-organisation (no hierarchy)
Resource allocation	Vertical integration (integrated management)	Longitudinal integration (M&A)	Horizontal integration (outsourcing)	Platform integration (sharing)
Model case	Zhang Ruimin smashed defective refrigerators; comprehensive quality management	'Stunned fish'* factory construction and M&A in domestic and overseas markets	*Rendanheyi* model; independent operation unit	Development of microenterprises (e.g., Thunderobot's growth and development)†

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.[6] 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 microenterprise 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 Leija 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,[7] 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.[8] It breaks the bureaucratic system and it has more abundant theoretical connotation and practical significance in the history of human organisation evolution.[9]

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).

REFERENCES

GEDI (Global Entrepreneurship and Development Institute). (2017). *The Global Entrepreneurship Index 2018.* Washington, DC: GEDI.

Gerstner, L. (2003). *Who says elephants can't dance?* New York: Harper Business.

Hu, G.-D. (2018a). Haierism (2): History of organizational evolution and the coordinates in the history of Chinese enterprises. *Tsinghua Business Review,* 7, 50–58.

———. (2018b). Haierism (1): Organizational management theory in the 'China Era'. *Tsinghua Business Review,* 6, 48–56.

Kant, I. (1998). *Groundwork of the metaphysics of morals.* London: Cambridge University Press.

Paine, L. S. & Crawford, R. J. (1988). Haier Group, The (A). Harvard Business School Case 398-101, March 1998. (Revised July 2001), available at https://www.hbs.edu/faculty/Pages/item.aspx?num=496

Wang, Q. (2016). *Rendanheyi management.* Beijing: Economic Management Press.

World Economic Forum. (2017). *The Global Human Capital Report 2017.* Available at https://weforum.ent.box.com/s/dari4dktg4jt2g9xo2o5pksjpatvawdb

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.*

* Interview carried out at BalaBlaCar 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 as 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.

ADDITIONAL SOURCES

BlaBlaCar. (2018). *BlaBlaCar the Inside Story: 10 years, 10 values, 10 stories*,, available at https://www.blablacar.com/blog/inside-story

Carrick, A.-M. & Zemsky, P. (2016). Where to next with BlaBlaCar? INSEAD European Competitiveness Initiative Business Case, January 2016, available at https://cases.insead.edu/blablacar/

The Economist. (2015). BlaBlaCar: Something to chat about, *The Economist,* 22 October 2015, available at https://www.economist.com/business/2015/10/22/something-to-chat-about

Lévêque, F. (2016). Pourquoi BlaBlaCar est plus innovant qu'Uber, *Les Echos,* 24 February 2016, available at https://www.lesechos.fr/24/02/2016/lesechos.fr/021720915094_pourquoi-blablacar-est-plus-innovant-qu-uber.htm

Steinmann, L. (2018). BlaBlaCar repart de l'avant et atteint la rentabilité, *Les Echos,* 25 September 2018, available at https://www.lesechos.fr/industrie-services/tourisme-transport/0302288642008-blablacar-repart-de-lavant-et-atteint-la-rentabilite-2208067.php

CHAPTER 6

JRC Statistical Audit of the Global Talent Competitiveness Index 2019

Michaela Saisana, Marcos Álvarez-Díaz, Marcos Domínguez-Torreiro, and William Becker

European Commission Joint Research Centre

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 ±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.[1] 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'*.[2] 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.[3] 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,[4] 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.[5] 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% (≈ 0.70 × 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.[6]

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.[7]

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.[8] 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%
		Leadership opportunities for women	51%	46%	37%	35%
3. GROW	3.1 Formal Education	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%
		University ranking	62%	64%	51%	54%
	3.2 Lifelong Learning	Quality of management schools	78%	70%	62%	62%
		Prevalence of training in firms	42%	23%	7%	6%
		Employee development	80%	75%	78%	76%
	3.3 Access to Growth Opportunities	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%
		Collaboration within organisations	78%	67%	66%	66%
		Collaboration across organisations	67%	60%	59%	58%
4. RETAIN	4.1 Sustainability	Pension system	65%	79%	58%	63%
		Social protection	86%	72%	79%	74%
		Brain retention	57%	34%	56%	50%
	4.2 Lifestyle	Environmental performance	81%	78%	65%	68%
		Personal safety	63%	65%	58%	58%
		Physician density	80%	65%	43%	47%
		Sanitation	76%	60%	40%	44%
5. VOCATIONAL AND TECHNICAL SKILLS	5.1 Mid-level Skills	Workforce with secondary education	73%	30%	27%	18%
		Population with secondary education	74%	33%	30%	20%
		Technicians and associate professionals	79%	71%	72%	64%
		Labour productivity per employee	49%	64%	63%	68%
	5.2 Employability	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%
		Skills matching with tertiary education	90%	59%	52%	60%
6. GLOBAL KNOWLEDGE SKILLS	6.1 Higher-Level Skills	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%
		Availability of scientists and engineers	55%	51%	58%	55%
	6.2 Talent impact	Innovation output	80%	79%	74%	71%
		High-value exports	38%	32%	26%	24%
		New product entrepreneurial activity	40%	29%	26%	24%
			45%	34%	26%	26%
		Scientific journal articles	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%
More than 10 positions*	**33%**	**57%**	**34%**	**33%**	**45%**	**42%**
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%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
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%
More than 10 positions*	**44%**	**49%**	**38%**
5 to 9 positions	25%	27%	23%
Less than 5 positions	25%	21%	36%
0 positions	5%	3%	3%
Total	**100%**	**100%**	**100%**
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 ≈ 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,[9] 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.[10]

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.[11] 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
I. Uncertainty in the treatment of missing values		**No estimation of missing data**	**Expectation Maximisation (EM)**
II. Uncertainty in the aggregation formula at pillar level		**Arithmetic average**	**Geometric average**
III. Uncertainty in the weights			
GTCI sub-index	Pillar	Reference value for the weight (within the sub-index)	Distribution assigned for robustness analysis (within the sub-index)
Input	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]
Output	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.[12]

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.[13]

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

GTCI Input Sub-Index 2019

GTCI 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.[14] 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); Vértesy (2016); Vértesy & 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].

REFERENCES

Becker, W., Saisana, M., Paruolo, P., & Vandecasteele, I. (2017). Weights and importance in composite indicators: Closing the gap. *Ecological Indicators,* 80: 12–22.

Cornell University, INSEAD, & WIPO. (2018). *The Global Innovation Index 2018: Energizing the world with innovation.* Ithaca, Fontainebleau, and Geneva: Cornell University, INSEAD, & WIPO. Available at https://www.globalinnovationindex.org/

Groeneveld, R. A. & Meeden, G. (1984). Measuring skewness and kurtosis. *Journal of the Royal Statistical Society, Series D (The Statistician),* 33, 391–399.

Little, R. J. A. & Rubin, D. B. (2002). *Statistical analysis with missing data* (2nd ed.). New York: John Wiley & Sons.

Munda, G. (2008). *Social multi-criteria evaluation for a sustainable economy.* Berlin Heidelberg: Springer-Verlag.

Nunnally, J. (1978). *Psychometric theory.* New York: McGraw-Hill.

OECD & EC JRC (Organisation for Economic Co-operation and Development and European Commission Joint Research Centre). (2008). *Handbook on constructing composite indicators: Methodology and user guide.* Paris: OECD. Available at http://www.oecd.org/std/42495745.pdf

Paruolo, P., Saisana, M., & and Saltelli, A. (2013). Ratings and rankings: Voodoo or science? *Journal of the Royal Statistical Society,* A 176 (3), 609–34.

Saisana, M., D'Hombres, B., & Saltelli, A. (2011). Rickety numbers: Volatility of university rankings and policy implications. *Research Policy,* 40 (1): 165–177.

Saisana, M. & Saltelli, A. (2011). Rankings and ratings: Instructions for use. *Hague Journal on the Rule of Law,* 3 (2), 247–268.

Saisana, M., Saltelli, A., & Tarantola, S. (2005). Uncertainty and sensitivity analysis techniques as tools for the analysis and validation of composite indicators. *Journal of the Royal Statistical Society: Series A (Statistics in Society),* 168 (2), 307–323.

Saltelli, A. & Funtowicz, S. (2014). When all models are wrong. *Issues in Science and Technology,* Winter 2014, 79–85.

Saltelli, A., Ratto, M., Andres, T., Campolongo, F., Cariboni, J., Gatelli, D., Saisana, M., & Tarantola, S. (2008). *Global sensitivity analysis: The primer.* Chichester, England: John Wiley & Sons.

Vértesy, D. (2016, July). A Critical Assessment of Quality and Validity of Composite Indicators of Innovation. Paper presented at the OECD Blue Sky III Forum on Science and Innovation Indicators. Ghent, 19–21 September 2016.

Vertesy, D. & Deiss, R. 2016. The Innovation Output Indicator 2016. Methodology Update. EUR 27880. European Commission, Joint Research Centre.

World Economic Forum. (2017a). *The Global Competitiveness Report 2017–2018.* Geneva: World Economic Forum.

———. (2017b). *The Global Human Capital Report: Preparing people for the future of work.* Geneva: World Economic Forum.

Special Section

Cities and Regions

Special Section

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

Bruno Lanvin and Michael Bratt
INSEAD

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.[1]

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:[2]

- 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 3
Cities included in this year's GCTCI*

Note: Highlighted cities are those in the top 10 of this year's GCTCI.
* European cities are displayed separately (see Figure 4 below).

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.[3]

Table 1

Global City Talent Competitiveness Index rankings and overall scores

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

RANK	CITY	SCORE
1	Seoul	93.9
2	San Francisco	88.2
3	Hong Kong	83.5
4	Boston	79.9
5	Tokyo	79.6
6	Copenhagen	79.0
7	Stockholm	78.9
8	Los Angeles	78.5
9	Seattle	75.7
10	Paris	74.5

Pillar 2: Attract

RANK	CITY	SCORE
1	Seattle	81.2
2	Luxembourg	79.4
3	Boston	74.8
4	Ottawa	74.0
5	New York	71.9
6	Dublin	70.2
7	Washington, DC	68.9
8	Zurich	68.9
9	San Francisco	68.3
10	Kiel	66.5

Pillar 3: Grow

RANK	CITY	SCORE
1	Boston	77.5
2	Singapore	76.3
3	New York	74.5
4	Los Angeles	73.6
5	San Francisco	69.6
6	Seoul	69.6
7	Oslo	69.6
8	Sydney	68.2
9	Washington, DC	66.7
10	Melbourne	66.3

Pillar 4: Retain

RANK	CITY	SCORE
1	Taipei	89.2
2	Zurich	81.7
3	Kiel	78.7
4	Vienna	77.6
5	Geneva	72.9
6	Zaragoza	72.7
7	Osaka	68.6
8	Prague	68.0
9	Bangalore	67.7
10	Munich	67.5

Pillar 5: Be Global

RANK	CITY	SCORE
1	Paris	86.5
2	London	82.5
3	Washington, DC	81.9
4	New York	73.9
5	Oslo	71.6
6	Brussels	70.6
7	Moscow	69.6
8	Helsinki	68.0
9	Copenhagen	66.7
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).

REFERENCES AND FURTHER READINGS

Batty, M. (2013). *The new science of cities.* Cambridge, MA: MIT Press.

Dobbs, R., Smit, S., Remes, J., Manyika, J., Roxburgh, C., & Restrepo, A. (2011). Urban world: Mapping the economic power of cities, McKinsey Global Institute, available at http://www.mckinsey.com/global-themes/urbanization/urban-world-mapping-the-economic-power-of-cities

Florida, R. (2005). *Cities and the creative class.* New York and London: Routledge.

Forbes (2011). Global diversity and inclusion: Fostering innovation through a diverse workforce. *Forbes Insights,* available at https://www.forbes.com/forbesinsights/innovation_diversity/

Khanna, P. (2016). *Connectography: Mapping the future of global civilization.* New York: Random House.

Lanvin, B. & Evans, P. (eds.) (2017). *The global talent competitiveness index 2017: Talent and technology.* Fontainebleau, France: INSEAD, Adecco, and HCLI.

———. (2018). *The global talent competitiveness index 2018: Diversity for competitiveness.* Fontainebleau France: INSEAD, the Adecco Group, and Tata Communications.

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 OVERALL	1. ENABLE			2. ATTRACT		
			1.1 R&D expenditure	1.2 ICT access (households with internet)	1.3 Presence of Forbes Global 2000 companies	2.1 GDP per capita	2.2 Quality of life	2.3 Environmental 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 Major universities	3.2 Tertiary enrolment	3.3 Individuals in social networks	4.1 Personal safety	4.2 Physician density	4.3 Affordability	5.1 Workforce with tertiary education	5.2 Population with tertiary education	5.3 Airport connectivity	5.4 Presence 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 OVERALL	1. ENABLE			2. ATTRACT		
			1.1 R&D expenditure	1.2 ICT access (households with internet)	1.3 Presence of Forbes Global 2000 companies	2.1 GDP per capita	2.2 Quality of life	2.3 Environmental 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 Major universities	3.2 Tertiary enrolment	3.3 Individuals in social networks	4.1 Personal safety	4.2 Physician density	4.3 Affordability	5.1 Workforce with tertiary education	5.2 Population with tertiary education	5.3 Airport connectivity	5.4 Presence 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

COUNTRY PROFILES

ALBANIA

1 Key Indicators

Rank (out of 125)	75
Income group	Upper-middle income
Regional group	Europe
Population (millions)	2.87
GDP per capita (PPP US$)	12,020.69
GDP (US$ billions)	13.04
GTCI score	37.35
GTCI score (income group average)	39.16

2 GTCI 2019 Country Profile by Pillar

3

		Score	Rank
1	ENABLE	48.41	67
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
2	ATTRACT	46.02	53
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
3	GROW	33.45	75
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
4	RETAIN	44.82	70
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
5	VOCATIONAL AND TECHNICAL SKILLS	38.98	61
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
6	GLOBAL KNOWLEDGE SKILLS	12.43	98
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

THE GLOBAL TALENT COMPETITIVENESS INDEX 2019 91

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.

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.

Index of Countries

COUNTRY	PAGE
Albania	91
Algeria	92
Argentina	93
Armenia	94
Australia	95
Austria	96
Azerbaijan	97
Bahrain	98
Bangladesh	99
Belgium	100
Bhutan	101
Bosnia and Herzegovina	102
Botswana	103
Brazil	104
Brunei Darussalam	105
Bulgaria	106
Burundi	107
Cambodia	108
Cameroon	109
Canada	110
Chile	111
China	112
Colombia	113
Congo, Dem. Rep.	114
Costa Rica	115
Croatia	116
Cyprus	117
Czech Republic	118
Denmark	119
Dominican Republic	120
Ecuador	121
Egypt	122
El Salvador	123
Estonia	124
Ethiopia	125
Finland	126
France	127
Gambia	128
Georgia	129
Germany	130
Ghana	131
Greece	132

COUNTRY	PAGE
Guatemala	133
Honduras	134
Hungary	135
Iceland	136
India	137
Indonesia	138
Iran, Islamic Rep.	139
Ireland	140
Israel	141
Italy	142
Japan	143
Jordan	144
Kazakhstan	145
Kenya	146
Korea, Rep.	147
Kuwait	148
Kyrgyzstan	149
Lao PDR	150
Latvia	151
Lebanon	152
Lesotho	153
Liberia	154
Lithuania	155
Luxembourg	156
Madagascar	157
Malawi	158
Malaysia	159
Mali	160
Malta	161
Mauritius	162
Mexico	163
Moldova, Rep.	164
Mongolia	165
Montenegro	166
Morocco	167
Mozambique	168
Namibia	169
Nepal	170
Netherlands	171
New Zealand	172
Nicaragua	173
Nigeria	174

COUNTRY	PAGE
Norway	175
Oman	176
Pakistan	177
Panama	178
Paraguay	179
Peru	180
Philippines	181
Poland	182
Portugal	183
Qatar	184
Romania	185
Russian Federation	186
Rwanda	187
Saudi Arabia	188
Senegal	189
Serbia	190
Singapore	191
Slovakia	192
Slovenia	193
South Africa	194
Spain	195
Sri Lanka	196
Sweden	197
Switzerland	198
Tajikistan	199
Tanzania, United Rep.	200
Thailand	201
Trinidad and Tobago	202
Tunisia	203
Turkey	204
Uganda	205
Ukraine	206
United Arab Emirates	207
United Kingdom	208
United States of America	209
Uruguay	210
Venezuela, Bolivarian Rep.	211
Viet Nam	212
Yemen	213
Zambia	214
Zimbabwe	215

ALBANIA

Key Indicators

Rank (out of 125)	**75**
Income group	**Upper-middle income**
Regional group	**Europe**
Population (millions)	**2.87**
GDP per capita (PPP US$)	**12,020.69**
GDP (US$ billions)	**13.04**
GTCI score	**37.35**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**48.41**	**67**
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
2	**ATTRACT**	**46.02**	**53**
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
3	**GROW**	**33.45**	**75**
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
4	**RETAIN**	**44.82**	**70**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.98**	**61**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**12.43**	**98**
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)	**105**
Income group	**Upper-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**41.32**
GDP per capita (PPP US$)	**15,275.37**
GDP (US$ billions)	**170.37**
GTCI score	**28.13**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**32.37**	**114**
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
2	**ATTRACT**	**29.70**	**117**
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
3	**GROW**	**19.22**	**121**
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
4	**RETAIN**	**41.62**	**83**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**30.78**	**87**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**15.09**	**89**
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)	**60**
Income group	**High income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**44.27**
GDP per capita (PPP US$)	**20,786.68**
GDP (US$ billions)	**637.59**
GTCI score	**40.65**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**42.08**	**88**
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
2	**ATTRACT**	**43.59**	**60**
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
3	**GROW**	**45.14**	**37**
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
4	**RETAIN**	**54.15**	**55**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**39.02**	**59**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**19.94**	**77**
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)	**61**
Income group	**Upper-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**2.93**
GDP per capita (PPP US$)	**9,647.49**
GDP (US$ billions)	**11.54**
GTCI score	**39.95**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**48.86**	**65**
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
2	**ATTRACT**	**41.84**	**72**
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
3	**GROW**	**25.50**	**101**
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
4	**RETAIN**	**47.40**	**65**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**43.86**	**50**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**32.26**	**44**
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)	**12**
Income group	**High income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**24.60**
GDP per capita (PPP US$)	**47,046.67**
GDP (US$ billions)	**1,323.42**
GTCI score	**71.08**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**76.10**	**19**
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
2	**ATTRACT**	**74.48**	**8**
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
3	**GROW**	**74.00**	**10**
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
4	**RETAIN**	**81.54**	**12**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**61.40**	**21**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**58.95**	**8**
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)	**18**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**8.81**
GDP per capita (PPP US$)	**52,557.48**
GDP (US$ billions)	**416.60**
GTCI score	**68.31**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**78.62**	**15**
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
2	**ATTRACT**	**63.56**	**21**
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
3	**GROW**	**65.71**	**17**
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
4	**RETAIN**	**88.20**	**3**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**69.96**	**9**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**43.80**	**25**
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)	**43**
Income group	**Upper-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**9.86**
GDP per capita (PPP US$)	**17,398.16**
GDP (US$ billions)	**40.75**
GTCI score	**45.94**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**54.21**	**48**
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
2	**ATTRACT**	**47.36**	**44**
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
3	**GROW**	**31.41**	**81**
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
4	**RETAIN**	**60.25**	**41**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**60.05**	**25**
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	67.76	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
6	**GLOBAL KNOWLEDGE SKILLS**	**22.37**	**68**
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)	**40**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**1.49**
GDP per capita (PPP US$)	**47,526.90**
GDP (US$ billions)	**35.31**
GTCI score	**48.45**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**62.13**	**33**
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
2	**ATTRACT**	**70.12**	**12**
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
3	**GROW**	**43.37**	**39**
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
4	**RETAIN**	**52.99**	**57**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**42.75**	**52**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**19.34**	**78**
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)	**118**
Income group	**Lower-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**164.67**
GDP per capita (PPP US$)	**3,868.82**
GDP (US$ billions)	**249.72**
GTCI score	**22.73**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**38.81**	**102**
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
2	**ATTRACT**	**27.98**	**122**
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
3	**GROW**	**18.45**	**122**
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
4	**RETAIN**	**22.00**	**116**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**19.26**	**116**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**9.88**	**103**
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)	**17**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**11.37**
GDP per capita (PPP US$)	**47,561.03**
GDP (US$ billions)	**492.68**
GTCI score	**68.48**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**75.14**	**21**
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
2	**ATTRACT**	**64.90**	**19**
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
3	**GROW**	**74.75**	**8**
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
4	**RETAIN**	**80.81**	**14**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**64.54**	**15**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**50.71**	**18**
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)	**83**
Income group	**Lower-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**0.81**
GDP per capita (PPP US$)	**9,560.77**
GDP (US$ billions)	**2.51**
GTCI score	**34.62**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**58.23**	**41**
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
2	**ATTRACT**	**39.85**	**82**
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
3	**GROW**	**29.29**	**86**
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
4	**RETAIN**	**43.42**	**75**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**30.02**	**92**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**6.90**	**119**
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)	**86**
Income group	**Upper-middle income**
Regional group	**Europe**
Population (millions)	**3.51**
GDP per capita (PPP US$)	**12,875.97**
GDP (US$ billions)	**18.17**
GTCI score	**33.97**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**40.19**	**94**
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
2	**ATTRACT**	**32.00**	**111**
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
3	**GROW**	**36.79**	**63**
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
4	**RETAIN**	**41.97**	**82**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.46**	**66**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**14.40**	**95**
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)	**62**
Income group	**Upper-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**2.29**
GDP per capita (PPP US$)	**17,354.20**
GDP (US$ billions)	**17.41**
GTCI score	**39.86**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**53.67**	**49**
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
2	**ATTRACT**	**53.05**	**35**
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
3	**GROW**	**41.35**	**49**
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
4	**RETAIN**	**37.51**	**94**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**31.07**	**85**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**22.47**	**67**
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)	**72**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**209.29**
GDP per capita (PPP US$)	**15,483.54**
GDP (US$ billions)	**2,055.51**
GTCI score	**37.57**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**46.30**	**79**
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
2	**ATTRACT**	**40.75**	**80**
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
3	**GROW**	**39.75**	**54**
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
4	**RETAIN**	**47.91**	**63**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**30.73**	**88**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**19.99**	**76**
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)	**36**
Income group	**High income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**0.43**
GDP per capita (PPP US$)	**78,836.12**
GDP (US$ billions)	**12.13**
GTCI score	**49.91**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**65.27**	**28**
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
2	**ATTRACT**	**52.04**	**37**
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
3	**GROW**	**36.51**	**65**
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
4	**RETAIN**	**56.81**	**48**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**60.13**	**24**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**28.68**	**51**
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)	**54**
Income group	**Upper-middle income**
Regional group	**Europe**
Population (millions)	**7.08**
GDP per capita (PPP US$)	**20,329.34**
GDP (US$ billions)	**56.83**
GTCI score	**42.72**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**50.82**	**56**
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
2	**ATTRACT**	**39.39**	**89**
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
3	**GROW**	**36.93**	**62**
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
4	**RETAIN**	**57.43**	**47**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.82**	**63**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**32.90**	**41**
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)	**123**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**10.86**
GDP per capita (PPP US$)	**770.94**
GDP (US$ billions)	**3.48**
GTCI score	**19.18**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**25.18**	**122**
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
2	**ATTRACT**	**29.69**	**118**
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
3	**GROW**	**20.41**	**117**
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
4	**RETAIN**	**17.42**	**123**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**19.15**	**117**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**3.25**	**125**
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)	**107**
Income group	**Lower-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**16.01**
GDP per capita (PPP US$)	**4,001.76**
GDP (US$ billions)	**22.16**
GTCI score	**26.57**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**41.34**	**90**
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
2	**ATTRACT**	**39.84**	**83**
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
3	**GROW**	**20.36**	**119**
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
4	**RETAIN**	**32.05**	**99**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**18.51**	**119**
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	29.31	97
5.2.1	Ease of finding skilled employees	24.42	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
6	**GLOBAL KNOWLEDGE SKILLS**	**7.32**	**117**
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)	**113**
Income group	**Lower-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**24.05**
GDP per capita (PPP US$)	**3,694.20**
GDP (US$ billions)	**34.80**
GTCI score	**25.02**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**31.76**	**117**
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
2	**ATTRACT**	**34.17**	**106**
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
3	**GROW**	**29.02**	**88**
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
4	**RETAIN**	**20.98**	**119**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**23.34**	**112**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**10.89**	**101**
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)	**15**
Income group	**High income**
Regional group	**Northern America**
Population (millions)	**36.71**
GDP per capita (PPP US$)	**46,377.65**
GDP (US$ billions)	**1,653.04**
GTCI score	**70.43**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**81.66**	**11**
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
2	**ATTRACT**	**74.91**	**7**
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
3	**GROW**	**70.03**	**12**
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
4	**RETAIN**	**76.99**	**18**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**62.97**	**19**
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	78.14	12
5.2.1	Ease of finding skilled employees	87.25	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
6	**GLOBAL KNOWLEDGE SKILLS**	**56.03**	**12**
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)	**32**
Income group	**High income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**18.05**
GDP per capita (PPP US$)	**24,084.97**
GDP (US$ billions)	**277.08**
GTCI score	**52.20**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**61.30**	**35**
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
2	**ATTRACT**	**49.68**	**40**
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
3	**GROW**	**55.04**	**27**
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
4	**RETAIN**	**60.64**	**40**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**52.64**	**32**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**33.88**	**38**
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)	**45**
Income group	**Upper-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**1,386.40**
GDP per capita (PPP US$)	**16,806.74**
GDP (US$ billions)	**12,237.70**
GTCI score	**45.44**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**57.07**	**43**
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
2	**ATTRACT**	**41.15**	**76**
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
3	**GROW**	**55.37**	**24**
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
4	**RETAIN**	**48.30**	**62**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.41**	**67**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**32.35**	**43**
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)	**65**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**49.07**
GDP per capita (PPP US$)	**14,552.01**
GDP (US$ billions)	**309.19**
GTCI score	**38.93**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**50.50**	**59**
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
2	**ATTRACT**	**39.23**	**90**
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
3	**GROW**	**41.21**	**50**
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
4	**RETAIN**	**42.92**	**77**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**39.51**	**57**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**20.21**	**75**
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)	**124**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**81.34**
GDP per capita (PPP US$)	**887.21**
GDP (US$ billions)	**37.24**
GTCI score	**18.44**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**14.19**	**124**
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
2	**ATTRACT**	**31.57**	**112**
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
3	**GROW**	**18.30**	**123**
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
4	**RETAIN**	**12.67**	**125**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**28.21**	**97**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**5.68**	**120**
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)	**34**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**4.91**
GDP per capita (PPP US$)	**17,044.19**
GDP (US$ billions)	**57.06**
GTCI score	**51.47**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**58.87**	**39**
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
2	**ATTRACT**	**59.22**	**25**
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
3	**GROW**	**52.98**	**30**
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
4	**RETAIN**	**61.39**	**38**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**50.88**	**36**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**25.49**	**60**
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)	**55**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**4.13**
GDP per capita (PPP US$)	**25,264.44**
GDP (US$ billions)	**54.85**
GTCI score	**42.27**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**45.37**	**83**
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
2	**ATTRACT**	**35.75**	**99**
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
3	**GROW**	**39.30**	**55**
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
4	**RETAIN**	**56.45**	**49**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**45.33**	**46**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**31.42**	**47**
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)	**33**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**1.18**
GDP per capita (PPP US$)	**34,503.47**
GDP (US$ billions)	**21.65**
GTCI score	**52.20**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**56.82**	**44**
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
2	**ATTRACT**	**55.39**	**29**
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
3	**GROW**	**38.88**	**57**
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
4	**RETAIN**	**60.23**	**42**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**54.41**	**31**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**47.45**	**21**
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)	**25**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**10.59**
GDP per capita (PPP US$)	**36,915.93**
GDP (US$ billions)	**215.73**
GTCI score	**59.38**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**69.60**	**25**
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
2	**ATTRACT**	**55.89**	**28**
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
3	**GROW**	**55.29**	**25**
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
4	**RETAIN**	**75.42**	**22**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**61.37**	**22**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**38.74**	**32**
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)	**5**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**5.77**
GDP per capita (PPP US$)	**50,540.81**
GDP (US$ billions)	**324.87**
GTCI score	**73.85**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**86.26**	**3**
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
2	**ATTRACT**	**66.44**	**17**
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
3	**GROW**	**75.67**	**6**
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
4	**RETAIN**	**86.68**	**4**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**68.35**	**10**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**59.70**	**7**
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)	**90**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**10.77**
GDP per capita (PPP US$)	**16,029.62**
GDP (US$ billions)	**75.93**
GTCI score	**33.79**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**47.21**	**73**
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
2	**ATTRACT**	**45.45**	**55**
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
3	**GROW**	**24.80**	**104**
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
4	**RETAIN**	**38.87**	**91**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**30.00**	**93**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**16.38**	**87**
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)	**87**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**16.62**
GDP per capita (PPP US$)	**11,617.43**
GDP (US$ billions)	**103.06**
GTCI score	**33.94**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**38.63**	**103**
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
2	**ATTRACT**	**33.98**	**107**
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
3	**GROW**	**39.12**	**56**
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
4	**RETAIN**	**42.81**	**78**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**34.03**	**77**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**15.07**	**90**
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)	**96**
Income group	**Lower-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**97.55**
GDP per capita (PPP US$)	**11,582.59**
GDP (US$ billions)	**235.37**
GTCI score	**31.68**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**37.58**	**105**
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
2	**ATTRACT**	**29.80**	**116**
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
3	**GROW**	**25.38**	**102**
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
4	**RETAIN**	**45.80**	**68**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**25.92**	**103**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**25.60**	**59**
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)	**106**
Income group	**Lower-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**6.38**
GDP per capita (PPP US$)	**8,006.06**
GDP (US$ billions)	**24.81**
GTCI score	**27.12**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**39.48**	**99**
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
2	**ATTRACT**	**30.12**	**115**
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
3	**GROW**	**28.59**	**91**
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
4	**RETAIN**	**31.26**	**100**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**25.14**	**106**
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	22.95	113
5.2.1	Ease of finding skilled employees	28.72	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
6	**GLOBAL KNOWLEDGE SKILLS**	**8.15**	**114**
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)	**23**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**1.32**
GDP per capita (PPP US$)	**31,637.68**
GDP (US$ billions)	**25.92**
GTCI score	**60.74**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**72.34**	**24**
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
2	**ATTRACT**	**54.96**	**30**
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
3	**GROW**	**55.19**	**26**
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
4	**RETAIN**	**68.28**	**28**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**58.03**	**28**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**55.63**	**14**
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)	**117**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**104.96**
GDP per capita (PPP US$)	**1,899.21**
GDP (US$ billions)	**80.56**
GTCI score	**23.15**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**31.99**	**116**
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
2	**ATTRACT**	**30.96**	**114**
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
3	**GROW**	**19.72**	**120**
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
4	**RETAIN**	**28.93**	**104**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**16.08**	**122**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**11.19**	**100**
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)	**6**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**5.51**
GDP per capita (PPP US$)	**45,191.59**
GDP (US$ billions)	**251.88**
GTCI score	**73.78**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**79.19**	**14**
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
2	**ATTRACT**	**66.97**	**15**
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
3	**GROW**	**78.25**	**4**
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
4	**RETAIN**	**86.21**	**5**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**76.71**	**4**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**55.33**	**15**
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)	**21**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**67.12**
GDP per capita (PPP US$)	**42,778.93**
GDP (US$ billions)	**2,582.50**
GTCI score	**61.82**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**62.70**	**30**
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
2	**ATTRACT**	**54.54**	**33**
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
3	**GROW**	**62.47**	**18**
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
4	**RETAIN**	**77.60**	**17**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**63.19**	**18**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**50.43**	**19**
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)	**93**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**2.10**
GDP per capita (PPP US$)	**1,714.59**
GDP (US$ billions)	**1.01**
GTCI score	**32.80**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**49.02**	**63**
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
2	**ATTRACT**	**54.55**	**32**
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
3	**GROW**	**26.54**	**97**
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
4	**RETAIN**	**29.90**	**101**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**32.99**	**82**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**3.79**	**122**
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)	**76**
Income group	**Lower-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**3.72**
GDP per capita (PPP US$)	**10,698.68**
GDP (US$ billions)	**15.16**
GTCI score	**37.32**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**51.92**	**52**
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
2	**ATTRACT**	**38.71**	**92**
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
3	**GROW**	**24.50**	**107**
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
4	**RETAIN**	**48.85**	**61**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**33.38**	**80**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**26.59**	**56**
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)	**14**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**82.70**
GDP per capita (PPP US$)	**50,715.55**
GDP (US$ billions)	**3,677.44**
GTCI score	**70.72**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**82.96**	**8**
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
2	**ATTRACT**	**64.85**	**20**
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
3	**GROW**	**69.61**	**13**
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
4	**RETAIN**	**84.01**	**10**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**78.72**	**3**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**44.18**	**23**
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)	**94**
Income group	**Lower-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**28.83**
GDP per capita (PPP US$)	**4,641.32**
GDP (US$ billions)	**47.33**
GTCI score	**32.72**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**46.46**	**77**
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
2	**ATTRACT**	**47.22**	**46**
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
3	**GROW**	**33.48**	**74**
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
4	**RETAIN**	**29.17**	**103**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**29.30**	**94**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**10.67**	**102**
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)	**44**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**10.76**
GDP per capita (PPP US$)	**27,809.40**
GDP (US$ billions)	**200.29**
GTCI score	**45.49**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**46.52**	**76**
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
2	**ATTRACT**	**39.58**	**86**
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
3	**GROW**	**41.66**	**47**
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
4	**RETAIN**	**65.29**	**31**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**44.09**	**49**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**35.78**	**36**
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)	**88**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**16.91**
GDP per capita (PPP US$)	**8,150.26**
GDP (US$ billions)	**75.62**
GTCI score	**33.91**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**46.32**	**78**
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	107
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
2	**ATTRACT**	**41.62**	**73**
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
3	**GROW**	**39.90**	**53**
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
4	**RETAIN**	**33.17**	**98**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**28.53**	**95**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**13.93**	**96**
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)	**98**
Income group	**Lower-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**9.27**
GDP per capita (PPP US$)	**4,986.23**
GDP (US$ billions)	**22.98**
GTCI score	**30.05**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**34.68**	**111**
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
2	**ATTRACT**	**41.17**	**75**
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
3	**GROW**	**35.81**	**69**
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
4	**RETAIN**	**27.81**	**109**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**31.14**	**84**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**9.71**	**107**
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)	**53**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**9.78**
GDP per capita (PPP US$)	**28,375.37**
GDP (US$ billions)	**139.14**
GTCI score	**42.89**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**53.29**	**50**
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
2	**ATTRACT**	**41.08**	**78**
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
3	**GROW**	**30.82**	**83**
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
4	**RETAIN**	**58.20**	**45**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**42.05**	**53**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**31.88**	**46**
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)	**13**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**0.34**
GDP per capita (PPP US$)	**53,518.09**
GDP (US$ billions)	**23.91**
GTCI score	**71.03**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**77.48**	**18**
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
2	**ATTRACT**	**65.66**	**18**
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
3	**GROW**	**67.69**	**16**
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
4	**RETAIN**	**84.37**	**9**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**68.20**	**12**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**62.79**	**2**
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)	**80**
Income group	**Lower-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**1,339.18**
GDP per capita (PPP US$)	**7,055.55**
GDP (US$ billions)	**2,597.49**
GTCI score	**35.98**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**47.67**	**70**
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
2	**ATTRACT**	**36.33**	**95**
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
3	**GROW**	**41.57**	**48**
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
4	**RETAIN**	**34.13**	**96**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**35.49**	**72**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**20.72**	**72**
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)	**67**
Income group	**Lower-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**263.99**
GDP per capita (PPP US$)	**12,283.62**
GDP (US$ billions)	**1,015.54**
GTCI score	**38.61**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**50.32**	**60**
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
2	**ATTRACT**	**42.58**	**65**
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
3	**GROW**	**40.88**	**51**
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
4	**RETAIN**	**40.39**	**87**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**42.90**	**51**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**14.59**	**94**
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)	**97**
Income group	**Upper-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**81.16**
GDP per capita (PPP US$)	**20,949.94**
GDP (US$ billions)	**439.51**
GTCI score	**31.59**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**36.25**	**107**
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
2	**ATTRACT**	**22.99**	**123**
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
3	**GROW**	**27.98**	**94**
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
4	**RETAIN**	**44.12**	**72**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**33.64**	**78**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**24.54**	**63**
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)	**16**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**4.81**
GDP per capita (PPP US$)	**76,304.71**
GDP (US$ billions)	**333.73**
GTCI score	**70.15**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**78.47**	**16**
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
2	**ATTRACT**	**70.94**	**11**
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
3	**GROW**	**68.22**	**15**
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
4	**RETAIN**	**79.12**	**16**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**65.85**	**13**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**58.28**	**11**
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)	**20**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**8.71**
GDP per capita (PPP US$)	**38,412.68**
GDP (US$ billions)	**350.85**
GTCI score	**63.26**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**74.40**	**22**
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
2	**ATTRACT**	**46.77**	**49**
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
3	**GROW**	**58.49**	**21**
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
4	**RETAIN**	**76.29**	**19**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**63.52**	**17**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**60.08**	**6**
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)	**38**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**60.55**
GDP per capita (PPP US$)	**39,817.15**
GDP (US$ billions)	**1,934.80**
GTCI score	**49.21**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**51.73**	**53**
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
2	**ATTRACT**	**39.83**	**84**
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
3	**GROW**	**49.50**	**35**
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
4	**RETAIN**	**66.61**	**30**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**54.50**	**30**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**33.08**	**39**
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)	**22**
Income group	**High income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**126.79**
GDP per capita (PPP US$)	**43,875.75**
GDP (US$ billions)	**4,872.14**
GTCI score	**61.56**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**83.37**	**6**
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
2	**ATTRACT**	**47.30**	**45**
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
3	**GROW**	**58.55**	**20**
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
4	**RETAIN**	**75.74**	**20**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**60.66**	**23**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**43.74**	**26**
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)	**57**
Income group	**Upper-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**9.70**
GDP per capita (PPP US$)	**9,153.35**
GDP (US$ billions)	**40.07**
GTCI score	**40.96**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**51.13**	**55**
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
2	**ATTRACT**	**47.06**	**48**
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
3	**GROW**	**31.11**	**82**
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
4	**RETAIN**	**54.61**	**53**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**36.58**	**70**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**25.27**	**61**
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)	**56**
Income group	**Upper-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**18.04**
GDP per capita (PPP US$)	**26,409.54**
GDP (US$ billions)	**159.41**
GTCI score	**41.79**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**50.69**	**57**
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
2	**ATTRACT**	**43.15**	**63**
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
3	**GROW**	**32.20**	**78**
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
4	**RETAIN**	**54.29**	**54**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**40.30**	**56**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**30.09**	**50**
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)	**85**
Income group	**Lower-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**49.70**
GDP per capita (PPP US$)	**3,285.91**
GDP (US$ billions)	**74.94**
GTCI score	**34.21**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**47.15**	**75**
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
2	**ATTRACT**	**45.94**	**54**
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
3	**GROW**	**35.75**	**70**
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
4	**RETAIN**	**27.42**	**110**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**34.11**	**76**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**14.87**	**91**
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)	**30**
Income group	**High income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**51.47**
GDP per capita (PPP US$)	**38,260.18**
GDP (US$ billions)	**1,530.75**
GTCI score	**54.19**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**68.87**	**27**
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
2	**ATTRACT**	**40.71**	**81**
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
3	**GROW**	**53.97**	**28**
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
4	**RETAIN**	**61.38**	**39**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**50.48**	**37**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**49.75**	**20**
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)	**64**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**4.14**
GDP per capita (PPP US$)	**71,943.01**
GDP (US$ billions)	**120.13**
GTCI score	**39.17**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**49.33**	**62**
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
2	**ATTRACT**	**48.14**	**43**
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
3	**GROW**	**26.12**	**99**
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
4	**RETAIN**	**59.74**	**43**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**34.19**	**75**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**17.51**	**83**
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)	**95**
Income group	**Lower-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**6.20**
GDP per capita (PPP US$)	**3,725.54**
GDP (US$ billions)	**7.56**
GTCI score	**32.43**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**37.63**	**104**
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
2	**ATTRACT**	**34.55**	**103**
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
3	**GROW**	**23.28**	**109**
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
4	**RETAIN**	**42.21**	**80**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**39.02**	**60**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**17.88**	**82**
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)	**91**
Income group	**Lower-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**6.86**
GDP per capita (PPP US$)	**7,023.37**
GDP (US$ billions)	**16.85**
GTCI score	**33.56**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**47.23**	**72**
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
2	**ATTRACT**	**43.80**	**59**
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
3	**GROW**	**23.40**	**108**
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
4	**RETAIN**	**44.87**	**69**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**25.48**	**104**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**16.57**	**86**
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)	**37**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**1.94**
GDP per capita (PPP US$)	**27,598.33**
GDP (US$ billions)	**30.26**
GTCI score	**49.39**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**58.81**	**40**
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
2	**ATTRACT**	**46.47**	**51**
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
3	**GROW**	**41.68**	**46**
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
4	**RETAIN**	**61.90**	**37**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**48.63**	**42**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**38.83**	**31**
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)	**59**
Income group	**Upper-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**6.08**
GDP per capita (PPP US$)	**14,675.64**
GDP (US$ billions)	**51.84**
GTCI score	**40.85**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**42.11**	**87**
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
2	**ATTRACT**	**37.82**	**93**
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
3	**GROW**	**37.27**	**61**
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
4	**RETAIN**	**41.05**	**84**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**50.06**	**40**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**36.78**	**35**
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)	**110**
Income group	**Lower-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**2.23**
GDP per capita (PPP US$)	**3,130.15**
GDP (US$ billions)	**2.64**
GTCI score	**25.98**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**40.93**	**91**
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
2	**ATTRACT**	**34.82**	**102**
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
3	**GROW**	**28.02**	**93**
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
4	**RETAIN**	**23.43**	**114**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**25.24**	**105**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**3.41**	**124**
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)	**114**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**4.73**
GDP per capita (PPP US$)	**826.45**
GDP (US$ billions)	**2.16**
GTCI score	**24.45**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**34.10**	**112**
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
2	**ATTRACT**	**42.19**	**69**
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
3	**GROW**	**21.74**	**114**
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
4	**RETAIN**	**26.45**	**112**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**18.55**	**118**
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	28.35	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
6	**GLOBAL KNOWLEDGE SKILLS**	**3.67**	**123**
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)	**35**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**2.83**
GDP per capita (PPP US$)	**32,092.50**
GDP (US$ billions)	**47.17**
GTCI score	**50.75**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**64.48**	**29**
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
2	**ATTRACT**	**46.53**	**50**
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
3	**GROW**	**47.90**	**36**
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
4	**RETAIN**	**64.28**	**32**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**39.48**	**58**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**41.81**	**27**
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)	**10**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**0.60**
GDP per capita (PPP US$)	**103,661.76**
GDP (US$ billions)	**62.40**
GTCI score	**71.18**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**77.96**	**17**
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
2	**ATTRACT**	**85.05**	**2**
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
3	**GROW**	**60.66**	**19**
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
4	**RETAIN**	**84.94**	**8**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**59.61**	**26**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**58.88**	**9**
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)	**119**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**25.57**
GDP per capita (PPP US$)	**1,555.04**
GDP (US$ billions)	**11.50**
GTCI score	**22.70**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**26.91**	**121**
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
2	**ATTRACT**	**39.45**	**88**
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
3	**GROW**	**20.41**	**118**
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
4	**RETAIN**	**15.85**	**124**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**23.82**	**110**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**9.74**	**106**
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)	**115**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**18.62**
GDP per capita (PPP US$)	**1,202.20**
GDP (US$ billions)	**6.30**
GTCI score	**23.79**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**36.29**	**106**
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
2	**ATTRACT**	**33.74**	**108**
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
3	**GROW**	**20.54**	**116**
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
4	**RETAIN**	**28.70**	**106**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**13.68**	**123**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**9.78**	**105**
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)	**27**
Income group	**Upper-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**31.62**
GDP per capita (PPP US$)	**29,431.47**
GDP (US$ billions)	**314.50**
GTCI score	**58.62**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**73.61**	**23**
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
2	**ATTRACT**	**57.75**	**26**
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
3	**GROW**	**53.77**	**29**
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
4	**RETAIN**	**63.38**	**34**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**63.63**	**16**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**39.57**	**29**
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)	**116**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**18.54**
GDP per capita (PPP US$)	**2,211.42**
GDP (US$ billions)	**15.29**
GTCI score	**23.70**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**33.73**	**113**
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
2	**ATTRACT**	**32.37**	**110**
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
3	**GROW**	**22.31**	**111**
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
4	**RETAIN**	**24.73**	**113**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**21.94**	**113**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**7.14**	**118**
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)	**26**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**0.47**
GDP per capita (PPP US$)	**39,534.92**
GDP (US$ billions)	**12.54**
GTCI score	**59.10**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**68.96**	**26**
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
2	**ATTRACT**	**60.21**	**24**
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
3	**GROW**	**51.74**	**33**
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
4	**RETAIN**	**75.55**	**21**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**52.01**	**34**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**46.10**	**22**
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)	**47**
Income group	**Upper-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**1.26**
GDP per capita (PPP US$)	**22,278.49**
GDP (US$ billions)	**13.34**
GTCI score	**45.14**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**62.26**	**32**
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
2	**ATTRACT**	**48.32**	**42**
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
3	**GROW**	**37.57**	**59**
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
4	**RETAIN**	**56.40**	**50**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**47.90**	**43**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**18.40**	**81**
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)	**70**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**129.16**
GDP per capita (PPP US$)	**18,149.10**
GDP (US$ billions)	**1,149.92**
GTCI score	**38.00**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**45.75**	**82**
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
2	**ATTRACT**	**39.49**	**87**
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
3	**GROW**	**42.51**	**42**
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
4	**RETAIN**	**42.33**	**79**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**34.34**	**74**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**23.54**	**66**
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)	**89**
Income group	**Lower-middle income**
Regional group	**Europe**
Population (millions)	**3.55**
GDP per capita (PPP US$)	**5,697.83**
GDP (US$ billions)	**8.13**
GTCI score	**33.86**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**40.72**	**92**
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
2	**ATTRACT**	**35.66**	**100**
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
3	**GROW**	**29.05**	**87**
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
4	**RETAIN**	**43.52**	**74**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**30.21**	**91**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**24.00**	**65**
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)	**77**
Income group	**Lower-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**3.08**
GDP per capita (PPP US$)	**12,999.53**
GDP (US$ billions)	**11.49**
GTCI score	**36.41**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**44.81**	**84**
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
2	**ATTRACT**	**40.77**	**79**
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
3	**GROW**	**30.10**	**85**
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
4	**RETAIN**	**42.00**	**81**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**27.81**	**100**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**32.97**	**40**
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)	**51**
Income group	**Upper-middle income**
Regional group	**Europe**
Population (millions)	**0.62**
GDP per capita (PPP US$)	**18,765.11**
GDP (US$ billions)	**4.77**
GTCI score	**43.34**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**49.35**	**61**
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
2	**ATTRACT**	**43.98**	**58**
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
3	**GROW**	**36.18**	**67**
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
4	**RETAIN**	**47.57**	**64**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**52.41**	**33**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**30.55**	**48**
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)	**100**
Income group	**Lower-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**35.74**
GDP per capita (PPP US$)	**8,217.46**
GDP (US$ billions)	**109.14**
GTCI score	**29.68**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**39.13**	**100**
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
2	**ATTRACT**	**36.19**	**97**
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
3	**GROW**	**26.57**	**96**
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
4	**RETAIN**	**39.96**	**88**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**21.59**	**115**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**14.64**	**93**
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)	**122**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**29.67**
GDP per capita (PPP US$)	**1,247.28**
GDP (US$ billions)	**12.33**
GTCI score	**20.32**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**29.49**	**120**
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
2	**ATTRACT**	**39.65**	**85**
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
3	**GROW**	**14.86**	**124**
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
4	**RETAIN**	**21.39**	**117**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**8.71**	**125**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**7.80**	**116**
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)	**78**
Income group	**Upper-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**2.53**
GDP per capita (PPP US$)	**10,475.52**
GDP (US$ billions)	**13.24**
GTCI score	**36.14**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**50.56**	**58**
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
2	**ATTRACT**	**54.92**	**31**
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
3	**GROW**	**31.82**	**80**
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
4	**RETAIN**	**34.11**	**97**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**26.97**	**101**
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	29.69	96
5.2.1	Ease of finding skilled employees	27.81	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
6	**GLOBAL KNOWLEDGE SKILLS**	**18.46**	**79**
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)	**120**
Income group	**Low income**
Regional group	**Central and Southern Asia**
Population (millions)	**29.30**
GDP per capita (PPP US$)	**2,681.84**
GDP (US$ billions)	**24.47**
GTCI score	**22.57**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**29.51**	**119**
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
2	**ATTRACT**	**28.60**	**120**
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
3	**GROW**	**21.20**	**115**
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
4	**RETAIN**	**22.12**	**115**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**25.07**	**107**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**8.92**	**110**
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)	**8**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**17.13**
GDP per capita (PPP US$)	**52,941.12**
GDP (US$ billions)	**826.20**
GTCI score	**73.02**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**80.74**	**13**
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
2	**ATTRACT**	**66.47**	**16**
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
3	**GROW**	**81.69**	**3**
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
4	**RETAIN**	**84.95**	**7**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**71.57**	**6**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**52.70**	**17**
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)	**11**
Income group	**High income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**4.79**
GDP per capita (PPP US$)	**40,916.94**
GDP (US$ billions)	**205.85**
GTCI score	**71.12**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**84.03**	**5**
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
2	**ATTRACT**	**77.74**	**4**
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
3	**GROW**	**69.47**	**14**
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
4	**RETAIN**	**79.35**	**15**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**62.87**	**20**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**53.24**	**16**
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)	**103**
Income group	**Lower-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**6.22**
GDP per capita (PPP US$)	**5,842.17**
GDP (US$ billions)	**13.81**
GTCI score	**28.92**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**39.05**	**101**
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
2	**ATTRACT**	**41.09**	**77**
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
3	**GROW**	**26.50**	**98**
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
4	**RETAIN**	**39.63**	**89**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**21.72**	**114**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**5.53**	**121**
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)	**99**
Income group	**Lower-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**190.89**
GDP per capita (PPP US$)	**5,860.85**
GDP (US$ billions)	**375.77**
GTCI score	**29.72**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**40.06**	**95**
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
2	**ATTRACT**	**43.52**	**61**
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
3	**GROW**	**25.04**	**103**
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
4	**RETAIN**	**20.01**	**120**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**35.87**	**71**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**13.83**	**97**
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)	**4**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**5.28**
GDP per capita (PPP US$)	**60,978.28**
GDP (US$ billions)	**398.83**
GTCI score	**74.67**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**82.98**	**7**
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
2	**ATTRACT**	**68.70**	**13**
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
3	**GROW**	**76.42**	**5**
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
4	**RETAIN**	**90.74**	**2**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**73.55**	**5**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**55.65**	**13**
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)	**48**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**4.64**
GDP per capita (PPP US$)	**41,675.34**
GDP (US$ billions)	**72.64**
GTCI score	**43.88**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**53.06**	**51**
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
2	**ATTRACT**	**61.61**	**23**
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
3	**GROW**	**31.88**	**79**
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
4	**RETAIN**	**59.46**	**44**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.84**	**62**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**18.43**	**80**
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)	**108**
Income group	**Lower-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**197.02**
GDP per capita (PPP US$)	**5,527.38**
GDP (US$ billions)	**304.95**
GTCI score	**26.37**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**32.17**	**115**
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
2	**ATTRACT**	**28.04**	**121**
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
3	**GROW**	**24.64**	**105**
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
4	**RETAIN**	**28.30**	**108**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**30.39**	**89**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**14.67**	**92**
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)	**52**
Income group	**High income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**4.10**
GDP per capita (PPP US$)	**24,445.97**
GDP (US$ billions)	**61.84**
GTCI score	**43.20**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**47.91**	**69**
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
2	**ATTRACT**	**61.71**	**22**
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
3	**GROW**	**34.78**	**71**
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
4	**RETAIN**	**55.68**	**51**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.81**	**64**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**20.34**	**74**
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)	**101**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**6.81**
GDP per capita (PPP US$)	**9,690.77**
GDP (US$ billions)	**29.73**
GTCI score	**29.64**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**35.16**	**110**
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
2	**ATTRACT**	**41.17**	**74**
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
3	**GROW**	**26.72**	**95**
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
4	**RETAIN**	**37.95**	**93**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**24.85**	**108**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**12.02**	**99**
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)	**79**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**32.17**
GDP per capita (PPP US$)	**13,434.13**
GDP (US$ billions)	**211.39**
GTCI score	**36.11**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**41.83**	**89**
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
2	**ATTRACT**	**42.14**	**71**
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
3	**GROW**	**33.07**	**76**
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
4	**RETAIN**	**40.42**	**86**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.22**	**69**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**21.00**	**70**
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)	**58**
Income group	**Lower-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**104.92**
GDP per capita (PPP US$)	**8,342.80**
GDP (US$ billions)	**313.60**
GTCI score	**40.94**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**48.90**	**64**
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
2	**ATTRACT**	**43.42**	**62**
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
3	**GROW**	**42.80**	**41**
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
4	**RETAIN**	**38.49**	**92**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**34.61**	**73**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**37.41**	**34**
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)	**42**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**37.98**
GDP per capita (PPP US$)	**29,291.35**
GDP (US$ billions)	**524.51**
GTCI score	**47.41**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**57.38**	**42**
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
2	**ATTRACT**	**43.10**	**64**
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
3	**GROW**	**42.19**	**43**
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
4	**RETAIN**	**58.14**	**46**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**51.46**	**35**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**32.21**	**45**
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)	**28**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**10.29**
GDP per capita (PPP US$)	**32,198.82**
GDP (US$ billions)	**217.57**
GTCI score	**55.66**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**62.54**	**31**
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
2	**ATTRACT**	**56.46**	**27**
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
3	**GROW**	**51.81**	**31**
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
4	**RETAIN**	**75.33**	**23**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**49.18**	**41**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**38.63**	**33**
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)	**24**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**2.64**
GDP per capita (PPP US$)	**128,378.30**
GDP (US$ billions)	**167.61**
GTCI score	**60.50**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**75.79**	**20**
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
2	**ATTRACT**	**76.84**	**6**
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
3	**GROW**	**55.52**	**23**
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
4	**RETAIN**	**62.10**	**36**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**64.82**	**14**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**27.91**	**52**
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)	**69**
Income group	**Upper-middle income**
Regional group	**Europe**
Population (millions)	**19.59**
GDP per capita (PPP US$)	**25,840.84**
GDP (US$ billions)	**211.80**
GTCI score	**38.11**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**47.21**	**74**
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
2	**ATTRACT**	**35.75**	**98**
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
3	**GROW**	**32.33**	**77**
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
4	**RETAIN**	**52.57**	**59**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**33.41**	**79**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**27.37**	**53**
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)	**49**
Income group	**Upper-middle income**
Regional group	**Europe**
Population (millions)	**144.50**
GDP per capita (PPP US$)	**25,533.00**
GDP (US$ billions)	**1,577.52**
GTCI score	**43.47**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**46.16**	**81**
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
2	**ATTRACT**	**32.94**	**109**
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
3	**GROW**	**41.87**	**44**
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
4	**RETAIN**	**55.54**	**52**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**44.52**	**47**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**39.78**	**28**
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)	**73**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**12.21**
GDP per capita (PPP US$)	**2,035.65**
GDP (US$ billions)	**9.14**
GTCI score	**37.48**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**61.12**	**36**
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
2	**ATTRACT**	**52.28**	**36**
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
3	**GROW**	**34.26**	**73**
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
4	**RETAIN**	**39.46**	**90**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**28.14**	**98**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**9.63**	**108**
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)	**39**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**32.94**
GDP per capita (PPP US$)	**53,844.74**
GDP (US$ billions)	**683.83**
GTCI score	**48.78**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**61.45**	**34**
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
2	**ATTRACT**	**49.43**	**41**
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
3	**GROW**	**40.37**	**52**
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
4	**RETAIN**	**63.95**	**33**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**50.35**	**38**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**27.12**	**54**
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)	**102**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**15.85**
GDP per capita (PPP US$)	**2,712.34**
GDP (US$ billions)	**16.37**
GTCI score	**29.38**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**39.72**	**97**
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
2	**ATTRACT**	**42.42**	**67**
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
3	**GROW**	**30.57**	**84**
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
4	**RETAIN**	**28.78**	**105**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**26.20**	**102**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**8.63**	**111**
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)	**68**
Income group	**Upper-middle income**
Regional group	**Europe**
Population (millions)	**7.02**
GDP per capita (PPP US$)	**15,090.03**
GDP (US$ billions)	**41.43**
GTCI score	**38.45**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**43.64**	**85**
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
2	**ATTRACT**	**37.62**	**94**
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
3	**GROW**	**37.68**	**58**
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
4	**RETAIN**	**44.57**	**71**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**42.05**	**54**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**25.16**	**62**
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)	**2**
Income group	**High income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**5.61**
GDP per capita (PPP US$)	**93,905.42**
GDP (US$ billions)	**323.91**
GTCI score	**77.27**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**92.34**	**1**
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
2	**ATTRACT**	**87.39**	**1**
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
3	**GROW**	**72.17**	**11**
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
4	**RETAIN**	**71.18**	**26**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**71.47**	**7**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**69.09**	**1**
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)	**41**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**5.44**
GDP per capita (PPP US$)	**32,110.49**
GDP (US$ billions)	**95.77**
GTCI score	**48.37**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**56.36**	**45**
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
2	**ATTRACT**	**45.12**	**56**
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
3	**GROW**	**43.30**	**40**
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
4	**RETAIN**	**62.87**	**35**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**50.20**	**39**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**32.38**	**42**
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)	**29**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**2.07**
GDP per capita (PPP US$)	**34,801.63**
GDP (US$ billions)	**48.77**
GTCI score	**54.44**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**59.20**	**38**
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
2	**ATTRACT**	**47.14**	**47**
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
3	**GROW**	**51.10**	**34**
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
4	**RETAIN**	**69.08**	**27**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**56.25**	**29**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**43.86**	**24**
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)	**71**
Income group	**Upper-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**56.72**
GDP per capita (PPP US$)	**13,497.99**
GDP (US$ billions)	**349.42**
GTCI score	**37.94**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**47.43**	**71**
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
2	**ATTRACT**	**46.24**	**52**
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
3	**GROW**	**41.69**	**45**
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
4	**RETAIN**	**29.63**	**102**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.34**	**68**
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	31.76	90
5.2.1	Ease of finding skilled employees	37.01	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
6	**GLOBAL KNOWLEDGE SKILLS**	**24.30**	**64**
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)	**31**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**46.57**
GDP per capita (PPP US$)	**38,090.94**
GDP (US$ billions)	**1,311.32**
GTCI score	**52.85**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**59.91**	**37**
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
2	**ATTRACT**	**49.93**	**39**
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
3	**GROW**	**51.76**	**32**
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
4	**RETAIN**	**72.43**	**25**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**44.23**	**48**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**38.84**	**30**
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)	**82**
Income group	**Lower-middle income**
Regional group	**Central and Southern Asia**
Population (millions)	**21.44**
GDP per capita (PPP US$)	**12,810.95**
GDP (US$ billions)	**87.17**
GTCI score	**34.79**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**48.03**	**68**
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
2	**ATTRACT**	**34.46**	**104**
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
3	**GROW**	**28.63**	**90**
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
4	**RETAIN**	**43.88**	**73**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**38.56**	**65**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**15.19**	**88**
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)	**7**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**10.07**
GDP per capita (PPP US$)	**50,069.65**
GDP (US$ billions)	**538.04**
GTCI score	**73.53**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**81.83**	**10**
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
2	**ATTRACT**	**71.22**	**10**
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
3	**GROW**	**75.55**	**7**
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
4	**RETAIN**	**85.89**	**6**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**68.22**	**11**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**58.51**	**10**
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)	**1**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**8.47**
GDP per capita (PPP US$)	**65,006.53**
GDP (US$ billions)	**678.89**
GTCI score	**81.82**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**92.21**	**2**
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
2	**ATTRACT**	**77.64**	**5**
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
3	**GROW**	**81.73**	**2**
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
4	**RETAIN**	**94.18**	**1**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**82.79**	**1**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**62.38**	**4**
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)	**81**
Income group	**Low income**
Regional group	**Central and Southern Asia**
Population (millions)	**8.92**
GDP per capita (PPP US$)	**3,180.39**
GDP (US$ billions)	**7.15**
GTCI score	**35.17**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**39.63**	**98**
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
2	**ATTRACT**	**35.34**	**101**
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
3	**GROW**	**25.75**	**100**
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
4	**RETAIN**	**52.79**	**58**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**40.67**	**55**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**16.84**	**85**
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)	**111**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**57.31**
GDP per capita (PPP US$)	**2,945.88**
GDP (US$ billions)	**52.09**
GTCI score	**25.87**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**35.51**	**108**
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
2	**ATTRACT**	**42.48**	**66**
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
3	**GROW**	**24.62**	**106**
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
4	**RETAIN**	**26.53**	**111**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**17.91**	**121**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**8.17**	**113**
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)	**66**
Income group	**Upper-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**69.04**
GDP per capita (PPP US$)	**17,870.52**
GDP (US$ billions)	**455.22**
GTCI score	**38.62**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**54.55**	**47**
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
2	**ATTRACT**	**42.16**	**70**
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
3	**GROW**	**34.32**	**72**
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
4	**RETAIN**	**43.37**	**76**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**31.64**	**83**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**25.65**	**58**
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)	**50**
Income group	**High income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**1.37**
GDP per capita (PPP US$)	**31,577.67**
GDP (US$ billions)	**22.10**
GTCI score	**43.43**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**51.51**	**54**
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
2	**ATTRACT**	**51.09**	**38**
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
3	**GROW**	**36.58**	**64**
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
4	**RETAIN**	**53.20**	**56**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**47.38**	**44**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**20.79**	**71**
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)	**84**
Income group	**Lower-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**11.53**
GDP per capita (PPP US$)	**11,910.95**
GDP (US$ billions)	**40.26**
GTCI score	**34.37**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**35.44**	**109**
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
2	**ATTRACT**	**36.28**	**96**
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
3	**GROW**	**28.34**	**92**
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
4	**RETAIN**	**46.03**	**67**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**33.32**	**81**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**26.84**	**55**
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)	**74**
Income group	**Upper-middle income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**80.75**
GDP per capita (PPP US$)	**27,916.45**
GDP (US$ billions)	**851.10**
GTCI score	**37.44**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**48.67**	**66**
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
2	**ATTRACT**	**31.57**	**113**
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
3	**GROW**	**36.37**	**66**
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
4	**RETAIN**	**51.11**	**60**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**30.38**	**90**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**26.54**	**57**
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)	**109**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**42.86**
GDP per capita (PPP US$)	**1,863.84**
GDP (US$ billions)	**25.89**
GTCI score	**25.99**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**42.92**	**86**
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
2	**ATTRACT**	**42.28**	**68**
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
3	**GROW**	**23.05**	**110**
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
4	**RETAIN**	**21.27**	**118**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**18.44**	**120**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**7.99**	**115**
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)	**63**
Income group	**Lower-middle income**
Regional group	**Europe**
Population (millions)	**44.83**
GDP per capita (PPP US$)	**8,666.90**
GDP (US$ billions)	**112.15**
GTCI score	**39.41**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**39.79**	**96**
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
2	**ATTRACT**	**34.45**	**105**
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
3	**GROW**	**36.00**	**68**
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
4	**RETAIN**	**46.17**	**66**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**45.75**	**45**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**34.27**	**37**
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)	**19**
Income group	**High income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**9.40**
GDP per capita (PPP US$)	**73,878.47**
GDP (US$ billions)	**382.58**
GTCI score	**65.90**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**81.38**	**12**
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
2	**ATTRACT**	**83.68**	**3**
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
3	**GROW**	**56.45**	**22**
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
4	**RETAIN**	**72.77**	**24**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**70.59**	**8**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**30.53**	**49**
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)	**9**
Income group	**High income**
Regional group	**Europe**
Population (millions)	**66.02**
GDP per capita (PPP US$)	**43,876.60**
GDP (US$ billions)	**2,622.43**
GTCI score	**71.44**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**81.84**	**9**
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
2	**ATTRACT**	**72.01**	**9**
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
3	**GROW**	**74.35**	**9**
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
4	**RETAIN**	**81.84**	**11**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**58.38**	**27**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**60.22**	**5**
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)	**3**
Income group	**High income**
Regional group	**Northern America**
Population (millions)	**325.72**
GDP per capita (PPP US$)	**59,531.66**
GDP (US$ billions)	**19,390.60**
GTCI score	**76.64**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**84.61**	**4**
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
2	**ATTRACT**	**67.78**	**14**
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
3	**GROW**	**83.28**	**1**
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
4	**RETAIN**	**81.28**	**13**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**80.22**	**2**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**62.66**	**3**
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)	**46**
Income group	**High income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**3.46**
GDP per capita (PPP US$)	**22,562.46**
GDP (US$ billions)	**56.16**
GTCI score	**45.22**
GTCI score (income group average)	**59.93**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**54.89**	**46**
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
2	**ATTRACT**	**54.21**	**34**
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
3	**GROW**	**43.89**	**38**
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
4	**RETAIN**	**66.70**	**29**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**31.02**	**86**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**20.61**	**73**
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)	**112**
Income group	**Upper-middle income**
Regional group	**Latin America and the Caribbean**
Population (millions)	**31.98**
GDP per capita (PPP US$)	**17,639.89**
GDP (US$ billions)	**482.36**
GTCI score	**25.70**
GTCI score (income group average)	**39.16**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**11.97**	**125**
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
2	**ATTRACT**	**22.32**	**124**
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
3	**GROW**	**37.30**	**60**
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
4	**RETAIN**	**36.96**	**95**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**28.33**	**96**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**17.33**	**84**
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)	**92**
Income group	**Lower-middle income**
Regional group	**Eastern, Southeastern Asia and Oceania**
Population (millions)	**95.54**
GDP per capita (PPP US$)	**6,775.83**
GDP (US$ billions)	**223.86**
GTCI score	**33.41**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**46.23**	**80**
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
2	**ATTRACT**	**39.06**	**91**
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
3	**GROW**	**28.89**	**89**
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
4	**RETAIN**	**40.73**	**85**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**24.09**	**109**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**21.46**	**69**
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)	**125**
Income group	**Low income**
Regional group	**Northern Africa and Western Asia**
Population (millions)	**28.25**
GDP per capita (PPP US$)	**2,507.47**
GDP (US$ billions)	**27.32**
GTCI score	**11.97**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**18.86**	**123**
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
2	**ATTRACT**	**9.31**	**125**
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
3	**GROW**	**5.71**	**125**
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
4	**RETAIN**	**18.11**	**122**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**11.60**	**124**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**8.25**	**112**
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)	**104**
Income group	**Lower-middle income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**17.09**
GDP per capita (PPP US$)	**4,050.26**
GDP (US$ billions)	**25.81**
GTCI score	**28.91**
GTCI score (income group average)	**31.64**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**40.66**	**93**
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
2	**ATTRACT**	**44.91**	**57**
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
3	**GROW**	**22.24**	**112**
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
4	**RETAIN**	**28.61**	**107**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**27.84**	**99**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**9.22**	**109**
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)	**121**
Income group	**Low income**
Regional group	**Sub-Saharan Africa**
Population (millions)	**16.53**
GDP per capita (PPP US$)	**2,085.68**
GDP (US$ billions)	**17.85**
GTCI score	**22.31**
GTCI score (income group average)	**24.81**

GTCI 2019 Country Profile by Pillar

		Score	Rank
1	**ENABLE**	**30.29**	**118**
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
2	**ATTRACT**	**29.51**	**119**
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
3	**GROW**	**21.81**	**113**
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
4	**RETAIN**	**18.90**	**121**
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
5	**VOCATIONAL AND TECHNICAL SKILLS**	**23.49**	**111**
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
6	**GLOBAL KNOWLEDGE SKILLS**	**9.86**	**104**
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

1 **1.2.3 Cluster development**

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**

3

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
25	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	4.24	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
60	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	Iran, Islamic Rep.	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	Serbia	3.37	25.97
94	Nepal	3.37	25.94
95	Botswana	3.35	25.24
96	Argentina	3.28	22.95
97	Uruguay	3.27	22.89
98	Peru	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	15.14
111	Romania	3.02	14.79
112	Tajikistan	3.01	14.63
113	Greece	3.00	14.10
114	El Salvador	2.96	12.86
114	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	Kyrgyzstan	2.80	7.78
122	Mongolia	2.78	7.14
123	Moldova, Rep.	2.64	2.73
123	Zimbabwe	2.64	2.73
125	Venezuela, Bolivarian Rep.	2.55	0.00

4

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 231

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.

Index of Data Tables

1 ENABLE 223

1.1 Regulatory Landscape
1.1.1 Government effectiveness 224
1.1.2 Business-government relations 225
1.1.3 Political stability 226
1.1.4 Regulatory quality 227
1.1.5 Corruption 228

1.2 Market Landscape
1.2.1 Competition intensity 229
1.2.2 Ease of doing business 230
1.2.3 Cluster development 231
1.2.4 R&D expenditure 232
1.2.5 ICT infrastructure 233
1.2.6 Technology utilisation 234

1.3 Business and Labour Landscape
1.3.1 Ease of hiring 235
1.3.2 Ease of redundancy 236
1.3.3 Active labour market policies 237
1.3.4 Labour-employer cooperation 238
1.3.5 Professional management 239
1.3.6 Relationship of pay to productivity 240

2 ATTRACT 241

2.1 External Openness
2.1.1 FDI and technology transfer 242
2.1.2 Prevalence of foreign ownership 243
2.1.3 Migrant stock 244
2.1.4 International students 245
2.1.5 Brain gain 246

2.2 Internal Openness
2.2.1 Tolerance of minorities 247
2.2.2 Tolerance of immigrants 248
2.2.3 Social mobility 249
2.2.4 Female graduates 250
2.2.5 Gender earnings gap 251
2.2.6 Leadership opportunities for women 252

3 GROW 253

3.1 Formal Education
3.1.1 Vocational enrolment 254
3.1.2 Tertiary enrolment 255
3.1.3 Tertiary education expenditure 256
3.1.4 Reading, maths, and science 257
3.1.5 University ranking 258

3.2 Lifelong Learning
3.2.1 Quality of management schools 259
3.2.2 Prevalence of training in firms 260
3.2.3 Employee development 261

3.3 Access to Growth Opportunities
3.3.1 Delegation of authority 262
3.3.2 Personal rights 263
3.3.3 Use of virtual social networks 264
3.3.4 Use of virtual professional networks 265
3.3.5 Collaboration within organisations 266
3.3.6 Collaboration across organisations 267

4 RETAIN 269

4.1 Sustainability
4.1.1 Pension system 270
4.1.2 Social protection 271
4.1.3 Brain retention 272

4.2 Lifestyle
4.2.1 Environmental performance 273
4.2.2 Personal safety 274
4.2.3 Physician density 275
4.2.4 Sanitation 276

5 VOCATIONAL AND TECHNICAL SKILLS 277

5.1 Mid-Level Skills
5.1.1 Workforce with secondary education 278
5.1.2 Population with secondary education 279
5.1.3 Technicians and associate professionals 280
5.1.4 Labour productivity per employee 281

5.2 Employability
5.2.1 Ease of finding skilled employees 282
5.2.2 Relevance of education system to the economy 283
5.2.3 Skills matching with secondary education 284
5.2.4 Skills matching with tertiary education 285

6 GLOBAL KNOWLEDGE SKILLS 287

6.1 High-Level Skills
6.1.1 Workforce with tertiary education 288
6.1.2 Population with tertiary education 289
6.1.3 Professionals 290
6.1.4 Researchers 291
6.1.5 Senior officials and managers 292
6.1.6 Availability of scientists and engineers 293

6.2 Talent Impact
6.2.1 Innovation output 294
6.2.2 High-value exports 295
6.2.3 New product entrepreneurial activity 296
6.2.4 New business density 297
6.2.5 Scientific journal articles 298

Pillar 1

Enable

1.1.1 Government effectiveness

Government effectiveness indicator | 2016

Rank	Country	Value	Score
1	Singapore	2.21	100.00
2	Switzerland	2.03	95.53
3	Denmark	1.89	92.06
4	Norway	1.88	91.81
5	New Zealand	1.86	91.32
6	Finland	1.85	91.07
7	Netherlands	1.84	90.82
8	Japan	1.83	90.57
9	Canada	1.80	89.83
10	Sweden	1.79	89.58
11	Germany	1.74	88.34
12	Luxembourg	1.69	87.10
13	United Kingdom	1.61	85.11
14	Australia	1.58	84.37
15	Austria	1.51	82.63
16	United States of America	1.48	81.89
17	France	1.41	80.15
17	Iceland	1.41	80.15
17	United Arab Emirates	1.41	80.15
20	Ireland	1.35	78.66
20	Israel	1.35	78.66
22	Belgium	1.33	78.16
23	Portugal	1.22	75.43
24	Estonia	1.12	72.95
24	Slovenia	1.12	72.95
24	Spain	1.12	72.95
27	Lithuania	1.09	72.21
28	Brunei Darussalam	1.07	71.71
28	Korea, Rep.	1.07	71.71
30	Czech Republic	1.06	71.46
31	Chile	1.02	70.47
32	Latvia	1.00	69.98
33	Cyprus	0.98	69.48
34	Mauritius	0.96	68.98
35	Malta	0.95	68.73
36	Slovakia	0.89	67.25
37	Malaysia	0.88	67.00
38	Qatar	0.75	63.77
39	Poland	0.69	62.28
40	Uruguay	0.55	58.81
41	Italy	0.52	58.06
42	Botswana	0.51	57.82
42	Georgia	0.51	57.82
44	Bhutan	0.49	57.32
44	Croatia	0.49	57.32
46	Hungary	0.45	56.33
47	China	0.36	54.09
47	Costa Rica	0.36	54.09
49	Thailand	0.34	53.60
50	Bahrain	0.32	53.10
51	Bulgaria	0.29	52.36
52	South Africa	0.27	51.86
53	Saudi Arabia	0.24	51.12
54	Trinidad and Tobago	0.22	50.62
55	Greece	0.21	50.37
56	Oman	0.19	49.88
56	Panama	0.19	49.88
58	Argentina	0.18	49.63
59	Namibia	0.17	49.38
60	Jordan	0.14	48.64
60	Mexico	0.14	48.64
62	Rwanda	0.11	47.89
63	India	0.10	47.64
63	Montenegro	0.10	47.64
65	Serbia	0.09	47.39
66	Turkey	0.05	46.40
67	Colombia	0.02	45.66
68	Indonesia	0.01	45.41
68	Viet Nam	0.01	45.41
70	Albania	0.00	45.16
71	Philippines	-0.01	44.91
72	Kazakhstan	-0.06	43.67
73	Morocco	-0.10	42.68
74	Mongolia	-0.11	42.43
75	Armenia	-0.15	41.44
76	Azerbaijan	-0.16	41.19w
77	Peru	-0.17	40.94
77	Romania	-0.17	40.94
79	Brazil	-0.18	40.69
79	Kuwait	-0.18	40.69
81	Ghana	-0.20	40.20
81	Iran, Islamic Rep.	-0.20	40.20
83	Sri Lanka	-0.21	39.95
83	Tunisia	-0.21	39.95
85	Russian Federation	-0.22	39.70
86	Dominican Republic	-0.25	38.96
87	El Salvador	-0.28	38.21
88	Kenya	-0.31	37.47
89	Laos	-0.39	35.48
90	Bosnia and Herzegovina	-0.43	34.49
90	Ecuador	-0.43	34.49
92	Senegal	-0.47	33.50
93	Lebanon	-0.53	32.01
94	Algeria	-0.54	31.76
95	Tanzania, United Rep.	-0.55	31.51
96	Uganda	-0.57	31.02
97	Ukraine	-0.58	30.77
98	Guatemala	-0.60	30.27
99	Moldova, Rep.	-0.62	29.78
100	Ethiopia	-0.64	29.28
100	Pakistan	-0.64	29.28
102	Egypt	-0.66	28.78
102	Zambia	-0.66	28.78
104	Bangladesh	-0.69	28.04
104	Cambodia	-0.69	28.04
106	Nicaragua	-0.70	27.79
107	Honduras	-0.73	27.05
107	Malawi	-0.73	27.05
109	Cameroon	-0.76	26.30
110	Paraguay	-0.77	26.05
111	Lesotho	-0.80	25.31
112	Nepal	-0.81	25.06
113	Gambia	-0.84	24.32
114	Mozambique	-0.85	24.07
115	Kyrgyzstan	-0.90	22.83
116	Mali	-0.99	20.60
117	Tajikistan	-1.02	19.85
118	Nigeria	-1.09	18.11
119	Zimbabwe	-1.16	16.38
120	Madagascar	-1.17	16.13
121	Venezuela, Bolivarian Rep.	-1.29	13.15
122	Liberia	-1.32	12.41
123	Burundi	-1.40	10.42
124	Congo, Dem. Rep.	-1.51	7.69
125	Yemen	-1.82	0.00

SOURCE: World Bank, *Worldwide Governance Indicators*, 2017 Update (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
1	Singapore	6.28	100.00
2	United Arab Emirates	6.17	97.57
3	Qatar	6.12	96.47
4	Luxembourg	6.01	94.04
5	Finland	5.90	91.61
6	Rwanda	5.89	91.39
7	Norway	5.85	90.51
8	Ireland	5.80	89.40
9	New Zealand	5.74	88.08
10	Bahrain	5.71	87.42
11	Switzerland	5.67	86.53
12	Malaysia	5.64	85.87
13	Oman	5.47	82.12
14	Laos	5.43	81.24
15	Brunei Darussalam	5.38	80.13
16	Japan	5.37	79.91
17	Canada	5.34	79.25
18	Netherlands	5.33	79.03
19	Sweden	5.30	78.37
20	Mauritius	5.22	76.60
21	Denmark	5.12	74.39
22	Chile	5.09	73.73
23	Gambia	5.08	73.51
24	Philippines	5.07	73.29
25	United Kingdom	5.01	71.96
26	Germany	5.00	71.74
27	Saudi Arabia	4.99	71.52
28	Zambia	4.94	70.42
29	Botswana	4.93	70.20
29	Sri Lanka	4.93	70.20
31	Malta	4.90	69.54
32	Austria	4.89	69.32
33	China	4.88	69.09
34	Indonesia	4.84	68.21
35	Estonia	4.83	67.99
36	Senegal	4.78	66.89
36	Tajikistan	4.78	66.89
38	Mexico	4.75	66.23
39	Australia	4.68	64.68
40	Costa Rica	4.66	64.24
41	Dominican Republic	4.65	64.02
42	Kazakhstan	4.62	63.36
43	Portugal	4.61	63.13
44	Panama	4.59	62.69
45	Namibia	4.58	62.47
46	Guatemala	4.57	62.25
46	Spain	4.57	62.25
48	Cyprus	4.56	62.03
48	Korea, Rep.	4.56	62.03
50	Bosnia and Herzegovina	4.55	61.81
50	Morocco	4.55	61.81
52	Jordan	4.54	61.59
52	Montenegro	4.54	61.59
52	Nicaragua	4.54	61.59
55	Kenya	4.52	61.15
56	Colombia	4.48	60.26
56	Turkey	4.48	60.26
58	Bhutan	4.47	60.04
58	Mozambique	4.47	60.04
60	Liberia	4.46	59.82
60	Trinidad and Tobago	4.46	59.82
62	Azerbaijan	4.45	59.60
63	Uganda	4.44	59.38
64	Georgia	4.43	59.16
65	Viet Nam	4.37	57.84
66	Thailand	4.33	56.95
67	Lesotho	4.29	56.07
68	Iceland	4.27	55.63
68	Nigeria	4.27	55.63
70	Israel	4.25	55.19
71	Paraguay	4.24	54.97
72	Peru	4.22	54.53
73	Malawi	4.21	54.30
74	United States of America	4.17	53.42
75	Honduras	4.07	51.21
75	Mali	4.07	51.21
77	Lithuania	4.06	50.99
78	Armenia	4.05	50.77
78	Cameroon	4.05	50.77
80	Uruguay	4.03	50.33
81	Ethiopia	4.01	49.89
82	El Salvador	3.99	49.45
83	Bangladesh	3.98	49.23
83	Cambodia	3.98	49.23
85	Albania	3.96	48.79
86	Belgium	3.92	47.90
87	Latvia	3.90	47.46
88	India	3.89	47.24
89	Russian Federation	3.88	47.02
90	Tunisia	3.86	46.58
91	Kyrgyzstan	3.83	45.92
91	Poland	3.83	45.92
93	Algeria	3.81	45.47
94	Brazil	3.79	45.03
94	Ecuador	3.79	45.03
96	Czech Republic	3.77	44.59
96	Nepal	3.77	44.59
96	Tanzania, United Rep.	3.77	44.59
99	Ghana	3.65	41.94
99	Romania	3.65	41.94
101	Serbia	3.59	40.62
102	Egypt	3.56	39.96
102	Moldova, Rep.	3.56	39.96
104	Pakistan	3.54	39.51
105	South Africa	3.44	37.31
106	Hungary	3.40	36.42
107	France	3.39	36.20
108	Greece	3.38	35.98
108	Kuwait	3.38	35.98
108	Ukraine	3.38	35.98
111	Iran, Islamic Rep.	3.32	34.66
111	Madagascar	3.32	34.66
113	Zimbabwe	3.29	34.00
114	Bulgaria	3.25	33.11
115	Yemen	3.22	32.45
116	Slovenia	3.20	32.01
117	Lebanon	3.18	31.57
118	Croatia	3.12	30.24
119	Burundi	3.03	28.26
120	Mongolia	2.98	27.15
121	Slovakia	2.88	24.94
122	Italy	2.66	20.09
123	Argentina	2.33	12.80
124	Venezuela, Bolivarian Rep.	1.75	0.00
	Congo, Dem. Rep.	n/a	n/a

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
1	Singapore	1.53	100.00
2	New Zealand	1.49	99.07
3	Luxembourg	1.41	97.22
4	Iceland	1.33	95.37
5	Switzerland	1.32	95.14
6	Brunei Darussalam	1.26	93.75
7	Canada	1.24	93.29
8	Norway	1.17	91.67
9	Uruguay	1.10	90.05
10	Botswana	1.09	89.81
11	Malta	1.08	89.58
12	Mauritius	1.05	88.89
13	Portugal	1.02	88.19
14	Japan	1.01	87.96
15	Bhutan	0.99	87.50
15	Czech Republic	0.99	87.50
15	Slovenia	0.99	87.50
18	Sweden	0.98	87.27
19	Australia	0.96	86.81
19	Finland	0.96	86.81
21	Netherlands	0.89	85.19
22	Ireland	0.88	84.95
23	Qatar	0.87	84.72
24	Denmark	0.85	84.26
25	Austria	0.82	83.56
25	Mongolia	0.82	83.56
27	Lithuania	0.80	83.10
27	Oman	0.80	83.10
29	Germany	0.76	82.18
30	Costa Rica	0.75	81.94
31	Namibia	0.74	81.71
32	Hungary	0.71	81.02
33	Estonia	0.69	80.56
34	Croatia	0.68	80.32
35	Slovakia	0.62	78.94
36	Cyprus	0.57	77.78
37	Chile	0.51	76.39
37	Poland	0.51	76.39
39	Laos	0.50	76.16
40	Spain	0.49	75.93
41	Belgium	0.48	75.69
42	United Arab Emirates	0.44	74.77
43	Panama	0.43	74.54
44	Latvia	0.39	73.61
45	United Kingdom	0.38	73.38
46	Italy	0.35	72.69
46	United States of America	0.35	72.69
48	Dominican Republic	0.29	71.30
49	Trinidad and Tobago	0.28	71.06
50	Romania	0.27	70.83
51	Albania	0.26	70.60
52	Argentina	0.22	69.68
53	Paraguay	0.20	69.21
54	Cambodia	0.18	68.75
54	Zambia	0.18	68.75
56	Korea, Rep.	0.17	68.52
56	Viet Nam	0.17	68.52
58	Montenegro	0.16	68.29
59	Malaysia	0.10	66.90
60	Sri Lanka	0.07	66.20
61	Serbia	0.05	65.74
62	Kazakhstan	0.04	65.51
63	Bulgaria	0.03	65.28
64	Rwanda	-0.05	63.43
65	El Salvador	-0.06	63.19
65	France	-0.06	63.19
65	Malawi	-0.06	63.19
68	Ecuador	-0.10	62.27
69	South Africa	-0.13	61.57
70	Greece	-0.14	61.34
71	Kuwait	-0.15	61.11
72	Ghana	-0.16	60.88
72	Peru	-0.16	60.88
74	Nicaragua	-0.17	60.65
75	Lesotho	-0.25	58.80
76	Senegal	-0.27	58.33
77	Moldova, Rep.	-0.28	58.10
78	Georgia	-0.29	57.87
78	Morocco	-0.29	57.87
80	Honduras	-0.36	56.25
81	Bosnia and Herzegovina	-0.38	55.79
81	Indonesia	-0.38	55.79
83	Madagascar	-0.40	55.32
84	Tanzania, United Rep.	-0.41	55.09
85	Brazil	-0.45	54.17
86	Saudi Arabia	-0.50	53.01
87	China	-0.52	52.55
87	Gambia	-0.52	52.55
89	Jordan	-0.53	52.31
90	Guatemala	-0.54	52.08
91	Liberia	-0.55	51.85
92	Armenia	-0.60	50.69
93	Zimbabwe	-0.61	50.46
94	Kyrgyzstan	-0.66	49.31
95	Uganda	-0.72	47.92
96	Iran, Islamic Rep.	-0.74	47.45
97	Mexico	-0.77	46.76
98	Nepal	-0.79	46.30
98	Tajikistan	-0.79	46.30
100	Israel	-0.83	45.37
101	Bahrain	-0.86	44.68
102	Azerbaijan	-0.87	44.44
103	Russian Federation	-0.89	43.98
104	Thailand	-0.93	43.06
105	Cameroon	-0.95	42.59
105	India	-0.95	42.59
107	Colombia	-0.96	42.36
108	Tunisia	-0.99	41.67
109	Venezuela, Bolivarian Rep.	-1.03	40.74
110	Mozambique	-1.05	40.28
111	Algeria	-1.14	38.19
112	Bangladesh	-1.24	35.88
113	Philippines	-1.30	34.49
114	Kenya	-1.33	33.80
115	Egypt	-1.42	31.71
116	Mali	-1.55	28.70
117	Lebanon	-1.56	28.47
118	Ethiopia	-1.57	28.24
119	Nigeria	-1.85	21.76
120	Ukraine	-1.89	20.83
121	Turkey	-2.00	18.29
122	Burundi	-2.08	16.44
123	Congo, Dem. Rep.	-2.20	13.66
124	Pakistan	-2.47	7.41
125	Yemen	-2.79	0.00

SOURCE: World Bank, *Worldwide Governance Indicators*, 2017 Update (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
1	Singapore	2.18	100.00
2	New Zealand	2.04	96.65
3	Netherlands	1.98	95.22
4	Switzerland	1.91	93.54
5	Australia	1.90	93.30
6	Sweden	1.85	92.11
7	Finland	1.82	91.39
7	Germany	1.82	91.39
9	United Kingdom	1.76	89.95
10	Canada	1.74	89.47
10	Ireland	1.74	89.47
12	Luxembourg	1.72	89.00
13	Estonia	1.70	88.52
13	Norway	1.70	88.52
15	Denmark	1.58	85.65
16	United States of America	1.50	83.73
17	Austria	1.44	82.30
18	Japan	1.43	82.06
19	Chile	1.37	80.62
20	Belgium	1.34	79.90
21	Israel	1.31	79.19
22	Iceland	1.28	78.47
23	Malta	1.16	75.60
24	Lithuania	1.14	75.12
25	Korea, Rep.	1.11	74.40
26	Latvia	1.08	73.68
27	France	1.07	73.44
28	Cyprus	1.05	72.97
29	Mauritius	1.03	72.49
30	Georgia	1.01	72.01
30	Spain	1.01	72.01
32	Czech Republic	0.99	71.53
33	United Arab Emirates	0.97	71.05
34	Poland	0.95	70.57
35	Slovakia	0.89	69.14
36	Portugal	0.84	67.94
37	Italy	0.71	64.83
37	Malaysia	0.71	64.83
39	Qatar	0.70	64.59
40	Bulgaria	0.66	63.64
41	Slovenia	0.64	63.16
42	Bahrain	0.61	62.44
42	Oman	0.61	62.44
44	Hungary	0.60	62.20
45	Brunei Darussalam	0.59	61.96
45	Romania	0.59	61.96
47	Botswana	0.53	60.53
48	Peru	0.51	60.05
49	Uruguay	0.49	59.57
50	Costa Rica	0.41	57.66
51	Colombia	0.40	57.42
52	Croatia	0.36	56.46
52	Panama	0.36	56.46
54	Mexico	0.29	54.78
55	Armenia	0.25	53.83
56	Montenegro	0.22	53.11
57	South Africa	0.21	52.87
58	Turkey	0.20	52.63
59	Albania	0.19	52.39
60	Thailand	0.17	51.91
61	Greece	0.15	51.44
62	Rwanda	0.11	50.48
63	El Salvador	0.09	50.00
63	Trinidad and Tobago	0.09	50.00
65	Saudi Arabia	0.08	49.76
66	Serbia	0.06	49.28
67	Jordan	0.05	49.04
68	Philippines	0.00	47.85
69	Dominican Republic	-0.07	46.17
69	Kuwait	-0.07	46.17
71	Mongolia	-0.08	45.93
72	Kazakhstan	-0.10	45.45
72	Sri Lanka	-0.10	45.45
74	Indonesia	-0.12	44.98
74	Moldova, Rep.	-0.12	44.98
76	Namibia	-0.14	44.50
76	Senegal	-0.14	44.50
78	Bosnia and Herzegovina	-0.17	43.78
79	Guatemala	-0.20	43.06
80	Brazil	-0.21	42.82
80	Uganda	-0.21	42.82
82	Ghana	-0.23	42.34
82	Morocco	-0.23	42.34
84	China	-0.26	41.63
85	Azerbaijan	-0.28	41.15
86	Kenya	-0.30	40.67
86	Paraguay	-0.30	40.67
88	India	-0.31	40.43
89	Lebanon	-0.34	39.71
90	Kyrgyzstan	-0.35	39.47
91	Lesotho	-0.39	38.52
92	Russian Federation	-0.42	37.80
93	Ukraine	-0.43	37.56
94	Tanzania, United Rep.	-0.44	37.32
95	Viet Nam	-0.45	37.08
96	Argentina	-0.47	36.60
96	Cambodia	-0.47	36.60
96	Tunisia	-0.47	36.60
99	Zambia	-0.48	36.36
100	Gambia	-0.51	35.65
100	Honduras	-0.51	35.65
100	Nicaragua	-0.51	35.65
103	Mali	-0.59	33.73
104	Pakistan	-0.64	32.54
105	Bhutan	-0.67	31.82
106	Madagascar	-0.69	31.34
107	Mozambique	-0.70	31.10
108	Laos	-0.73	30.38
109	Nepal	-0.76	29.67
110	Cameroon	-0.79	28.95
111	Bangladesh	-0.80	28.71
112	Burundi	-0.83	27.99
113	Malawi	-0.84	27.75
114	Egypt	-0.92	25.84
114	Nigeria	-0.92	25.84
116	Liberia	-0.95	25.12
117	Ecuador	-1.02	23.44
118	Tajikistan	-1.09	21.77
119	Ethiopia	-1.10	21.53
120	Algeria	-1.17	19.86
121	Iran, Islamic Rep.	-1.23	18.42
122	Congo, Dem. Rep.	-1.32	16.27
123	Yemen	-1.48	12.44
124	Zimbabwe	-1.72	6.70
125	Venezuela, Bolivarian Rep.	-2.00	0.00

SOURCE: World Bank, *Worldwide Governance Indicators*, 2017 Update (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
1	New Zealand	89.00	100.00
2	Denmark	88.00	98.63
3	Finland	85.00	94.52
3	Norway	85.00	94.52
3	Switzerland	85.00	94.52
6	Singapore	84.00	93.15
6	Sweden	84.00	93.15
8	Canada	82.00	90.41
8	Luxembourg	82.00	90.41
8	Netherlands	82.00	90.41
8	United Kingdom	82.00	90.41
12	Germany	81.00	89.04
13	Australia	77.00	83.56
13	Iceland	77.00	83.56
15	Austria	75.00	80.82
15	Belgium	75.00	80.82
15	United States of America	75.00	80.82
18	Ireland	74.00	79.45
19	Japan	73.00	78.08
20	Estonia	71.00	75.34
20	United Arab Emirates	71.00	75.34
22	France	70.00	73.97
22	Uruguay	70.00	73.97
24	Bhutan	67.00	69.86
24	Chile	67.00	69.86
26	Portugal	63.00	64.38
26	Qatar	63.00	64.38
28	Brunei Darussalam	62.00	63.01
28	Israel	62.00	63.01
30	Botswana	61.00	61.64
30	Slovenia	61.00	61.64
32	Poland	60.00	60.27
33	Costa Rica	59.00	58.90
33	Lithuania	59.00	58.90
35	Latvia	58.00	57.53
36	Cyprus	57.00	56.16
36	Czech Republic	57.00	56.16
36	Spain	57.00	56.16
39	Georgia	56.00	54.79
39	Malta	56.00	54.79
41	Rwanda	55.00	53.42
42	Korea, Rep.	54.00	52.05
43	Namibia	51.00	47.95
44	Italy	50.00	46.58
44	Mauritius	50.00	46.58
44	Slovakia	50.00	46.58
47	Croatia	49.00	45.21
47	Saudi Arabia	49.00	45.21
49	Greece	48.00	43.84
49	Jordan	48.00	43.84
49	Romania	48.00	43.84
52	Malaysia	47.00	42.47
53	Montenegro	46.00	41.10
54	Hungary	45.00	39.73
54	Senegal	45.00	39.73
56	Oman	44.00	38.36
57	Bulgaria	43.00	36.99
57	South Africa	43.00	36.99
59	Lesotho	42.00	35.62
59	Tunisia	42.00	35.62
61	China	41.00	34.25
61	Serbia	41.00	34.25
61	Trinidad and Tobago	41.00	34.25
64	Ghana	40.00	32.88
64	India	40.00	32.88
64	Morocco	40.00	32.88
64	Turkey	40.00	32.88
68	Argentina	39.00	31.51
68	Kuwait	39.00	31.51
70	Albania	38.00	30.14
70	Bosnia and Herzegovina	38.00	30.14
70	Sri Lanka	38.00	30.14
73	Brazil	37.00	28.77
73	Colombia	37.00	28.77
73	Indonesia	37.00	28.77
73	Panama	37.00	28.77
73	Peru	37.00	28.77
73	Thailand	37.00	28.77
73	Zambia	37.00	28.77
80	Bahrain	36.00	27.40
80	Mongolia	36.00	27.40
80	Tanzania, United Rep.	36.00	27.40
83	Armenia	35.00	26.03
83	Ethiopia	35.00	26.03
83	Viet Nam	35.00	26.03
86	Philippines	34.00	24.66
87	Algeria	33.00	23.29
87	El Salvador	33.00	23.29
89	Ecuador	32.00	21.92
89	Egypt	32.00	21.92
89	Pakistan	32.00	21.92
92	Azerbaijan	31.00	20.55
92	Kazakhstan	31.00	20.55
92	Liberia	31.00	20.55
92	Malawi	31.00	20.55
92	Mali	31.00	20.55
92	Moldova, Rep.	31.00	20.55
92	Nepal	31.00	20.55
99	Gambia	30.00	19.18
99	Iran, Islamic Rep.	30.00	19.18
99	Ukraine	30.00	19.18
102	Dominican Republic	29.00	17.81
102	Honduras	29.00	17.81
102	Kyrgyzstan	29.00	17.81
102	Laos	29.00	17.81
102	Mexico	29.00	17.81
102	Paraguay	29.00	17.81
102	Russian Federation	29.00	17.81
109	Bangladesh	28.00	16.44
109	Guatemala	28.00	16.44
109	Kenya	28.00	16.44
109	Lebanon	28.00	16.44
113	Nigeria	27.00	15.07
114	Nicaragua	26.00	13.70
114	Uganda	26.00	13.70
116	Cameroon	25.00	12.33
116	Mozambique	25.00	12.33
118	Madagascar	24.00	10.96
119	Burundi	22.00	8.22
119	Zimbabwe	22.00	8.22
121	Cambodia	21.00	6.85
121	Congo, Dem. Rep.	21.00	6.85
121	Tajikistan	21.00	6.85
124	Venezuela, Bolivarian Rep.	18.00	2.74
125	Yemen	16.00	0.00

SOURCE: Transparency International, *The Corruption Perceptions Index 2017* (http://www.transparency.org/research/cpi)
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.

1.2.1 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
1	Japan	6.21	100.00
2	Malta	6.17	99.09
3	Korea, Rep.	6.04	95.01
4	United States of America	6.00	93.95
5	Netherlands	5.94	92.18
6	Australia	5.90	90.91
7	Turkey	5.88	90.35
8	Germany	5.88	90.29
9	Belgium	5.80	88.11
10	France	5.79	87.84
11	Estonia	5.78	87.46
12	Czech Republic	5.78	87.43
13	United Kingdom	5.73	86.04
14	Singapore	5.72	85.66
15	Lebanon	5.66	83.95
16	Austria	5.63	83.00
17	United Arab Emirates	5.58	81.41
18	Qatar	5.55	80.70
19	Colombia	5.55	80.67
20	Spain	5.55	80.53
21	Cyprus	5.53	79.99
22	Sweden	5.51	79.37
23	Jordan	5.50	79.26
24	Lithuania	5.50	79.11
25	Latvia	5.49	78.90
26	Switzerland	5.48	78.52
27	Gambia	5.47	78.43
28	Lesotho	5.47	78.40
29	Kenya	5.47	78.37
30	China	5.46	78.05
31	Canada	5.45	77.69
32	Malaysia	5.44	77.34
32	Slovakia	5.44	77.34
34	Guatemala	5.44	77.31
35	Slovenia	5.41	76.42
36	Indonesia	5.39	76.01
37	Denmark	5.39	75.95
38	Saudi Arabia	5.39	75.86
39	Dominican Republic	5.37	75.30
40	Thailand	5.37	75.21
41	South Africa	5.36	75.15
42	New Zealand	5.36	75.10
43	Mauritius	5.34	74.54
44	Panama	5.32	74.00
45	Costa Rica	5.32	73.95
46	Israel	5.32	73.86
47	Luxembourg	5.32	73.77
48	Ireland	5.30	73.38
49	Brazil	5.28	72.68
50	Philippines	5.28	72.65
50	Poland	5.28	72.65
52	Uganda	5.28	72.56
53	Norway	5.27	72.53
54	El Salvador	5.26	72.12
55	Portugal	5.26	72.00
56	Italy	5.23	71.23
57	Chile	5.23	71.11
58	Bahrain	5.21	70.58
59	Mexico	5.21	70.55
60	Morocco	5.20	70.46
61	Trinidad and Tobago	5.20	70.35
62	Armenia	5.15	68.72
63	Peru	5.14	68.60
64	Ecuador	5.11	67.81
65	Senegal	5.09	67.19
66	Nigeria	5.09	67.13
67	Greece	5.06	66.27
68	Russian Federation	5.02	65.06
69	Paraguay	4.99	64.09
70	Iceland	4.98	63.77
71	Botswana	4.97	63.62
72	Bangladesh	4.97	63.53
73	Ukraine	4.97	63.50
74	Tunisia	4.96	63.20
75	Ghana	4.96	63.15
76	Honduras	4.94	62.58
77	Zambia	4.91	61.88
78	Rwanda	4.88	60.90
79	Cameroon	4.87	60.46
80	Romania	4.86	60.19
81	Sri Lanka	4.84	59.60
82	Egypt	4.83	59.37
83	Kuwait	4.82	59.25
84	Madagascar	4.82	59.13
85	Bulgaria	4.81	58.96
86	Nepal	4.80	58.48
87	Cambodia	4.79	58.28
88	Georgia	4.77	57.78
89	Moldova, Rep.	4.77	57.51
90	Finland	4.74	56.71
91	India	4.73	56.51
92	Albania	4.73	56.45
92	Tajikistan	4.73	56.45
94	Namibia	4.72	56.09
95	Croatia	4.72	56.03
96	Zimbabwe	4.69	55.15
97	Brunei Darussalam	4.68	55.09
98	Congo, Dem. Rep.	4.68	55.00
99	Azerbaijan	4.68	54.94
100	Bhutan	4.67	54.82
101	Viet Nam	4.66	54.44
102	Mali	4.63	53.38
102	Tanzania, United Rep.	4.63	53.38
104	Uruguay	4.62	53.14
105	Nicaragua	4.60	52.64
105	Oman	4.60	52.64
107	Kazakhstan	4.54	50.93
108	Serbia	4.50	49.66
109	Mongolia	4.49	49.48
110	Bosnia and Herzegovina	4.49	49.45
111	Mozambique	4.47	48.75
112	Pakistan	4.44	48.04
113	Malawi	4.43	47.51
114	Montenegro	4.42	47.45
115	Argentina	4.33	44.67
116	Kyrgyzstan	4.33	44.53
117	Iran, Islamic Rep.	4.28	43.05
118	Hungary	4.25	42.20
119	Liberia	4.23	41.66
120	Laos	4.18	40.31
121	Yemen	4.10	37.95
122	Algeria	4.10	37.77
123	Burundi	3.91	32.22
124	Ethiopia	3.73	27.09
125	Venezuela, Bolivarian Rep.	2.82	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.

1.2.2 Ease of doing business

Ease of doing business index | 2018

Rank	Country	Value	Score
1	New Zealand	86.55	100.00
2	Singapore	84.57	96.44
3	Denmark	84.06	95.53
4	Korea, Rep.	83.92	95.28
5	United States of America	82.54	92.80
6	United Kingdom	82.22	92.22
7	Norway	82.16	92.12
8	Georgia	82.04	91.90
9	Sweden	81.27	90.52
10	Estonia	80.80	89.67
11	Finland	80.37	88.90
12	Australia	80.14	88.49
13	Lithuania	79.87	88.00
14	Ireland	79.51	87.36
15	Canada	79.29	86.96
16	Latvia	79.26	86.91
17	Germany	79.00	86.44
18	United Arab Emirates	78.73	85.96
19	Austria	78.54	85.61
20	Iceland	78.50	85.54
21	Malaysia	78.43	85.42
22	Mauritius	77.54	83.82
23	Thailand	77.44	83.64
24	Poland	77.30	83.39
25	Spain	77.02	82.88
26	Portugal	76.84	82.56
27	Czech Republic	76.27	81.54
28	France	76.13	81.29
29	Netherlands	76.03	81.11
30	Switzerland	75.92	80.91
31	Japan	75.68	80.48
32	Russian Federation	75.50	80.15
33	Kazakhstan	75.44	80.05
34	Slovenia	75.42	80.01
35	Slovakia	74.90	79.08
36	Rwanda	73.40	76.38
37	Montenegro	73.18	75.99
38	Serbia	73.13	75.90
39	Moldova, Rep.	73.00	75.66
40	Romania	72.87	75.43
41	Italy	72.70	75.13
42	Armenia	72.51	74.78
43	Hungary	72.39	74.57
44	Mexico	72.27	74.35
45	Bulgaria	71.91	73.71
46	Croatia	71.70	73.33
47	Belgium	71.69	73.31
48	Cyprus	71.63	73.20
49	Israel	71.42	72.83
50	Chile	71.22	72.47
51	Brunei Darussalam	70.60	71.35
52	Azerbaijan	70.19	70.62
53	Peru	69.45	69.29
54	Colombia	69.41	69.22
55	Turkey	69.14	68.73
56	Costa Rica	69.13	68.71
57	Mongolia	69.03	68.53
58	Luxembourg	69.01	68.50
59	Albania	68.70	67.94
60	Bahrain	68.13	66.92
61	Greece	68.02	66.72
62	Viet Nam	67.93	66.56
63	Morocco	67.91	66.52
64	Oman	67.20	65.25
65	Indonesia	66.47	63.94
66	El Salvador	66.42	63.85
67	Bhutan	66.27	63.58
68	Ukraine	65.75	62.64
69	Kyrgyzstan	65.70	62.55
70	China	65.29	61.82
71	Panama	65.27	61.78
72	Kenya	65.15	61.57
73	Botswana	64.94	61.19
74	South Africa	64.89	61.10
75	Qatar	64.86	61.05
76	Malta	64.72	60.79
77	Zambia	64.50	60.40
78	Bosnia and Herzegovina	64.20	59.86
79	Tunisia	63.58	58.75
80	Saudi Arabia	62.50	56.81
81	Uruguay	61.99	55.89
82	Kuwait	61.23	54.53
83	Guatemala	61.18	54.44
84	Dominican Republic	60.93	53.99
85	India	60.76	53.68
86	Trinidad and Tobago	60.68	53.54
87	Jordan	60.58	53.36
88	Lesotho	60.42	53.07
89	Nepal	59.95	52.23
90	Namibia	59.94	52.21
91	Paraguay	59.18	50.84
92	Malawi	58.94	50.41
93	Sri Lanka	58.86	50.27
94	Philippines	58.74	50.05
95	Honduras	58.46	49.55
96	Argentina	58.11	48.92
97	Ecuador	57.83	48.42
98	Ghana	57.24	47.36
99	Uganda	56.94	46.82
100	Tajikistan	56.86	46.68
101	Iran, Islamic Rep.	56.48	45.99
102	Brazil	56.45	45.94
103	Egypt	56.22	45.53
104	Nicaragua	55.39	44.04
105	Lebanon	54.67	42.74
106	Cambodia	54.47	42.39
107	Tanzania, United Rep.	54.04	41.61
108	Mozambique	54.00	41.54
109	Senegal	53.06	39.85
110	Laos	53.01	39.76
111	Mali	52.92	39.60
112	Nigeria	52.03	38.00
113	Gambia	51.92	37.81
114	Pakistan	51.65	37.32
115	Zimbabwe	48.47	31.61
116	Ethiopia	47.77	30.35
117	Madagascar	47.67	30.17
118	Cameroon	47.23	29.38
119	Burundi	46.92	28.83
120	Algeria	46.71	28.45
121	Liberia	43.55	22.77
122	Bangladesh	40.99	18.18
123	Congo, Dem. Rep.	37.65	12.18
124	Yemen	33.00	3.83
125	Venezuela, Bolivarian Rep.	30.87	0.00

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
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
25	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	4.24	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
60	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	Iran, Islamic Rep.	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	Serbia	3.37	25.97
94	Nepal	3.37	25.94
95	Botswana	3.35	25.24
96	Argentina	3.28	22.95
97	Uruguay	3.27	22.89
98	Peru	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	15.14
111	Romania	3.02	14.79
112	Tajikistan	3.01	14.63
113	Greece	3.00	14.10
114	El Salvador	2.96	12.86
114	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	Kyrgyzstan	2.80	7.78
122	Mongolia	2.78	7.14
123	Moldova, Rep.	2.64	2.73
123	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.

1.2.4 R&D expenditure

Gross expenditure on R&D (%) | 2016

Rank	Country	Value	Score
1	Israel	4.25	100.00
2	Korea, Rep.	4.24	99.70
3	Switzerland	3.37	79.30
4	Sweden	3.25	76.48
5	Japan	3.15	73.92
6	Austria	3.09	72.52
7	Germany	2.94	69.04
8	Denmark	2.87	67.42
9	Finland	2.75	64.53
10	United States of America	2.74	64.43
11	Belgium	2.49	58.33
12	France	2.25	52.71
13	Singapore	2.18	51.20
14	China	2.11	49.38
15	Iceland	2.10	49.27
16	Netherlands	2.03	47.62
17	Norway	2.03	47.62
18	Slovenia	2.00	46.91
19	Australia	1.93	45.16
20	United Kingdom	1.69	39.55
21	Czech Republic	1.68	39.26
22	Canada	1.61	37.66
23	Malaysia	1.30	30.35
24	Italy	1.29	30.00
25	Estonia	1.28	29.89
26	New Zealand	1.28	29.80
27	Brazil	1.28	29.75
28	Portugal	1.27	29.57
29	Luxembourg	1.24	29.00
30	Hungary	1.21	28.12
31	Spain	1.19	27.63
32	Ireland	1.18	27.43
33	Russian Federation	1.10	25.54
34	Greece	1.01	23.42
35	United Arab Emirates	0.99	22.94
36	Poland	0.97	22.44
37	Serbia	0.89	20.67
38	Turkey	0.88	20.45
39	Croatia	0.86	19.86
40	Lithuania	0.85	19.66
41	Saudi Arabia	0.82	18.89
42	South Africa	0.80	18.50
43	Slovakia	0.79	18.29
44	Kenya	0.79	18.20
45	Bulgaria	0.78	18.06
46	Senegal	0.75	17.39
47	Morocco	0.71	16.51
48	Egypt	0.71	16.38
49	Argentina	0.63	14.50
50	India	0.62	14.37
51	Thailand	0.62	14.26
52	Malta	0.61	14.10
53	Ethiopia	0.60	13.92
54	Tunisia	0.60	13.81
55	Costa Rica	0.57	13.13
56	Botswana	0.54	12.33
57	Tanzania, United Rep.	0.53	12.14
58	Qatar	0.51	11.68
59	Cyprus	0.50	11.55
60	Mexico	0.50	11.46
61	Ukraine	0.48	11.07
62	Romania	0.48	11.04
63	Latvia	0.44	10.10
64	Ecuador	0.44	10.10
65	Viet Nam	0.44	10.06
66	Kuwait	0.43	9.73
67	Ghana	0.38	8.54
68	Montenegro	0.37	8.47
69	Chile	0.37	8.31
70	Uruguay	0.36	8.25
71	Namibia	0.34	7.67
72	Mozambique	0.34	7.61
73	Jordan	0.33	7.48
74	Moldova, Rep.	0.33	7.46
75	Mali	0.31	7.07
76	Nepal	0.30	6.78
77	Georgia	0.30	6.75
78	Zambia	0.28	6.21
79	Colombia	0.27	6.04
80	Iran, Islamic Rep.	0.25	5.61
81	Oman	0.25	5.46
82	Pakistan	0.25	5.45
83	Venezuela, Bolivarian Rep.	0.25	5.45
84	Armenia	0.23	5.13
85	Bosnia and Herzegovina	0.22	4.74
86	Azerbaijan	0.21	4.52
87	Mongolia	0.18	3.98
88	Mauritius	0.18	3.84
89	Uganda	0.17	3.67
90	Albania	0.15	3.28
91	Kazakhstan	0.14	2.99
92	Philippines	0.14	2.90
93	Gambia	0.13	2.79
94	El Salvador	0.13	2.69
95	Paraguay	0.13	2.68
96	Burundi	0.12	2.51
97	Peru	0.12	2.48
98	Cambodia	0.12	2.44
99	Kyrgyzstan	0.12	2.38
100	Nicaragua	0.11	2.18
101	Tajikistan	0.11	2.17
102	Bahrain	0.10	2.03
103	Sri Lanka	0.10	2.00
104	Trinidad and Tobago	0.09	1.81
105	Indonesia	0.08	1.65
106	Panama	0.06	1.14
107	Lesotho	0.05	0.78
108	Guatemala	0.03	0.35
109	Congo, Dem. Rep.	0.02	0.04
110	Honduras	0.02	0.00
111	Madagascar	0.01	0.00
	Algeria	n/a	n/a
	Bangladesh	n/a	n/a
	Bhutan	n/a	n/a
	Brunei Darussalam	n/a	n/a
	Cameroon	n/a	n/a
	Dominican Republic	n/a	n/a
	Laos	n/a	n/a
	Lebanon	n/a	n/a
	Liberia	n/a	n/a
	Malawi	n/a	n/a
	Nigeria	n/a	n/a
	Rwanda	n/a	n/a
	Yemen	n/a	n/a
	Zimbabwe	n/a	n/a

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
1	Luxembourg	9.54	100.00
2	Iceland	9.38	97.96
3	United Kingdom	9.15	95.04
4	Malta	9.02	93.38
5	Germany	8.93	92.24
6	Korea, Rep.	8.85	91.22
6	Switzerland	8.85	91.22
8	Japan	8.80	90.59
9	Netherlands	8.65	88.68
10	France	8.64	88.55
11	Singapore	8.61	88.17
12	Sweden	8.55	87.40
13	Denmark	8.39	85.37
14	Austria	8.38	85.24
15	New Zealand	8.34	84.73
16	United States of America	8.27	83.84
17	Israel	8.17	82.57
18	Estonia	8.16	82.44
19	Belgium	8.15	82.32
20	Bahrain	8.14	82.19
20	Ireland	8.14	82.19
22	United Arab Emirates	8.11	81.81
23	Australia	8.00	80.41
23	Norway	8.00	80.41
25	Spain	7.98	80.15
26	Canada	7.93	79.52
27	Portugal	7.91	79.26
27	Slovenia	7.91	79.26
29	Qatar	7.90	79.13
30	Cyprus	7.86	78.63
31	Hungary	7.78	77.61
32	Greece	7.76	77.35
33	Croatia	7.60	75.32
34	Poland	7.58	75.06
35	Moldova, Rep.	7.56	74.81
36	Kazakhstan	7.55	74.68
37	Brunei Darussalam	7.47	73.66
38	Latvia	7.41	72.90
39	Finland	7.35	72.14
40	Italy	7.33	71.88
41	Oman	7.32	71.76
42	Uruguay	7.28	71.25
43	Russian Federation	7.23	70.61
44	Slovakia	7.22	70.48
45	Saudi Arabia	7.21	70.36
46	Serbia	7.20	70.23
47	Trinidad and Tobago	7.18	69.97
48	Czech Republic	7.14	69.47
49	Kuwait	7.12	69.21
50	Lithuania	7.11	69.08
51	Mauritius	7.04	68.19
52	Montenegro	7.03	68.07
53	Romania	6.98	67.43
54	Malaysia	6.93	66.79
55	Lebanon	6.92	66.67
56	Argentina	6.87	66.03
57	Bulgaria	6.83	65.52
58	Chile	6.79	65.01
59	Iran, Islamic Rep.	6.74	64.38
60	Azerbaijan	6.62	62.85
61	Ukraine	6.60	62.60
62	Armenia	6.52	61.58
63	Costa Rica	6.40	60.05
64	Turkey	6.30	58.78
65	Georgia	6.26	58.27
66	Brazil	6.25	58.14
67	Morocco	6.06	55.73
68	Jordan	6.03	55.34
69	Panama	5.95	54.33
70	Colombia	5.88	53.44
71	Bosnia and Herzegovina	5.84	52.93
72	China	5.58	49.62
73	South Africa	5.48	48.35
73	Thailand	5.48	48.35
75	Egypt	5.40	47.33
76	Mexico	5.28	45.80
77	Venezuela, Bolivarian Rep.	5.15	44.15
78	Algeria	5.14	44.02
79	Tunisia	5.11	43.64
80	Ecuador	4.93	41.35
81	Botswana	4.90	40.97
81	Peru	4.90	40.97
83	Philippines	4.87	40.59
84	Indonesia	4.85	40.33
85	Albania	4.80	39.69
86	El Salvador	4.75	39.06
86	Viet Nam	4.75	39.06
88	Mongolia	4.74	38.93
89	Sri Lanka	4.66	37.91
90	Kyrgyzstan	4.54	36.39
91	Guatemala	4.52	36.13
92	Paraguay	4.41	34.73
93	Namibia	4.39	34.48
94	Ghana	4.36	34.10
95	Dominican Republic	4.30	33.33
96	Nicaragua	4.19	31.93
97	Cambodia	4.16	31.55
98	Bhutan	4.09	30.66
99	Honduras	4.08	30.53
100	Gambia	3.77	26.59
101	Lesotho	3.72	25.95
102	Kenya	3.63	24.81
103	Nepal	3.62	24.68
104	India	3.60	24.43
105	Senegal	3.57	24.05
106	Laos	3.47	22.77
107	Zimbabwe	3.40	21.88
108	Pakistan	3.34	21.12
109	Mali	3.16	18.83
109	Nigeria	3.16	18.83
111	Bangladesh	3.05	17.43
112	Zambia	2.85	14.89
113	Cameroon	2.84	14.76
114	Rwanda	2.67	12.60
115	Mozambique	2.53	10.81
116	Tanzania, United Rep.	2.52	10.69
117	Uganda	2.46	9.92
118	Ethiopia	2.35	8.52
119	Madagascar	2.29	7.76
120	Malawi	2.18	6.36
121	Burundi	2.14	5.85
122	Congo, Dem. Rep.	1.68	0.00
	Liberia	n/a	n/a
	Tajikistan	n/a	n/a
	Yemen	n/a	n/a

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
1	Sweden	6.02	100.00
2	United States of America	6.01	99.65
3	Netherlands	5.90	96.00
4	Switzerland	5.89	95.58
5	Iceland	5.88	95.39
6	Finland	5.87	95.10
7	Norway	5.82	93.47
8	Israel	5.76	91.58
9	Denmark	5.75	91.07
10	United Arab Emirates	5.72	90.27
11	Luxembourg	5.70	89.70
12	Germany	5.65	88.03
13	United Kingdom	5.62	87.10
14	Singapore	5.59	86.24
15	Japan	5.52	83.78
16	New Zealand	5.47	82.14
17	Malaysia	5.44	81.34
18	Qatar	5.36	78.85
19	Austria	5.36	78.72
20	Estonia	5.34	77.95
21	Ireland	5.31	77.12
22	Lithuania	5.31	77.09
23	Korea, Rep.	5.31	76.99
24	Australia	5.29	76.48
25	Belgium	5.29	76.42
26	Canada	5.29	76.35
27	Portugal	5.22	74.34
28	France	5.15	71.87
29	Malta	5.14	71.62
30	Saudi Arabia	5.10	70.53
31	Czech Republic	5.08	69.89
32	Bahrain	5.08	69.79
33	Panama	5.06	69.22
34	Kenya	5.05	68.93
35	Chile	5.05	68.83
36	South Africa	5.01	67.49
37	Indonesia	4.98	66.46
38	Costa Rica	4.96	66.02
39	Guatemala	4.95	65.57
40	Thailand	4.89	63.81
41	Jordan	4.88	63.52
42	Azerbaijan	4.88	63.33
43	Slovenia	4.86	62.69
44	Turkey	4.80	60.90
45	Senegal	4.8	60.83
45	Slovakia	4.80	60.83
47	Rwanda	4.75	59.26
48	Mauritius	4.75	59.23
49	Oman	4.67	56.58
49	Philippines	4.67	56.58
51	Spain	4.64	55.78
52	Poland	4.61	54.72
53	Mexico	4.60	54.43
54	Gambia	4.57	53.54
55	China	4.56	53.15
56	Brazil	4.55	52.86
57	Italy	4.53	52.26
58	Morocco	4.52	51.90
59	Cyprus	4.52	51.78
60	Honduras	4.49	50.78
61	Bulgaria	4.46	50.05
62	Latvia	4.45	49.50
63	Uruguay	4.42	48.74
64	Namibia	4.41	48.19
65	Kuwait	4.40	48.03
66	Albania	4.39	47.62
67	Russian Federation	4.37	47.20
68	India	4.35	46.50
69	Greece	4.34	46.21
70	Trinidad and Tobago	4.34	46.14
71	Armenia	4.34	46.05
72	Brunei Darussalam	4.33	45.76
73	Sri Lanka	4.33	45.73
74	Nigeria	4.33	45.63
75	Kazakhstan	4.30	44.93
76	Dominican Republic	4.29	44.48
77	Colombia	4.28	44.03
77	Ukraine	4.28	44.03
79	Mongolia	4.27	44.00
80	Lebanon	4.27	43.94
81	Montenegro	4.27	43.90
82	Pakistan	4.26	43.58
83	Madagascar	4.25	43.30
84	Cambodia	4.25	43.07
85	Croatia	4.24	42.91
86	Bosnia and Herzegovina	4.23	42.72
87	Viet Nam	4.23	42.56
88	Ecuador	4.22	42.40
89	Romania	4.20	41.50
90	Bangladesh	4.19	41.18
91	Ghana	4.17	40.67
92	Botswana	4.16	40.45
93	Bhutan	4.15	39.87
94	Egypt	4.13	39.49
95	Argentina	4.13	39.36
96	Laos	4.09	38.11
97	Tanzania, United Rep.	4.06	37.06
98	Tajikistan	4.06	37.02
99	Peru	4.05	36.93
100	Moldova, Rep.	4.04	36.51
101	Uganda	4.04	36.45
102	Georgia	4.02	35.94
103	Hungary	3.97	34.30
104	Paraguay	3.96	33.89
105	Tunisia	3.96	33.82
106	Cameroon	3.95	33.73
107	Zambia	3.93	32.90
108	El Salvador	3.93	32.83
108	Mali	3.93	32.83
110	Nicaragua	3.91	32.38
111	Serbia	3.87	30.91
112	Iran, Islamic Rep.	3.82	29.41
113	Mozambique	3.81	29.18
114	Zimbabwe	3.78	28.10
115	Algeria	3.77	27.87
116	Venezuela, Bolivarian Rep.	3.67	24.51
117	Nepal	3.66	24.19
118	Congo, Dem. Rep.	3.43	17.12
119	Kyrgyzstan	3.37	15.14
120	Malawi	3.36	14.78
121	Liberia	3.30	12.74
122	Ethiopia	3.29	12.42
123	Lesotho	3.19	9.31
124	Yemen	2.93	0.93
125	Burundi	2.90	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.

1.3.1 Ease of hiring

Hiring indicators | 2018

Rank	Country	Value	Score
1	Azerbaijan	0.00	100.00
1	Bahrain	0.00	100.00
1	Bangladesh	0.00	100.00
1	Bhutan	0.00	100.00
1	Botswana	0.00	100.00
1	Brunei Darussalam	0.00	100.00
1	Burundi	0.00	100.00
1	Denmark	0.00	100.00
1	Egypt	0.00	100.00
1	Gambia	0.00	100.00
1	Ghana	0.00	100.00
1	Kazakhstan	0.00	100.00
1	Kuwait	0.00	100.00
1	Lithuania	0.00	100.00
1	Malaysia	0.00	100.00
1	Namibia	0.00	100.00
1	Nigeria	0.00	100.00
1	Qatar	0.00	100.00
1	Rwanda	0.00	100.00
1	Singapore	0.00	100.00
1	Sri Lanka	0.00	100.00
1	Switzerland	0.00	100.00
1	Trinidad and Tobago	0.00	100.00
1	Uganda	0.00	100.00
1	United Arab Emirates	0.00	100.00
26	United States of America	5.50	94.50
27	Australia	11.00	89.00
27	Austria	11.00	89.00
27	Belgium	11.00	89.00
27	Canada	11.00	89.00
27	China	11.00	89.00
27	Colombia	11.00	89.00
27	Czech Republic	11.00	89.00
27	Germany	11.00	89.00
27	Hungary	11.00	89.00
27	Ireland	11.00	89.00
27	Israel	11.00	89.00
27	Japan	11.00	89.00
27	Mongolia	11.00	89.00
27	New Zealand	11.00	89.00
27	Oman	11.00	89.00
27	United Kingdom	11.00	89.00
27	Uruguay	11.00	89.00
27	Yemen	11.00	89.00
45	Saudi Arabia	16.67	83.33
46	Iran, Islamic Rep.	22.33	77.67
46	Jordan	22.33	77.67
46	Philippines	22.33	77.67
46	Viet Nam	22.33	77.67
50	Bosnia and Herzegovina	27.67	72.33
50	Bulgaria	27.67	72.33
50	Cameroon	27.67	72.33
50	Italy	27.67	72.33
50	Laos	27.67	72.33
50	Malta	27.67	72.33
50	Norway	27.67	72.33
57	India	27.83	72.17
58	Cambodia	33.33	66.67
58	Chile	33.33	66.67
58	Estonia	33.33	66.67
58	Ethiopia	33.33	66.67
58	Georgia	33.33	66.67
58	Kenya	33.33	66.67
58	Kyrgyzstan	33.33	66.67
58	Latvia	33.33	66.67
58	Lesotho	33.33	66.67
58	Liberia	33.33	66.67
58	Mauritius	33.33	66.67
58	Mexico	33.33	66.67
58	Netherlands	33.33	66.67
58	Nicaragua	33.33	66.67
58	Sweden	33.33	66.67
58	Zimbabwe	33.33	66.67
74	Russian Federation	38.83	61.17
75	Tunisia	39.00	61.00
76	Albania	44.33	55.67
76	Algeria	44.33	55.67
76	Armenia	44.33	55.67
76	Croatia	44.33	55.67
76	Cyprus	44.33	55.67
76	Dominican Republic	44.33	55.67
76	Finland	44.33	55.67
76	Greece	44.33	55.67
76	Iceland	44.33	55.67
76	Korea, Rep.	44.33	55.67
76	Lebanon	44.33	55.67
76	Moldova, Rep.	44.33	55.67
76	Montenegro	44.33	55.67
76	Peru	44.33	55.67
76	Poland	44.33	55.67
76	Romania	44.33	55.67
76	Slovakia	44.33	55.67
76	South Africa	44.33	55.67
76	Tajikistan	44.33	55.67
76	Tanzania, United Rep.	44.33	55.67
76	Thailand	44.33	55.67
76	Turkey	44.33	55.67
76	Ukraine	44.33	55.67
99	Argentina	55.67	44.33
99	Ecuador	55.67	44.33
99	El Salvador	55.67	44.33
99	Malawi	55.67	44.33
99	Mali	55.67	44.33
99	Paraguay	55.67	44.33
105	Portugal	61.00	39.00
105	Spain	61.00	39.00
107	Guatemala	66.67	33.33
107	Mozambique	66.67	33.33
107	Nepal	66.67	33.33
107	Zambia	66.67	33.33
111	Indonesia	72.33	27.67
112	Brazil	77.67	22.33
112	Costa Rica	77.67	22.33
112	France	77.67	22.33
112	Luxembourg	77.67	22.33
112	Panama	77.67	22.33
112	Serbia	77.67	22.33
112	Slovenia	77.67	22.33
119	Congo, Dem. Rep.	83.33	16.67
120	Pakistan	89.00	11.00
121	Honduras	100.00	0.00
121	Madagascar	100.00	0.00
121	Morocco	100.00	0.00
121	Senegal	100.00	0.00
121	Venezuela, Bolivarian Rep.	100.00	0.00

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
1	Argentina	0.00	100.00
1	Belgium	0.00	100.00
1	Brazil	0.00	100.00
1	Brunei Darussalam	0.00	100.00
1	Bulgaria	0.00	100.00
1	Canada	0.00	100.00
1	Colombia	0.00	100.00
1	Costa Rica	0.00	100.00
1	Czech Republic	0.00	100.00
1	Denmark	0.00	100.00
1	Dominican Republic	0.00	100.00
1	El Salvador	0.00	100.00
1	Georgia	0.00	100.00
1	Guatemala	0.00	100.00
1	Hungary	0.00	100.00
1	Iceland	0.00	100.00
1	Israel	0.00	100.00
1	Japan	0.00	100.00
1	Kuwait	0.00	100.00
1	Kyrgyzstan	0.00	100.00
1	Lesotho	0.00	100.00
1	Malawi	0.00	100.00
1	Mongolia	0.00	100.00
1	Nicaragua	0.00	100.00
1	Qatar	0.00	100.00
1	Saudi Arabia	0.00	100.00
1	Switzerland	0.00	100.00
1	Thailand	0.00	100.00
1	Uganda	0.00	100.00
1	United Arab Emirates	0.00	100.00
1	United Kingdom	0.00	100.00
1	United States of America	0.00	100.00
1	Uruguay	0.00	100.00
34	Albania	12.50	87.50
34	Armenia	12.50	87.50
34	Australia	12.50	87.50
34	Ireland	12.50	87.50
34	Malaysia	12.50	87.50
34	Montenegro	12.50	87.50
34	New Zealand	12.50	87.50
34	Singapore	12.50	87.50
34	Slovenia	12.50	87.50
34	Trinidad and Tobago	12.50	87.50
34	Turkey	12.50	87.50
45	Bhutan	25	75.00
45	Chile	25.00	75.00
45	Ecuador	25.00	75.00
45	Estonia	25.00	75.00
45	Gambia	25.00	75.00
45	Kazakhstan	25.00	75.00
45	Laos	25.00	75.00
45	Latvia	25.00	75.00
45	Lithuania	25.00	75.00
45	Malta	25.00	75.00
45	Mozambique	25.00	75.00
45	Namibia	25.00	75.00
45	Nigeria	25.00	75.00
45	Pakistan	25.00	75.00
45	Poland	25.00	75.00
45	Romania	25.00	75.00
45	Serbia	25.00	75.00
45	Spain	25.00	75.00
45	Zambia	25.00	75.00
64	Azerbaijan	37.50	62.50
64	Bahrain	37.50	62.50
64	Bosnia and Herzegovina	37.50	62.50
64	Burundi	37.50	62.50
64	Cambodia	37.50	62.50
64	Ethiopia	37.50	62.50
64	Greece	37.50	62.50
64	Kenya	37.50	62.50
64	Korea, Rep.	37.50	62.50
64	Luxembourg	37.50	62.50
64	Mauritius	37.50	62.50
64	Norway	37.50	62.50
64	Philippines	37.50	62.50
64	Portugal	37.50	62.50
64	Rwanda	37.50	62.50
64	Slovakia	37.50	62.50
64	South Africa	37.50	62.50
64	Ukraine	37.50	62.50
64	Viet Nam	37.50	62.50
64	Yemen	37.50	62.50
64	Zimbabwe	37.50	62.50
85	Algeria	50.00	50.00
85	Austria	50.00	50.00
85	Bangladesh	50.00	50.00
85	Botswana	50.00	50.00
85	Croatia	50.00	50.00
85	Cyprus	50.00	50.00
85	Finland	50.00	50.00
85	France	50.00	50.00
85	Germany	50.00	50.00
85	India	50.00	50.00
85	Lebanon	50.00	50.00
85	Liberia	50.00	50.00
85	Madagascar	50.00	50.00
85	Mali	50.00	50.00
85	Moldova, Rep.	50.00	50.00
85	Russian Federation	50.00	50.00
85	Senegal	50.00	50.00
85	Sweden	50.00	50.00
85	Tajikistan	50.00	50.00
104	China	62.50	37.50
104	Ghana	62.50	37.50
104	Iran, Islamic Rep.	62.50	37.50
104	Italy	62.50	37.50
104	Sri Lanka	62.50	37.50
109	Egypt	75.00	25.00
109	Honduras	75.00	25.00
109	Indonesia	75.00	25.00
109	Jordan	75.00	25.00
109	Panama	75.00	25.00
109	Paraguay	75.00	25.00
109	Peru	75.00	25.00
109	Tanzania, United Rep.	75.00	25.00
117	Cameroon	87.50	12.50
117	Congo, Dem. Rep.	87.50	12.50
117	Mexico	87.50	12.50
117	Nepal	87.50	12.50
117	Netherlands	87.50	12.50
122	Morocco	100.00	0.00
122	Oman	100.00	0.00
122	Tunisia	100.00	0.00
122	Venezuela, Bolivarian Rep.	100.00	0.00

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.

1.3.3 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
1	Switzerland	5.67	100.00
2	Singapore	5.61	98.51
3	Austria	5.40	93.15
4	Luxembourg	5.35	91.81
5	Germany	5.24	89.06
6	Norway	5.18	87.57
7	Iceland	5.18	87.54
8	Denmark	5.06	84.66
9	United States of America	5.06	84.48
10	Netherlands	5.01	83.32
11	Malaysia	5.01	83.17
12	Qatar	4.89	80.19
13	Finland	4.83	78.77
14	Estonia	4.79	77.79
15	United Arab Emirates	4.78	77.38
16	New Zealand	4.75	76.70
17	Canada	4.73	76.30
18	Malta	4.73	76.14
19	Ireland	4.71	75.74
20	Belgium	4.60	72.98
21	Sweden	4.59	72.55
22	Australia	4.54	71.32
23	China	4.49	70.26
24	Czech Republic	4.44	68.84
25	Saudi Arabia	4.41	68.23
26	Bahrain	4.38	67.27
27	Japan	4.33	66.19
28	India	4.24	63.76
29	United Kingdom	4.23	63.68
30	Israel	4.22	63.41
31	Tajikistan	4.20	62.77
32	Azerbaijan	4.19	62.65
33	Indonesia	4.16	61.81
34	Slovenia	4.15	61.59
35	Bhutan	4.15	61.51
36	Korea, Rep.	4.03	58.55
37	France	4.02	58.30
38	Mauritius	3.91	55.57
39	Portugal	3.91	55.45
40	Cyprus	3.90	55.19
41	Kazakhstan	3.89	54.86
42	Oman	3.88	54.61
43	Lithuania	3.87	54.44
44	Rwanda	3.81	52.97
45	Latvia	3.78	52.29
46	Russian Federation	3.78	52.16
47	Uruguay	3.73	50.97
48	Slovakia	3.72	50.80
49	Brunei Darussalam	3.72	50.64
50	Montenegro	3.72	50.59
51	Thailand	3.72	50.57
52	Ukraine	3.69	49.91
53	Pakistan	3.66	49.08
54	Lesotho	3.57	47.01
55	Mali	3.57	46.98
56	Romania	3.47	44.43
57	Spain	3.46	44.00
58	Panama	3.42	43.21
59	Laos	3.41	42.84
60	Viet Nam	3.40	42.61
61	Ethiopia	3.39	42.23
62	Gambia	3.38	42.18
63	Bulgaria	3.37	41.88
64	Kuwait	3.36	41.62
65	Jordan	3.35	41.37
66	Sri Lanka	3.30	39.98
67	Turkey	3.28	39.63
68	Iran, Islamic Rep.	3.28	39.45
69	Poland	3.25	38.74
70	Costa Rica	3.23	38.31
71	Hungary	3.23	38.29
72	Ghana	3.21	37.91
73	Kenya	3.17	36.72
74	Trinidad and Tobago	3.12	35.41
75	Chile	3.10	35.00
76	Botswana	3.06	34.07
77	Armenia	3.05	33.76
78	Philippines	3.03	33.18
79	Serbia	3.02	32.93
80	Colombia	3.02	32.88
81	Cambodia	3.01	32.80
82	Tanzania, United Rep.	3.01	32.70
83	Croatia	2.95	31.34
84	Tunisia	2.95	31.29
85	Argentina	2.95	31.13
86	Algeria	2.93	30.63
87	Italy	2.88	29.54
88	Mongolia	2.84	28.46
89	Moldova, Rep.	2.83	28.20
90	Kyrgyzstan	2.82	27.95
91	Liberia	2.82	27.85
92	Mexico	2.79	27.14
93	Greece	2.79	27.07
94	Senegal	2.77	26.79
95	Zambia	2.77	26.56
96	Georgia	2.75	26.26
97	Nepal	2.75	26.16
98	Egypt	2.74	25.98
99	Namibia	2.73	25.65
100	Brazil	2.72	25.45
101	Cameroon	2.71	25.22
102	Albania	2.69	24.77
103	Bangladesh	2.68	24.29
104	South Africa	2.66	23.78
105	Bosnia and Herzegovina	2.64	23.35
106	Paraguay	2.60	22.31
107	Guatemala	2.57	21.71
108	Morocco	2.46	18.88
109	Honduras	2.46	18.75
110	Dominican Republic	2.42	17.92
111	Uganda	2.40	17.41
112	Ecuador	2.39	17.06
113	Lebanon	2.39	17.01
114	Burundi	2.38	16.93
115	Peru	2.31	15.09
116	Nigeria	2.30	14.86
117	Malawi	2.30	14.68
118	Congo, Dem. Rep.	2.26	13.75
119	Mozambique	2.25	13.52
120	El Salvador	2.19	12.03
121	Madagascar	2.10	9.65
122	Venezuela, Bolivarian Rep.	2.09	9.43
123	Yemen	1.95	6.07
124	Zimbabwe	1.76	1.09
125	Nicaragua	1.71	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.

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
1	Switzerland	6.18	100.00
2	Singapore	6.18	99.94
3	Norway	6.09	97.19
4	Denmark	5.97	93.09
5	Netherlands	5.93	91.83
6	New Zealand	5.83	88.57
7	Japan	5.73	85.47
8	Sweden	5.68	83.76
9	United Arab Emirates	5.62	81.95
10	Luxembourg	5.59	80.82
11	Iceland	5.58	80.50
12	Austria	5.56	79.85
13	United States of America	5.44	76.04
14	Canada	5.42	75.56
15	Qatar	5.38	74.17
16	Rwanda	5.33	72.62
17	United Kingdom	5.30	71.62
18	Malaysia	5.27	70.71
19	Germany	5.26	70.36
20	Finland	5.22	69.00
21	Bahrain	5.20	68.26
22	Malta	5.19	67.94
23	Estonia	5.16	67.06
24	Israel	5.16	66.97
25	Ireland	5.12	65.64
26	Costa Rica	5.10	65.13
27	Bhutan	5.05	63.48
28	Guatemala	5.02	62.42
29	Albania	4.94	59.93
30	Azerbaijan	4.90	58.77
31	Philippines	4.84	56.83
32	Czech Republic	4.84	56.64
33	Nicaragua	4.84	56.60
34	Thailand	4.81	55.76
35	Mauritius	4.80	55.28
36	Jordan	4.77	54.31
37	Brunei Darussalam	4.75	53.86
38	Armenia	4.72	52.86
39	Indonesia	4.72	52.83
40	Tajikistan	4.71	52.41
41	Belgium	4.69	51.89
42	Saudi Arabia	4.65	50.66
43	Portugal	4.62	49.60
44	Latvia	4.62	49.53
45	Honduras	4.6	48.82
46	Cyprus	4.58	48.27
47	China	4.58	48.24
48	Laos	4.54	47.05
49	Oman	4.54	46.85
50	Kuwait	4.49	45.46
51	Panama	4.49	45.43
52	India	4.45	44.17
53	Uganda	4.44	43.62
54	Lithuania	4.43	43.56
55	Ghana	4.43	43.33
56	Gambia	4.42	43.07
57	Namibia	4.42	43.01
58	Slovenia	4.41	42.85
59	Chile	4.40	42.46
60	Botswana	4.39	42.30
61	Mexico	4.39	42.01
62	Colombia	4.38	41.78
63	Cambodia	4.36	41.23
64	Kazakhstan	4.36	41.04
65	Kenya	4.34	40.43
66	Senegal	4.31	39.65
67	Australia	4.31	39.43
67	Sri Lanka	4.31	39.43
69	Slovakia	4.29	38.97
70	Bangladesh	4.28	38.55
71	Hungary	4.28	38.52
72	Spain	4.27	38.42
73	Poland	4.27	38.30
74	Ecuador	4.25	37.65
75	Moldova, Rep.	4.24	37.29
75	Mongolia	4.24	37.29
77	Lebanon	4.22	36.65
78	Dominican Republic	4.22	36.58
79	Viet Nam	4.20	36.00
80	Georgia	4.15	34.52
81	Paraguay	4.15	34.32
82	Peru	4.14	34.16
83	Russian Federation	4.13	33.77
84	Ukraine	4.11	33.23
85	Madagascar	4.11	33.16
86	Nigeria	4.08	32.13
87	Burundi	4.06	31.55
88	Mali	4.05	31.09
89	Greece	4.04	30.90
90	Zambia	4.04	30.77
91	Romania	4.01	29.90
92	Montenegro	4.00	29.64
93	Malawi	3.99	29.32
94	Italy	3.99	29.09
95	Cameroon	3.98	29.00
96	Egypt	3.98	28.93
97	Serbia	3.96	28.41
98	Brazil	3.95	28.09
99	Algeria	3.93	27.45
100	Kyrgyzstan	3.92	27.12
101	France	3.92	26.96
102	Zimbabwe	3.90	26.32
103	Bulgaria	3.88	25.77
104	Tanzania, United Rep.	3.84	24.28
105	Argentina	3.80	22.96
106	Morocco	3.79	22.67
107	Yemen	3.77	21.99
108	Bosnia and Herzegovina	3.76	21.96
109	Turkey	3.76	21.70
110	Ethiopia	3.75	21.50
111	Liberia	3.74	21.31
112	Iran, Islamic Rep.	3.72	20.41
113	Mozambique	3.69	19.47
114	Tunisia	3.66	18.70
115	El Salvador	3.65	18.24
116	Pakistan	3.61	16.86
117	Venezuela, Bolivarian Rep.	3.59	16.31
118	Congo, Dem. Rep.	3.58	16.11
119	Lesotho	3.53	14.40
120	Korea, Rep.	3.51	13.76
121	Uruguay	3.47	12.56
122	Nepal	3.47	12.50
123	Croatia	3.38	9.65
124	Trinidad and Tobago	3.34	8.23
125	South Africa	3.08	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.

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
1	Netherlands	6.33	100.00
2	New Zealand	6.23	97.40
3	Finland	6.21	97.01
4	Singapore	6.16	95.60
5	Switzerland	6.11	94.44
6	Australia	6.08	93.66
7	Sweden	6.07	93.33
8	Norway	6.03	92.25
9	United Kingdom	6.01	91.84
10	Ireland	6.00	91.48
11	Denmark	5.96	90.47
12	Canada	5.95	90.37
13	United States of America	5.89	88.69
14	Belgium	5.81	86.74
15	Luxembourg	5.72	84.37
16	Japan	5.66	82.85
17	Germany	5.60	81.28
18	United Arab Emirates	5.59	81.10
19	Israel	5.53	79.55
20	Iceland	5.51	79.06
21	Malaysia	5.48	78.29
22	France	5.44	77.21
23	Qatar	5.44	77.08
24	Austria	5.43	77.00
25	Czech Republic	5.41	76.31
26	Estonia	5.28	73.17
27	Rwanda	5.11	68.79
28	Ghana	4.97	64.98
29	Gambia	4.92	63.84
30	Chile	4.82	61.32
31	Malta	4.82	61.14
32	Indonesia	4.79	60.55
33	Bahrain	4.79	60.47
34	Costa Rica	4.79	60.39
35	Spain	4.64	56.66
36	Korea, Rep.	4.64	56.53
37	Lithuania	4.64	56.45
38	Zimbabwe	4.63	56.22
39	Trinidad and Tobago	4.62	56.12
40	South Africa	4.61	55.68
41	Philippines	4.59	55.24
42	Botswana	4.59	55.22
43	Azerbaijan	4.58	55.01
44	Nigeria	4.57	54.80
45	India	4.57	54.73
46	Brazil	4.57	54.70
47	Mauritius	4.56	54.39
48	Thailand	4.55	54.21
49	Saudi Arabia	4.55	54.18
50	China	4.54	54.06
51	Namibia	4.52	53.36
52	Argentina	4.51	53.28
52	Slovakia	4.51	53.28
54	Sri Lanka	4.48	52.46
55	Bhutan	4.46	52.02
56	Kenya	4.46	51.89
57	Oman	4.46	51.84
58	Albania	4.41	50.58
59	Peru	4.40	50.48
60	Panama	4.36	49.37
61	Uruguay	4.36	49.32
62	Portugal	4.32	48.44
63	Guatemala	4.31	48.13
64	Venezuela, Bolivarian Rep.	4.30	47.75
65	Slovenia	4.25	46.54
66	Georgia	4.23	46.02
67	Armenia	4.22	45.69
68	Poland	4.17	44.35
69	Malawi	4.16	44.14
70	Latvia	4.15	43.96
71	Mexico	4.14	43.63
72	Uganda	4.06	41.59
73	Tajikistan	4.06	41.57
74	Zambia	4.04	41.08
75	Morocco	4.03	40.77
76	Turkey	4.02	40.61
77	Greece	4.01	40.41
78	Laos	4.00	40.18
79	Liberia	4.00	40.05
80	Jordan	3.98	39.61
81	Brunei Darussalam	3.97	39.25
82	Colombia	3.96	39.02
83	Bangladesh	3.92	37.93
84	Tunisia	3.91	37.78
85	Tanzania, United Rep.	3.91	37.68
86	Cambodia	3.90	37.57
87	Senegal	3.90	37.50
88	Egypt	3.87	36.72
89	Russian Federation	3.82	35.51
90	Italy	3.81	35.13
91	Honduras	3.79	34.72
92	Lebanon	3.78	34.41
93	Cyprus	3.77	34.05
94	Hungary	3.76	33.79
95	Montenegro	3.74	33.35
96	Mongolia	3.74	33.30
97	Croatia	3.72	32.78
98	Romania	3.70	32.24
99	Dominican Republic	3.68	31.91
100	Kazakhstan	3.66	31.37
101	Pakistan	3.63	30.52
102	Nicaragua	3.62	30.23
103	Viet Nam	3.61	29.95
104	Madagascar	3.60	29.82
105	Moldova, Rep.	3.59	29.51
106	Ethiopia	3.57	29.13
107	Bulgaria	3.57	28.92
108	Ecuador	3.56	28.77
109	Congo, Dem. Rep.	3.50	27.25
110	Burundi	3.46	26.22
111	El Salvador	3.43	25.44
112	Paraguay	3.43	25.42
113	Mali	3.43	25.29
114	Iran, Islamic Rep.	3.41	24.95
115	Kuwait	3.39	24.39
115	Nepal	3.39	24.39
117	Ukraine	3.38	24.03
118	Cameroon	3.37	23.87
119	Lesotho	3.36	23.67
120	Mozambique	3.29	21.71
121	Serbia	3.26	20.94
122	Kyrgyzstan	3.24	20.58
123	Bosnia and Herzegovina	2.98	13.80
124	Algeria	2.90	11.85
125	Yemen	2.44	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.

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
1	Switzerland	5.58	100.00
2	Singapore	5.51	97.81
3	United States of America	5.50	97.52
4	United Arab Emirates	5.32	91.80
5	Malaysia	5.30	91.13
6	Germany	5.23	88.94
7	Qatar	5.21	88.47
8	Canada	5.08	84.18
9	New Zealand	5.03	82.75
10	Denmark	4.93	79.57
11	Ireland	4.92	79.22
12	Iceland	4.92	79.09
13	Korea, Rep.	4.81	75.69
14	Azerbaijan	4.81	75.56
15	Estonia	4.80	75.21
16	United Kingdom	4.79	74.93
17	Israel	4.77	74.45
18	Netherlands	4.76	74.01
19	Czech Republic	4.72	72.83
19	Indonesia	4.72	72.83
21	Finland	4.72	72.77
22	Bahrain	4.71	72.61
23	Luxembourg	4.69	71.94
24	China	4.63	69.97
25	Tajikistan	4.59	68.57
26	Norway	4.57	68.10
27	Gambia	4.54	67.14
28	Austria	4.53	66.86
29	Australia	4.53	66.83
30	Belgium	4.52	66.51
31	India	4.49	65.40
32	Sweden	4.48	65.20
33	Saudi Arabia	4.47	64.98
34	Albania	4.47	64.79
35	Rwanda	4.46	64.44
36	Chile	4.45	64.22
37	Japan	4.44	63.81
38	Costa Rica	4.42	63.27
39	Malta	4.41	63.04
40	Philippines	4.39	62.38
41	Slovakia	4.38	62.09
42	Laos	4.37	61.71
43	Lithuania	4.37	61.61
44	Thailand	4.34	60.66
45	Bhutan	4.3	59.52
46	Latvia	4.28	58.82
47	Kazakhstan	4.24	57.71
48	Kenya	4.24	57.55
49	Jordan	4.22	56.91
50	Kyrgyzstan	4.19	55.83
51	Ukraine	4.17	55.42
52	Mauritius	4.17	55.26
53	Russian Federation	4.15	54.78
54	Poland	4.15	54.72
55	Lebanon	4.13	54.08
56	Sri Lanka	4.12	53.64
57	Guatemala	4.07	52.27
58	Armenia	4.07	52.18
59	France	4.05	51.48
60	Cambodia	4.04	51.32
61	Portugal	4.01	50.33
62	Viet Nam	4.01	50.17
63	Brunei Darussalam	3.95	48.20
64	Serbia	3.94	47.89
65	Moldova, Rep.	3.86	45.60
65	Trinidad and Tobago	3.86	45.60
67	Ghana	3.86	45.54
68	Cyprus	3.83	44.39
69	Oman	3.82	44.23
70	Nigeria	3.82	44.17
71	Ethiopia	3.80	43.53
72	Montenegro	3.79	43.34
73	Slovenia	3.79	43.18
74	Honduras	3.78	43.09
75	Bangladesh	3.76	42.36
76	Namibia	3.76	42.26
77	Pakistan	3.75	42.10
78	Panama	3.74	41.66
79	Mexico	3.73	41.44
80	Hungary	3.72	40.96
81	Ecuador	3.71	40.61
82	Liberia	3.69	40.07
83	Bulgaria	3.69	40.01
84	Brazil	3.67	39.40
85	Peru	3.66	38.99
86	Turkey	3.65	38.93
87	Zambia	3.62	37.91
88	Mali	3.62	37.78
89	Colombia	3.58	36.73
90	Georgia	3.56	35.84
91	Morocco	3.55	35.72
92	Spain	3.55	35.49
93	Greece	3.53	35.11
94	South Africa	3.53	35.08
95	Iran, Islamic Rep.	3.53	34.86
96	Croatia	3.52	34.64
97	Mongolia	3.52	34.60
98	Nicaragua	3.50	34.06
99	Uganda	3.49	33.68
100	Tanzania, United Rep.	3.47	33.21
101	Botswana	3.46	32.70
102	Egypt	3.44	32.28
103	Malawi	3.43	31.68
104	Senegal	3.42	31.55
105	Nepal	3.39	30.66
105	Romania	3.39	30.66
107	Kuwait	3.35	29.23
108	Argentina	3.34	28.95
109	Lesotho	3.34	28.85
110	Algeria	3.33	28.54
111	Madagascar	3.31	27.96
112	Paraguay	3.29	27.52
113	Uruguay	3.27	26.79
114	Cameroon	3.26	26.34
115	Zimbabwe	3.25	26.09
116	Dominican Republic	3.25	26.06
117	Yemen	3.18	23.99
118	Italy	3.18	23.80
119	Tunisia	3.07	20.27
120	Bosnia and Herzegovina	3.05	19.70
121	Burundi	3.04	19.38
122	El Salvador	3.00	18.27
123	Mozambique	2.80	11.76
124	Congo, Dem. Rep.	2.45	0.67
125	Venezuela, Bolivarian Rep.	2.43	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.

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
1	Ireland	6.09	100.00
2	Singapore	5.90	95.18
3	Luxembourg	5.78	92.25
4	United Arab Emirates	5.61	87.82
5	United States of America	5.57	86.90
6	Israel	5.54	86.16
7	United Kingdom	5.52	85.65
8	Panama	5.47	84.35
9	Netherlands	5.46	84.00
10	Germany	5.42	83.13
11	Switzerland	5.39	82.36
12	Malaysia	5.36	81.60
13	Sweden	5.27	79.26
14	Portugal	5.25	78.75
15	Slovakia	5.25	78.70
16	Malta	5.24	78.57
17	Belgium	5.23	78.29
18	Costa Rica	5.23	78.11
19	Canada	5.20	77.40
20	Chile	5.15	76.22
21	New Zealand	5.15	76.17
22	Norway	5.15	76.04
23	Qatar	5.13	75.69
24	Japan	5.09	74.69
25	Mexico	5.04	73.42
26	Australia	5.03	73.04
27	France	5.00	72.40
28	Azerbaijan	4.99	71.99
29	Czech Republic	4.99	71.97
30	Spain	4.92	70.41
31	Lithuania	4.92	70.39
32	Denmark	4.92	70.34
33	Albania	4.92	70.23
34	Bahrain	4.87	69.11
35	Poland	4.86	68.65
36	Uruguay	4.83	68.09
37	Saudi Arabia	4.80	67.28
38	Thailand	4.80	67.23
39	Kenya	4.80	67.15
40	Finland	4.76	66.16
41	Estonia	4.74	65.83
42	Indonesia	4.70	64.73
43	Rwanda	4.69	64.50
44	Austria	4.68	64.22
45	Bulgaria	4.68	64.14
46	Hungary	4.67	63.86
47	China	4.66	63.69
48	Dominican Republic	4.66	63.66
49	Morocco	4.61	62.51
50	Brazil	4.59	62.00
51	Cambodia	4.59	61.98
52	Korea, Rep.	4.54	60.73
53	Jordan	4.51	59.94
54	Gambia	4.49	59.35
55	India	4.48	59.20
56	South Africa	4.47	58.84
57	Peru	4.46	58.54
57	Turkey	4.46	58.54
59	Philippines	4.45	58.44
60	Guatemala	4.45	58.28
61	Honduras	4.44	58.05
62	Mauritius	4.43	57.85
63	Trinidad and Tobago	4.40	56.93
64	Pakistan	4.39	56.70
65	Nicaragua	4.37	56.35
66	Montenegro	4.35	55.84
67	Iceland	4.34	55.53
68	Iran, Islamic Rep.	4.33	55.25
69	Egypt	4.30	54.56
70	Namibia	4.27	53.82
71	Colombia	4.26	53.59
72	Ghana	4.26	53.39
73	Cyprus	4.25	53.31
74	Latvia	4.22	52.42
75	Senegal	4.19	51.73
76	Nigeria	4.18	51.40
77	Slovenia	4.17	51.20
78	Uganda	4.17	51.10
79	Tunisia	4.15	50.79
80	Romania	4.15	50.61
81	Laos	4.13	50.25
81	Oman	4.13	50.25
83	Viet Nam	4.13	50.23
84	Armenia	4.08	48.93
85	Botswana	4.05	48.04
86	Tanzania, United Rep.	4.03	47.66
87	Kazakhstan	4.02	47.48
88	Georgia	4.02	47.35
89	Italy	4.02	47.27
90	Zambia	3.98	46.30
91	Tajikistan	3.97	46.20
92	Moldova, Rep.	3.96	45.92
93	Sri Lanka	3.96	45.77
94	Madagascar	3.95	45.51
95	Serbia	3.91	44.67
96	Paraguay	3.91	44.65
97	Brunei Darussalam	3.91	44.60
98	Mongolia	3.88	43.78
99	Mozambique	3.82	42.18
100	Bosnia and Herzegovina	3.76	40.83
101	Mali	3.74	40.27
102	Bangladesh	3.73	40.06
102	Russian Federation	3.73	40.06
104	Croatia	3.71	39.37
105	Greece	3.70	39.22
106	Bhutan	3.70	39.14
107	Algeria	3.66	38.25
108	Ethiopia	3.63	37.41
109	El Salvador	3.60	36.65
110	Cameroon	3.57	35.78
111	Ukraine	3.55	35.32
112	Argentina	3.54	35.24
113	Ecuador	3.52	34.51
114	Kuwait	3.47	33.31
115	Lebanon	3.43	32.44
116	Liberia	3.38	31.07
117	Congo, Dem. Rep.	3.36	30.58
118	Burundi	3.30	28.92
119	Nepal	3.27	28.16
120	Malawi	3.15	25.25
121	Kyrgyzstan	3.08	23.47
122	Lesotho	2.94	19.93
123	Zimbabwe	2.91	19.06
124	Venezuela, Bolivarian Rep.	2.35	4.89
125	Yemen	2.16	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.

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
1	United Kingdom	6.14	100.00
2	Singapore	6.09	98.63
3	Luxembourg	6.06	98.00
4	Czech Republic	6.01	96.58
5	Slovakia	5.91	94.22
6	Belgium	5.82	91.94
7	Ireland	5.80	91.44
8	Estonia	5.72	89.38
9	Switzerland	5.65	87.46
10	Panama	5.64	87.33
11	United Arab Emirates	5.61	86.57
12	Denmark	5.59	85.91
13	Chile	5.52	84.22
14	Australia	5.51	84.04
15	Sweden	5.47	82.87
16	Canada	5.46	82.75
17	Bahrain	5.46	82.65
18	France	5.45	82.52
19	Japan	5.45	82.44
20	New Zealand	5.43	81.99
21	United States of America	5.42	81.61
22	Gambia	5.36	80.21
23	Zambia	5.33	79.50
24	Mexico	5.33	79.40
25	Netherlands	5.29	78.49
26	Costa Rica	5.22	76.74
27	Finland	5.22	76.69
28	Spain	5.17	75.45
29	Ghana	5.16	75.02
30	Israel	5.16	74.99
31	Botswana	5.14	74.51
32	Germany	5.13	74.36
33	Malta	5.09	73.25
34	Malaysia	5.08	73.09
35	Uganda	5.07	72.89
36	Namibia	5.06	72.64
37	Uruguay	5.01	71.24
38	Austria	5.00	71.02
39	Latvia	4.98	70.43
40	Norway	4.95	69.67
41	Morocco	4.94	69.57
42	Dominican Republic	4.94	69.47
43	Poland	4.94	69.45
44	South Africa	4.89	68.25
45	Azerbaijan	4.83	66.84
46	Portugal	4.83	66.73
47	Liberia	4.80	66.10
48	Kenya	4.80	65.97
49	Thailand	4.77	65.19
50	Peru	4.77	65.11
51	Mauritius	4.76	64.88
52	Nigeria	4.72	63.87
53	Congo, Dem. Rep.	4.69	63.24
54	Malawi	4.68	62.91
55	Indonesia	4.62	61.46
56	Cyprus	4.56	59.87
57	Senegal	4.53	59.26
58	India	4.53	59.23
59	Guatemala	4.51	58.68
60	Cameroon	4.51	58.63
61	Hungary	4.51	58.60
62	Cambodia	4.50	58.50
63	Georgia	4.50	58.40
63	Rwanda	4.50	58.40
65	China	4.49	58.02
66	Mozambique	4.46	57.33
67	Paraguay	4.43	56.65
68	Trinidad and Tobago	4.42	56.27
69	Bulgaria	4.41	56.22
70	Serbia	4.41	56.19
71	Lithuania	4.40	55.92
72	Madagascar	4.39	55.49
73	Honduras	4.38	55.33
74	Argentina	4.37	55.08
75	Jordan	4.37	55.05
76	Nicaragua	4.36	54.90
77	Korea, Rep.	4.35	54.55
78	Colombia	4.35	54.52
79	Qatar	4.31	53.69
80	El Salvador	4.31	53.66
81	Montenegro	4.31	53.61
82	Croatia	4.31	53.51
83	Philippines	4.29	53.13
84	Laos	4.27	52.65
85	Albania	4.23	51.46
86	Romania	4.22	51.36
87	Greece	4.21	51.03
88	Brazil	4.21	51.00
89	Viet Nam	4.17	49.91
90	Sri Lanka	4.16	49.89
91	Oman	4.15	49.63
92	Turkey	4.08	47.63
93	Tunisia	4.06	47.28
94	Tanzania, United Rep.	4.00	45.63
95	Brunei Darussalam	3.95	44.57
96	Slovenia	3.92	43.68
97	Armenia	3.91	43.55
98	Bosnia and Herzegovina	3.91	43.32
99	Bangladesh	3.87	42.51
100	Zimbabwe	3.87	42.41
101	Saudi Arabia	3.86	42.16
102	Kazakhstan	3.85	41.85
103	Italy	3.83	41.40
104	Pakistan	3.81	40.97
105	Mongolia	3.79	40.44
106	Lebanon	3.79	40.31
107	Egypt	3.72	38.74
108	Ethiopia	3.66	37.22
109	Lesotho	3.61	35.77
110	Kyrgyzstan	3.60	35.62
111	Moldova, Rep.	3.57	34.71
112	Tajikistan	3.52	33.60
113	Mali	3.51	33.27
114	Iceland	3.51	33.22
115	Russian Federation	3.40	30.53
116	Algeria	3.34	28.93
117	Burundi	3.31	28.15
118	Ukraine	3.29	27.69
119	Ecuador	3.28	27.49
120	Venezuela, Bolivarian Rep.	3.15	24.27
121	Bhutan	3.03	21.21
122	Iran, Islamic Rep.	2.99	20.04
123	Nepal	2.88	17.38
124	Kuwait	2.68	12.24
125	Yemen	2.20	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.

2.1.3 Migrant stock

Adult migrant stock (%) | 2017

Rank	Country	Value	Score
1	Bahrain	48.42	100.00
1	Kuwait	75.51	100.00
1	Qatar	65.22	100.00
1	United Arab Emirates	88.43	100.00
5	Singapore	45.95	94.91
6	Luxembourg	45.26	93.47
7	Oman	44.72	92.35
8	Saudi Arabia	36.99	76.37
9	Jordan	33.33	68.79
10	Lebanon	31.88	65.80
11	Switzerland	29.57	61.02
12	Australia	28.77	59.37
13	Brunei Darussalam	25.34	52.26
14	Israel	23.58	48.63
15	New Zealand	22.68	46.77
16	Canada	21.46	44.25
17	Kazakhstan	19.97	41.16
18	Austria	19.01	39.17
19	Sweden	17.63	36.33
20	Ireland	16.94	34.89
21	Cyprus	16.02	32.99
22	United States of America	15.34	31.59
23	Norway	15.06	31.00
24	Germany	14.81	30.50
25	Estonia	14.73	30.33
26	Croatia	13.38	27.53
27	United Kingdom	13.36	27.49
28	Latvia	13.18	27.11
29	Spain	12.83	26.39
30	Iceland	12.49	25.69
31	France	12.16	25.01
32	Netherlands	12.07	24.82
33	Slovenia	11.77	24.20
34	Denmark	11.46	23.55
35	Montenegro	11.29	23.20
36	Ukraine	11.23	23.07
37	Belgium	11.10	22.81
38	Greece	10.94	22.47
39	Malta	10.57	21.72
40	Italy	9.95	20.44
41	Gambia	9.76	20.05
42	Serbia	9.12	18.72
43	Malaysia	8.55	17.54
44	Portugal	8.52	17.48
45	Costa Rica	8.44	17.32
46	Russian Federation	8.09	16.59
47	Botswana	7.26	14.88
48	South Africa	7.12	14.58
49	Armenia	6.51	13.32
50	Bhutan	6.48	13.25
51	Finland	6.22	12.72
52	Turkey	6.05	12.36
53	Thailand	5.20	10.61
54	Hungary	5.18	10.57
55	Argentina	4.89	9.97
56	Panama	4.65	9.48
57	Venezuela, Bolivarian Rep.	4.46	9.08
58	Lithuania	4.31	8.78
59	Czech Republic	4.08	8.29
60	Uganda	3.95	8.02
61	Dominican Republic	3.95	8.02
62	Namibia	3.75	7.61
63	Trinidad and Tobago	3.67	7.44
64	Rwanda	3.63	7.36
65	Moldova, Rep.	3.46	7.00
66	Slovakia	3.39	6.86
67	Iran, Islamic Rep.	3.33	6.73
68	Kyrgyzstan	3.31	6.71
69	Tajikistan	3.06	6.19
70	Burundi	2.76	5.56
71	Chile	2.71	5.45
72	Azerbaijan	2.64	5.31
73	Zimbabwe	2.44	4.91
74	Ecuador	2.40	4.82
75	Paraguay	2.36	4.73
76	Uruguay	2.30	4.62
77	Mauritius	2.27	4.55
78	Korea, Rep.	2.26	4.53
79	Cameroon	2.25	4.50
80	Bulgaria	2.17	4.34
81	Kenya	2.17	4.34
82	Liberia	2.08	4.16
83	Mali	2.07	4.13
84	Georgia	2.00	3.99
85	Romania	1.88	3.75
86	Japan	1.82	3.62
87	Albania	1.79	3.56
88	Pakistan	1.72	3.42
89	Nepal	1.72	3.40
90	Poland	1.68	3.33
91	Senegal	1.68	3.32
92	Ghana	1.45	2.85
93	Yemen	1.36	2.67
94	Malawi	1.27	2.49
95	Ethiopia	1.17	2.27
96	Congo, Dem. Rep.	1.08	2.09
97	Bosnia and Herzegovina	1.06	2.04
98	Mexico	0.95	1.81
99	Zambia	0.92	1.75
100	Bangladesh	0.91	1.74
101	Tanzania, United Rep.	0.86	1.63
102	Mozambique	0.83	1.58
103	El Salvador	0.66	1.23
104	Laos	0.66	1.22
105	Nicaragua	0.66	1.22
106	Nigeria	0.65	1.19
107	Algeria	0.60	1.10
108	Mongolia	0.59	1.08
109	Tunisia	0.50	0.89
110	Egypt	0.49	0.87
111	Guatemala	0.48	0.85
112	Cambodia	0.48	0.84
113	Honduras	0.42	0.72
114	India	0.39	0.65
115	Brazil	0.35	0.58
116	Lesotho	0.30	0.48
117	Peru	0.29	0.46
118	Colombia	0.29	0.45
119	Morocco	0.27	0.41
120	Philippines	0.21	0.28
121	Sri Lanka	0.19	0.25
122	Madagascar	0.13	0.13
123	Indonesia	0.13	0.12
124	Viet Nam	0.08	0.02
125	China	0.07	0.00

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)

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
1	Luxembourg	45.87	100.00
1	New Zealand	19.84	100.00
1	Qatar	37.88	100.00
1	United Arab Emirates	48.55	100.00
5	Singapore	19.17	96.60
6	United Kingdom	18.48	93.15
7	Switzerland	17.59	88.64
8	Cyprus	17.53	88.35
9	Australia	17.49	88.13
10	Austria	16.35	82.38
11	Jordan	14.90	75.07
12	Bahrain	12.61	63.50
13	Belgium	11.18	56.31
14	Denmark	10.81	54.43
15	Netherlands	10.74	54.09
16	Uganda	10.73	54.03
17	Czech Republic	10.55	53.09
18	Namibia	10.17	51.19
19	France	9.88	49.71
20	Malaysia	9.29	46.74
21	Lebanon	8.87	44.64
22	Hungary	8.86	44.56
23	Malta	8.43	42.42
24	Ireland	8.19	41.19
25	Senegal	8.12	40.85
26	Finland	7.81	39.26
27	Germany	7.68	38.64
28	Iceland	7.40	37.19
29	Bosnia and Herzegovina	7.30	36.71
30	Sweden	6.22	31.27
31	Latvia	6.12	30.75
32	Kyrgyzstan	6.00	30.12
33	Slovakia	5.61	28.20
34	Estonia	5.18	26.00
35	Portugal	5.00	25.12
36	Italy	4.95	24.85
37	Georgia	4.93	24.75
38	Saudi Arabia	4.92	24.70
39	Romania	4.82	24.21
40	United States of America	4.65	23.31
41	Bulgaria	4.57	22.95
42	Mauritius	4.55	22.81
43	Yemen	4.26	21.36
44	Serbia	4.26	21.34
45	Greece	4.19	20.99
46	South Africa	4.12	20.66
47	Lithuania	4.11	20.61
48	Armenia	4.10	20.56
49	Russian Federation	3.94	19.76
50	Norway	3.92	19.65
51	Ghana	3.79	18.99
52	Moldova, Rep.	3.63	18.18
53	Japan	3.43	17.18
54	Poland	3.42	17.12
55	Brunei Darussalam	3.22	16.12
56	Burundi	3.22	16.10
57	Ukraine	3.20	16.03
58	Oman	2.95	14.73
59	Israel	2.78	13.88
60	Slovenia	2.75	13.74
61	Spain	2.71	13.55
62	Botswana	2.70	13.47
63	Kazakhstan	2.21	11.02
64	Tunisia	2.12	10.55
65	Azerbaijan	2.01	10.00
66	Dominican Republic	1.96	9.75
67	Madagascar	1.85	9.17
68	Egypt	1.83	9.12
69	Albania	1.78	8.85
70	Morocco	1.75	8.68
71	Korea, Rep.	1.67	8.28
72	Turkey	1.19	5.87
73	Congo, Dem. Rep.	1.18	5.80
74	Malawi	1.14	5.60
75	Cameroon	1.13	5.57
76	Mongolia	0.89	4.36
77	Mali	0.86	4.18
78	Tajikistan	0.84	4.12
79	Ecuador	0.78	3.78
80	Honduras	0.76	3.72
81	Rwanda	0.73	3.52
82	Thailand	0.50	2.41
83	Algeria	0.50	2.38
84	Zimbabwe	0.47	2.22
85	Sri Lanka	0.44	2.06
86	Iran, Islamic Rep.	0.43	2.03
87	Croatia	0.43	2.02
88	El Salvador	0.39	1.84
89	Mozambique	0.38	1.78
90	Chile	0.37	1.72
91	Laos	0.37	1.72
92	Lesotho	0.32	1.49
93	China	0.31	1.44
94	Mexico	0.30	1.36
95	Viet Nam	0.24	1.09
96	Brazil	0.24	1.07
97	Colombia	0.16	0.69
98	India	0.14	0.56
99	Indonesia	0.12	0.45
100	Philippines	0.10	0.37
101	Bangladesh	0.10	0.37
102	Venezuela, Bolivarian Rep.	0.09	0.32
103	Nepal	0.03	0.00
	Argentina	n/a	n/a
	Bhutan	n/a	n/a
	Cambodia	n/a	n/a
	Canada	n/a	n/a
	Costa Rica	n/a	n/a
	Ethiopia	n/a	n/a
	Gambia	n/a	n/a
	Guatemala	n/a	n/a
	Kenya	n/a	n/a
	Kuwait	n/a	n/a
	Liberia	n/a	n/a
	Montenegro	n/a	n/a
	Nicaragua	n/a	n/a
	Nigeria	n/a	n/a
	Pakistan	n/a	n/a
	Panama	n/a	n/a
	Paraguay	n/a	n/a
	Peru	n/a	n/a
	Tanzania, United Rep.	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Uruguay	n/a	n/a
	Zambia	n/a	n/a

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
1	Switzerland	6.24	100.00
2	United Arab Emirates	6.13	97.91
3	United Kingdom	5.97	94.59
4	Singapore	5.93	93.80
5	United States of America	5.83	91.93
6	Luxembourg	5.55	86.40
7	Qatar	5.49	85.05
8	New Zealand	5.25	80.31
9	Canada	5.17	78.86
10	Netherlands	5.10	77.29
11	Ireland	5.04	76.28
12	Germany	5.04	76.22
13	Rwanda	4.99	75.18
14	Malaysia	4.90	73.41
15	Panama	4.77	70.81
16	Australia	4.75	70.33
17	Azerbaijan	4.69	69.28
18	India	4.67	68.84
19	Norway	4.64	68.32
20	Malta	4.58	66.95
21	Bahrain	4.57	66.89
22	China	4.48	65.14
22	Saudi Arabia	4.48	65.14
24	Indonesia	4.46	64.57
25	Sweden	4.33	62.16
26	Chile	4.27	60.97
27	Oman	4.26	60.67
28	Belgium	4.17	58.80
29	Gambia	4.16	58.76
30	Denmark	4.05	56.41
31	Iceland	4.04	56.21
32	Mauritius	4.02	55.88
33	Kenya	4.00	55.46
34	Ghana	3.98	55.08
35	Israel	3.97	54.88
36	Botswana	3.94	54.32
37	Costa Rica	3.93	54.13
38	Austria	3.91	53.71
39	Brunei Darussalam	3.90	53.53
40	Korea, Rep.	3.86	52.77
41	Thailand	3.81	51.66
42	Tajikistan	3.78	51.10
43	Cambodia	3.77	50.92
44	Namibia	3.67	49.02
45	Liberia	3.67	49.00
46	Bhutan	3.65	48.62
47	Finland	3.65	48.54
48	Senegal	3.59	47.29
49	Peru	3.58	47.23
50	Nigeria	3.57	46.95
51	Ethiopia	3.52	46.05
52	Mexico	3.52	45.99
53	Trinidad and Tobago	3.52	45.89
54	Laos	3.51	45.69
55	Kazakhstan	3.48	45.16
56	Zambia	3.47	45.04
57	Estonia	3.46	44.82
58	Viet Nam	3.44	44.34
59	France	3.43	44.20
60	Tanzania, United Rep.	3.42	44.02
61	Portugal	3.39	43.33
62	Pakistan	3.34	42.43
63	South Africa	3.33	42.25
64	Mozambique	3.33	42.16
65	Morocco	3.30	41.54
66	Philippines	3.29	41.30
67	Cyprus	3.28	41.10
68	Japan	3.26	40.82
69	Czech Republic	3.25	40.68
70	Dominican Republic	3.21	39.83
71	Spain	3.21	39.79
72	Russian Federation	3.18	39.23
73	Jordan	3.17	39.01
74	Colombia	3.17	38.91
75	Paraguay	3.14	38.38
76	Madagascar	3.14	38.34
77	Guatemala	3.12	37.98
78	Malawi	3.12	37.92
79	Lesotho	3.10	37.68
80	Mali	3.10	37.52
81	Uganda	3.09	37.38
82	Kuwait	3.03	36.25
83	Sri Lanka	3.02	35.95
84	Ecuador	2.99	35.41
85	Honduras	2.93	34.20
86	Argentina	2.90	33.70
87	Nicaragua	2.89	33.37
88	Armenia	2.86	32.85
89	Congo, Dem. Rep.	2.79	31.36
90	Brazil	2.78	31.26
91	Uruguay	2.73	30.28
92	Georgia	2.73	30.26
93	Bangladesh	2.67	29.05
94	Turkey	2.63	28.36
95	Italy	2.62	28.16
96	Lebanon	2.62	28.10
97	Ukraine	2.62	28.06
98	Montenegro	2.59	27.52
99	Iran, Islamic Rep.	2.59	27.38
100	Mongolia	2.55	26.72
101	Cameroon	2.55	26.59
102	Hungary	2.54	26.51
103	Poland	2.52	26.03
104	Slovenia	2.50	25.67
105	Nepal	2.44	24.58
106	Egypt	2.40	23.78
107	Lithuania	2.38	23.27
108	Bulgaria	2.32	22.13
109	Tunisia	2.31	21.95
110	Kyrgyzstan	2.31	21.87
111	Albania	2.29	21.46
112	Latvia	2.28	21.24
113	Burundi	2.26	21.00
114	El Salvador	2.24	20.58
115	Zimbabwe	2.19	19.53
116	Algeria	2.05	16.74
117	Yemen	2.03	16.35
118	Slovakia	2.01	15.93
119	Romania	1.98	15.35
120	Serbia	1.95	14.81
121	Greece	1.90	13.74
122	Moldova, Rep.	1.84	12.49
123	Croatia	1.80	11.67
124	Bosnia and Herzegovina	1.59	7.66
125	Venezuela, Bolivarian Rep.	1.21	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.

2.2.1 Tolerance of minorities

Discrimination and violence against minorities | 2017

Rank	Country	Value	Score
1	Iceland	1.30	100.00
2	Ireland	1.60	96.47
3	Sweden	1.70	95.29
4	Finland	2.00	91.76
5	Portugal	2.70	83.53
5	Uruguay	2.70	83.53
7	Singapore	2.80	82.35
8	Korea, Rep.	3.10	78.82
8	Luxembourg	3.10	78.82
8	Oman	3.10	78.82
11	Gambia	3.40	75.29
12	Canada	3.60	72.94
12	United Arab Emirates	3.60	72.94
14	Chile	3.80	70.59
14	Mauritius	3.80	70.59
14	New Zealand	3.80	70.59
14	Norway	3.80	70.59
14	Switzerland	3.80	70.59
19	Japan	3.90	69.41
19	Malta	3.90	69.41
21	Austria	4.00	68.24
21	Mongolia	4.00	68.24
23	Australia	4.10	67.06
23	Lesotho	4.10	67.06
25	Slovenia	4.20	65.88
26	Madagascar	4.30	64.71
27	Belgium	4.40	63.53
27	Costa Rica	4.40	63.53
27	Netherlands	4.40	63.53
27	Trinidad and Tobago	4.40	63.53
31	Denmark	4.60	61.18
31	Ghana	4.60	61.18
31	Lithuania	4.60	61.18
31	Qatar	4.60	61.18
35	Albania	4.70	60.00
35	Argentina	4.70	60.00
37	Germany	4.80	58.82
38	Poland	4.90	57.65
39	Czech Republic	5.00	56.47
39	Hungary	5.00	56.47
39	Italy	5.00	56.47
42	Botswana	5.10	55.29
42	Greece	5.10	55.29
42	Malawi	5.10	55.29
42	United States of America	5.1	55.29
46	Kuwait	5.20	54.12
47	Bulgaria	5.30	52.94
47	Panama	5.30	52.94
49	Tanzania, United Rep.	5.40	51.76
49	Zambia	5.40	51.76
51	Armenia	5.60	49.41
51	Mozambique	5.60	49.41
53	Brazil	5.70	48.24
54	Brunei Darussalam	5.90	45.88
54	Spain	5.90	45.88
54	United Kingdom	5.90	45.88
57	Croatia	6.00	44.71
57	Dominican Republic	6.00	44.71
57	Liberia	6.00	44.71
57	Namibia	6.00	44.71
57	Paraguay	6.00	44.71
62	Honduras	6.10	43.53
63	El Salvador	6.20	42.35
63	Viet Nam	6.20	42.35
65	South Africa	6.30	41.18
66	Cyprus	6.50	38.82
66	Slovakia	6.50	38.82
68	Laos	6.60	37.65
68	Senegal	6.60	37.65
70	Azerbaijan	6.70	36.47
70	Malaysia	6.70	36.47
70	Mexico	6.70	36.47
70	Nicaragua	6.70	36.47
74	Estonia	6.80	35.29
75	Ukraine	6.90	34.12
76	Bosnia and Herzegovina	7.00	32.94
76	Colombia	7.00	32.94
76	France	7.00	32.94
76	Moldova, Rep.	7.00	32.94
76	Romania	7.00	32.94
81	Cambodia	7.10	31.76
82	Indonesia	7.30	29.41
82	Kazakhstan	7.30	29.41
84	Morocco	7.40	28.24
84	Venezuela, Bolivarian Rep.	7.40	28.24
86	Ecuador	7.50	27.06
86	Saudi Arabia	7.50	27.06
86	Zimbabwe	7.50	27.06
89	Bhutan	7.60	25.88
89	Montenegro	7.60	25.88
89	Peru	7.60	25.88
89	Tajikistan	7.60	25.88
93	Jordan	7.70	24.71
93	Latvia	7.70	24.71
95	Serbia	7.80	23.53
96	Algeria	7.90	22.35
96	Bahrain	7.90	22.35
96	Mali	7.90	22.35
96	Tunisia	7.90	22.35
100	Burundi	8.10	20.00
100	China	8.10	20.00
100	Georgia	8.10	20.00
100	Philippines	8.10	20.00
104	Guatemala	8.20	18.82
105	Cameroon	8.50	15.29
105	India	8.50	15.29
107	Ethiopia	8.60	14.12
107	Kyrgyzstan	8.60	14.12
109	Lebanon	8.70	12.94
110	Iran, Islamic Rep.	8.80	11.76
111	Bangladesh	8.90	10.59
112	Egypt	9.00	9.41
112	Russian Federation	9.00	9.41
112	Thailand	9.00	9.41
112	Uganda	9.00	9.41
116	Kenya	9.10	8.24
116	Rwanda	9.10	8.24
118	Sri Lanka	9.20	7.06
119	Nigeria	9.40	4.71
120	Nepal	9.50	3.53
120	Turkey	9.50	3.53
120	Yemen	9.50	3.53
123	Congo, Dem. Rep.	9.70	1.18
123	Pakistan	9.70	1.18
125	Israel	9.80	0.00

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
1	United Arab Emirates	0.91	100.00
2	New Zealand	0.89	97.30
3	Canada	0.88	95.95
4	Iceland	0.87	94.59
5	Mali	0.86	93.24
5	Norway	0.86	93.24
7	Ireland	0.85	91.89
8	Australia	0.84	90.54
9	Luxembourg	0.83	89.19
10	Senegal	0.82	87.84
11	Spain	0.81	86.49
12	Denmark	0.80	85.14
12	Nepal	0.80	85.14
12	Qatar	0.80	85.14
12	Saudi Arabia	0.80	85.14
12	Sweden	0.80	85.14
12	United Kingdom	0.80	85.14
18	Netherlands	0.79	83.78
18	United States of America	0.79	83.78
20	Germany	0.78	82.43
21	Bahrain	0.75	78.38
22	Argentina	0.74	77.03
22	Austria	0.74	77.03
22	Paraguay	0.74	77.03
22	Portugal	0.74	77.03
26	Finland	0.73	75.68
26	Mauritius	0.73	75.68
26	Uruguay	0.73	75.68
29	Bangladesh	0.72	74.32
30	Belgium	0.71	72.97
30	Congo, Dem. Rep.	0.71	72.97
30	Ecuador	0.71	72.97
30	Nigeria	0.71	72.97
34	Brazil	0.70	71.62
34	Chile	0.70	71.62
34	France	0.70	71.62
34	Kuwait	0.70	71.62
34	Switzerland	0.70	71.62
39	Rwanda	0.69	70.27
40	Trinidad and Tobago	0.68	68.92
41	Costa Rica	0.67	67.57
41	Malta	0.67	67.57
41	Mozambique	0.67	67.57
44	Botswana	0.66	66.22
44	Colombia	0.66	66.22
44	Dominican Republic	0.66	66.22
44	Lesotho	0.66	66.22
44	Singapore	0.66	66.22
49	Ghana	0.65	64.86
49	Kenya	0.65	64.86
51	South Africa	0.64	63.51
52	Cameroon	0.63	62.16
52	Italy	0.63	62.16
52	Laos	0.63	62.16
52	Venezuela, Bolivarian Rep.	0.63	62.16
56	Cyprus	0.61	59.46
56	Peru	0.61	59.46
56	Tunisia	0.61	59.46
59	Bhutan	0.60	58.11
59	Philippines	0.60	58.11
61	Namibia	0.59	56.76
62	Burundi	0.58	55.41
62	Nicaragua	0.58	55.41
64	Morocco	0.57	54.05
64	Panama	0.57	54.05
64	Zimbabwe	0.57	54.05
67	Korea, Rep.	0.56	52.70
67	Liberia	0.56	52.70
67	Madagascar	0.56	52.70
67	Montenegro	0.56	52.70
67	Serbia	0.56	52.70
67	Turkey	0.56	52.70
67	Zambia	0.56	52.70
74	Honduras	0.55	51.35
74	Sri Lanka	0.55	51.35
76	Kyrgyzstan	0.54	50.00
77	Albania	0.53	48.65
77	Armenia	0.53	48.65
77	Azerbaijan	0.53	48.65
80	Ethiopia	0.51	45.95
80	Jordan	0.51	45.95
80	Mexico	0.51	45.95
80	Tanzania, United Rep.	0.51	45.95
84	Algeria	0.49	43.24
84	Iran, Islamic Rep.	0.49	43.24
84	Japan	0.49	43.24
87	Bosnia and Herzegovina	0.48	41.89
87	Lebanon	0.48	41.89
89	Malawi	0.47	40.54
90	Pakistan	0.46	39.19
91	Egypt	0.45	37.84
91	Guatemala	0.45	37.84
91	Viet Nam	0.45	37.84
94	El Salvador	0.43	35.14
94	Georgia	0.43	35.14
94	Greece	0.43	35.14
97	Kazakhstan	0.42	33.78
98	Malaysia	0.41	32.43
98	Uganda	0.41	32.43
100	China	0.40	31.08
100	Moldova, Rep.	0.40	31.08
100	Tajikistan	0.40	31.08
103	Russian Federation	0.39	29.73
104	India	0.38	28.38
104	Slovenia	0.38	28.38
106	Ukraine	0.37	27.03
107	Czech Republic	0.36	25.68
108	Croatia	0.34	22.97
109	Indonesia	0.32	20.27
110	Israel	0.31	18.92
111	Mongolia	0.30	17.57
112	Lithuania	0.29	16.22
112	Yemen	0.29	16.22
114	Hungary	0.28	14.86
115	Estonia	0.27	13.51
116	Bulgaria	0.26	12.16
117	Romania	0.25	10.81
118	Slovakia	0.23	8.11
118	Thailand	0.23	8.11
120	Latvia	0.22	6.76
121	Poland	0.21	5.41
122	Cambodia	0.17	0.00
	Brunei Darussalam	n/a	n/a
	Gambia	n/a	n/a
	Oman	n/a	n/a

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
1	Finland	6.31	100.00
1	Switzerland	6.31	100.00
3	New Zealand	6.25	98.51
4	Norway	6.12	95.29
5	Singapore	6.07	94.12
6	Australia	6.00	92.36
7	Canada	5.97	91.70
8	Iceland	5.96	91.53
9	United Arab Emirates	5.94	90.97
10	Netherlands	5.92	90.53
11	Denmark	5.89	89.65
12	Luxembourg	5.87	89.21
13	United States of America	5.68	84.53
14	Austria	5.65	83.99
15	Estonia	5.62	83.26
16	Qatar	5.49	79.89
17	Ireland	5.47	79.53
18	Germany	5.46	79.38
19	Belgium	5.44	78.89
20	Malta	5.44	78.67
21	Sweden	5.36	76.79
22	Rwanda	5.35	76.48
23	Czech Republic	5.33	76.09
24	Bahrain	5.26	74.30
25	United Kingdom	5.20	72.82
26	Japan	5.14	71.45
27	Malaysia	5.13	71.25
28	Israel	4.98	67.64
29	Costa Rica	4.97	67.30
30	Bhutan	4.96	67.06
31	Saudi Arabia	4.87	64.86
32	France	4.72	61.15
33	Slovenia	4.66	59.71
34	Brunei Darussalam	4.65	59.39
35	Uruguay	4.63	59.10
36	Trinidad and Tobago	4.62	58.78
37	Oman	4.61	58.64
38	Mongolia	4.59	57.98
39	Panama	4.58	57.74
40	Mauritius	4.55	57.08
41	Tajikistan	4.54	56.83
42	India	4.53	56.49
43	Lithuania	4.52	56.37
44	China	4.49	55.56
45	Indonesia	4.48	55.32
46	Kenya	4.45	54.73
47	Guatemala	4.45	54.56
48	Botswana	4.44	54.39
49	Nigeria	4.43	54.25
50	Portugal	4.43	54.22
51	Namibia	4.42	53.88
52	Spain	4.40	53.47
53	Latvia	4.40	53.37
54	Laos	4.36	52.49
55	Chile	4.35	52.29
56	Azerbaijan	4.33	51.66
57	Peru	4.33	51.59
58	Kazakhstan	4.32	51.46
59	Slovakia	4.31	51.24
60	Ghana	4.29	50.73
61	Tunisia	4.26	50.10
62	Cyprus	4.26	50.05
63	Sri Lanka	4.24	49.54
64	Uganda	4.24	49.46
65	Morocco	4.22	48.95
66	Tanzania, United Rep.	4.22	48.93
67	Senegal	4.20	48.44
68	Gambia	4.18	48.07
69	Georgia	4.17	47.88
70	Poland	4.17	47.78
71	Honduras	4.16	47.54
72	Paraguay	4.13	46.88
73	Bangladesh	4.13	46.71
74	Kyrgyzstan	4.10	46.05
75	Brazil	4.10	46.02
76	Thailand	4.08	45.51
77	Jordan	4.06	45.19
78	Zambia	4.05	44.95
79	Philippines	4.02	44.14
80	Mali	4.01	43.92
81	Cameroon	4.01	43.80
82	Montenegro	3.97	42.92
83	Ethiopia	3.95	42.53
84	Russian Federation	3.95	42.41
85	South Africa	3.91	41.48
86	Turkey	3.91	41.41
87	Armenia	3.87	40.43
88	Mexico	3.86	40.34
89	Italy	3.86	40.31
90	Viet Nam	3.86	40.29
91	Pakistan	3.85	40.00
92	Congo, Dem. Rep.	3.84	39.75
93	Iran, Islamic Rep.	3.82	39.17
94	Greece	3.81	39.04
95	Albania	3.79	38.56
96	Kuwait	3.78	38.36
97	Algeria	3.78	38.21
98	Nepal	3.77	37.95
99	Malawi	3.73	37.04
100	Madagascar	3.71	36.63
101	Egypt	3.70	36.26
102	Liberia	3.68	35.92
103	Colombia	3.65	35.19
104	Cambodia	3.65	35.16
105	Korea, Rep.	3.65	35.11
106	Dominican Republic	3.64	34.77
107	Lebanon	3.64	34.75
108	Nicaragua	3.60	33.89
109	Ecuador	3.60	33.85
110	Zimbabwe	3.59	33.67
111	Croatia	3.57	33.14
112	Lesotho	3.56	32.92
113	Argentina	3.51	31.75
114	Moldova, Rep.	3.44	29.89
115	Mozambique	3.43	29.70
116	Romania	3.42	29.60
117	Burundi	3.37	28.18
118	Hungary	3.33	27.31
119	Bulgaria	3.29	26.28
120	Serbia	3.22	24.52
121	Bosnia and Herzegovina	3.18	23.57
121	El Salvador	3.18	23.57
123	Ukraine	3.17	23.47
124	Yemen	2.97	18.62
125	Venezuela, Bolivarian Rep.	2.21	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.

2.2.4 Female graduates

Female tertiary graduates (%) | 2017

Rank	Country	Value	Score
1	Dominican Republic	67.72	100.00
2	Panama	66.40	96.66
3	Estonia	65.95	95.52
4	Poland	65.68	94.84
5	Latvia	65.64	94.74
6	Namibia	65.60	94.62
7	Tunisia	65.12	93.40
8	Argentina	65.00	93.10
9	Cyprus	64.50	91.84
10	Iceland	64.45	91.72
11	Honduras	64.45	91.72
12	Algeria	64.14	90.93
13	Uruguay	64.12	90.88
14	Albania	63.80	90.05
15	Brunei Darussalam	63.33	88.87
16	Costa Rica	62.96	87.93
17	Slovakia	62.57	86.94
18	Lithuania	62.44	86.60
19	Guatemala	62.38	86.46
20	Sri Lanka	62.23	86.08
21	Bahrain	61.99	85.46
22	Qatar	61.93	85.31
23	Sweden	61.84	85.08
24	Hungary	61.34	83.81
25	Bulgaria	61.21	83.49
26	Brazil	61.10	83.20
27	Slovenia	61.00	82.94
28	Mongolia	60.91	82.73
29	Lesotho	60.83	82.52
30	Czech Republic	60.52	81.75
31	Georgia	60.42	81.47
32	South Africa	60.41	81.46
33	Croatia	59.84	80.00
34	Moldova, Rep.	59.82	79.95
35	Montenegro	59.79	79.87
36	Oman	59.55	79.28
37	Belgium	59.51	79.19
38	Finland	59.34	78.75
39	Portugal	59.32	78.69
40	Malta	59.21	78.40
41	Italy	59.02	77.92
42	Indonesia	58.82	77.41
43	Norway	58.78	77.33
44	Botswana	58.76	77.28
45	Bosnia and Herzegovina	58.66	77.01
46	Philippines	58.61	76.89
47	Kyrgyzstan	58.58	76.82
48	Romania	58.55	76.74
49	Serbia	58.52	76.66
50	United States of America	58.36	76.25
51	Kuwait	58.28	76.06
52	Australia	57.86	74.99
53	Greece	57.78	74.78
54	United Kingdom	57.15	73.18
55	Armenia	57.15	73.18
56	Netherlands	56.61	71.81
57	Ecuador	56.53	71.61
58	Luxembourg	56.52	71.60
59	Denmark	56.43	71.36
60	Thailand	56.39	71.26
61	Colombia	56.28	70.98
62	Lebanon	56.20	70.77
63	New Zealand	56.03	70.35
64	France	56.03	70.35
65	Kazakhstan	56.03	70.34
66	Chile	56.03	70.34
67	Spain	55.90	70.02
68	El Salvador	55.51	69.02
69	Azerbaijan	55.42	68.79
70	United Arab Emirates	55.15	68.12
71	Austria	54.93	67.55
72	Ukraine	53.93	65.02
73	Viet Nam	53.84	64.78
74	Egypt	53.64	64.26
75	Malaysia	53.59	64.16
76	Mexico	52.80	62.14
77	Ireland	52.18	60.58
78	Saudi Arabia	51.79	59.58
79	China	51.71	59.38
80	Korea, Rep.	51.07	57.75
81	India	50.34	55.91
82	Japan	49.43	53.60
83	Turkey	49.24	53.11
84	Laos	48.78	51.96
85	Switzerland	48.50	51.22
86	Nepal	48.31	50.74
87	Madagascar	48.15	50.34
88	Morocco	47.61	48.97
89	Gambia	47.42	48.49
90	Jordan	46.80	46.91
91	Mozambique	46.35	45.77
92	Rwanda	46.26	45.54
93	Cambodia	42.77	36.70
94	Tajikistan	42.52	36.06
95	Zimbabwe	41.54	33.57
96	Ghana	41.54	33.56
97	Iran, Islamic Rep.	41.17	32.64
98	Liberia	38.15	24.98
99	Malawi	34.49	15.67
100	Bhutan	34.19	14.92
101	Ethiopia	33.52	13.21
102	Senegal	33.42	12.97
103	Yemen	33.35	12.78
104	Burundi	30.14	4.63
105	Bangladesh	28.31	0.00
	Cameroon	n/a	n/a
	Canada	n/a	n/a
	Congo, Dem. Rep.	n/a	n/a
	Germany	n/a	n/a
	Israel	n/a	n/a
	Kenya	n/a	n/a
	Mali	n/a	n/a
	Mauritius	n/a	n/a
	Nicaragua	n/a	n/a
	Nigeria	n/a	n/a
	Pakistan	n/a	n/a
	Paraguay	n/a	n/a
	Peru	n/a	n/a
	Russian Federation	n/a	n/a
	Singapore	n/a	n/a
	Tanzania, United Rep.	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Uganda	n/a	n/a
	Venezuela, Bolivarian Rep.	n/a	n/a
	Zambia	n/a	n/a

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
1	Burundi	1.00	100.00
2	Liberia	0.98	97.85
3	Namibia	0.88	85.42
4	Botswana	0.87	84.11
5	Rwanda	0.86	83.27
6	Mozambique	0.85	82.32
7	Laos	0.85	81.60
8	Viet Nam	0.82	78.61
9	Nicaragua	0.82	78.02
10	Slovenia	0.81	76.70
11	Norway	0.79	74.79
12	Sweden	0.79	74.31
13	Thailand	0.77	72.76
14	Malawi	0.75	70.37
14	Moldova, Rep.	0.75	70.37
16	Mongolia	0.74	69.18
17	France	0.74	68.82
18	Cambodia	0.73	67.74
18	Ghana	0.73	67.74
20	Croatia	0.73	67.38
20	Iceland	0.73	67.38
22	Portugal	0.72	66.91
23	Lithuania	0.72	66.55
23	Tanzania, United Rep.	0.72	66.55
25	Finland	0.71	65.35
26	Singapore	0.70	64.52
27	Switzerland	0.70	64.28
28	Latvia	0.70	64.16
29	Romania	0.69	63.08
30	Germany	0.68	62.01
31	Colombia	0.68	61.53
32	Philippines	0.68	61.29
33	Serbia	0.67	60.69
34	Canada	0.67	60.57
34	Denmark	0.67	60.57
36	Zimbabwe	0.67	60.45
37	Malaysia	0.67	60.10
38	Cameroon	0.66	59.86
38	Cyprus	0.66	59.86
40	Madagascar	0.66	59.74
41	Greece	0.66	59.02
42	Nepal	0.65	58.66
43	Peru	0.65	58.54
44	Nigeria	0.65	58.30
45	Bulgaria	0.65	58.18
46	Belgium	0.65	57.95
46	United States of America	0.65	57.95
48	Kenya	0.65	57.71
49	Poland	0.64	56.63
50	Spain	0.63	56.03
51	Hungary	0.63	55.91
52	Luxembourg	0.63	55.44
53	Australia	0.62	55.08
54	Brunei Darussalam	0.62	54.96
54	Panama	0.62	54.96
56	China	0.62	54.72
56	New Zealand	0.62	54.72
58	Venezuela, Bolivarian Rep.	0.62	54.60
59	Estonia	0.62	54.36
60	Russian Federation	0.62	54.24
61	Ecuador	0.61	53.52
62	Ethiopia	0.60	52.69
63	Slovakia	0.60	52.57
64	Ukraine	0.60	52.21
65	Uganda	0.60	51.97
66	Czech Republic	0.60	51.85
66	South Africa	0.60	51.85
68	Israel	0.60	51.61
69	Kazakhstan	0.59	51.49
70	Uruguay	0.59	51.25
71	Bahrain	0.59	50.90
72	El Salvador	0.59	50.78
73	Lesotho	0.59	50.66
74	Dominican Republic	0.58	50.30
75	Ireland	0.58	50.18
76	Brazil	0.58	49.58
76	Tajikistan	0.58	49.58
78	Montenegro	0.57	48.75
79	Bhutan	0.57	48.39
80	Paraguay	0.56	47.55
81	United Kingdom	0.55	46.59
82	Costa Rica	0.55	46.48
83	Armenia	0.55	45.76
84	Albania	0.53	43.61
85	Honduras	0.53	43.49
86	Austria	0.52	43.13
86	Japan	0.52	43.13
88	Chile	0.52	42.77
89	Italy	0.52	42.41
90	Guatemala	0.51	41.22
91	Senegal	0.50	40.74
92	Kyrgyzstan	0.50	40.26
93	Mexico	0.50	39.78
94	Bangladesh	0.50	39.67
95	Malta	0.49	39.55
96	Indonesia	0.49	39.19
97	Argentina	0.49	38.47
98	Qatar	0.48	38.23
99	Georgia	0.48	37.99
100	Netherlands	0.48	37.87
101	Azerbaijan	0.48	37.28
102	Mauritius	0.47	36.80
103	Korea, Rep.	0.45	33.93
104	Turkey	0.44	33.09
105	Bosnia and Herzegovina	0.44	32.97
106	Kuwait	0.43	31.42
107	Gambia	0.42	30.35
108	Mali	0.38	25.45
109	Sri Lanka	0.35	22.22
110	Egypt	0.29	14.58
111	Tunisia	0.27	12.78
112	United Arab Emirates	0.27	12.19
112	Yemen	0.27	12.19
114	Morocco	0.26	12.07
115	Lebanon	0.25	10.51
116	India	0.23	8.24
117	Saudi Arabia	0.22	6.45
118	Pakistan	0.19	2.63
119	Algeria	0.18	2.39
120	Iran, Islamic Rep.	0.17	0.60
121	Jordan	0.16	0.00
	Congo, Dem. Rep.	n/a	n/a
	Oman	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Zambia	n/a	n/a

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
1	Finland	6.11	100.00
2	Norway	5.98	95.47
3	Iceland	5.92	93.29
4	United Arab Emirates	5.91	93.15
5	Rwanda	5.90	92.81
6	Sweden	5.75	87.70
7	Singapore	5.75	87.59
8	Albania	5.66	84.66
9	Denmark	5.55	80.64
10	Bhutan	5.54	80.47
11	New Zealand	5.50	79.18
12	Malaysia	5.46	77.78
13	United States of America	5.44	77.20
14	Philippines	5.42	76.38
15	Qatar	5.38	74.98
16	Canada	5.35	73.82
17	Luxembourg	5.30	72.22
18	Latvia	5.28	71.54
19	Bahrain	5.28	71.47
20	Switzerland	5.25	70.65
21	Gambia	5.24	70.38
22	Estonia	5.23	69.90
23	Netherlands	5.17	67.72
24	Australia	5.05	63.84
25	Germany	5.03	62.99
26	Thailand	5.01	62.41
27	Oman	5.00	62.00
28	Slovenia	4.99	61.86
29	Brunei Darussalam	4.95	60.22
30	Ireland	4.94	60.12
31	Indonesia	4.93	59.78
32	United Kingdom	4.92	59.48
33	Laos	4.88	57.87
34	Azerbaijan	4.86	57.36
35	Kazakhstan	4.86	57.26
36	Lithuania	4.84	56.65
37	Belgium	4.84	56.54
38	Uganda	4.83	56.13
39	Ukraine	4.80	55.39
40	Tajikistan	4.80	55.25
41	Algeria	4.78	54.40
42	Czech Republic	4.77	54.09
43	Mongolia	4.76	53.85
44	Armenia	4.75	53.65
45	Botswana	4.73	53.00
46	Israel	4.68	50.99
46	Trinidad and Tobago	4.68	50.99
48	Austria	4.65	50.20
49	Malta	4.63	49.45
50	Cambodia	4.60	48.30
51	Russian Federation	4.57	47.44
52	China	4.56	47.10
53	Panama	4.54	46.25
54	Kyrgyzstan	4.53	46.05
55	India	4.51	45.40
56	Jordan	4.49	44.58
57	Georgia	4.48	44.31
58	Egypt	4.43	42.74
59	Namibia	4.43	42.47
60	Ghana	4.42	42.19
61	Moldova, Rep.	4.40	41.72
62	Romania	4.40	41.55
63	Nigeria	4.37	40.73
64	Venezuela, Bolivarian Rep.	4.34	39.67
65	Tunisia	4.34	39.54
66	Zimbabwe	4.34	39.50
67	Portugal	4.34	39.47
68	Senegal	4.31	38.48
69	Costa Rica	4.31	38.41
70	Tanzania, United Rep.	4.29	37.93
71	Montenegro	4.28	37.39
72	Zambia	4.27	37.25
73	Mauritius	4.27	37.12
74	Sri Lanka	4.25	36.54
75	Bulgaria	4.23	35.89
76	Slovakia	4.21	35.04
77	Greece	4.20	34.80
78	Honduras	4.18	33.98
79	Cyprus	4.17	33.84
80	Kuwait	4.16	33.44
80	Poland	4.16	33.44
82	Kenya	4.14	32.69
83	Congo, Dem. Rep.	4.13	32.24
84	Madagascar	4.09	30.91
85	Viet Nam	4.06	30.13
86	South Africa	4.06	29.86
87	Cameroon	4.05	29.52
88	Lebanon	4.04	29.45
89	Uruguay	4.02	28.66
90	Burundi	4.01	28.43
91	Bangladesh	4.00	27.98
92	Mozambique	3.97	27.06
93	Guatemala	3.97	26.86
94	Serbia	3.95	26.41
95	Colombia	3.94	26.07
96	Malawi	3.91	24.98
97	Nicaragua	3.91	24.81
98	Liberia	3.90	24.68
99	Japan	3.89	24.30
100	Morocco	3.85	22.80
101	Argentina	3.82	21.71
102	Ecuador	3.81	21.51
103	France	3.80	21.00
104	Dominican Republic	3.78	20.59
105	Croatia	3.76	19.90
106	Mali	3.75	19.33
106	Saudi Arabia	3.75	19.33
108	Nepal	3.73	18.92
109	Bosnia and Herzegovina	3.73	18.88
110	Ethiopia	3.72	18.58
111	Pakistan	3.71	18.00
112	Spain	3.67	16.60
113	Brazil	3.63	15.20
114	Paraguay	3.62	15.03
115	Iran, Islamic Rep.	3.61	14.79
116	Chile	3.60	14.25
117	Korea, Rep.	3.57	13.19
118	Peru	3.52	11.76
119	Turkey	3.52	11.72
120	Hungary	3.46	9.71
121	Mexico	3.38	6.85
122	Italy	3.30	4.16
123	Lesotho	3.30	4.09
124	El Salvador	3.29	3.89
125	Yemen	3.18	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.

Pillar 3

Grow

3.1.1 Vocational enrolment

Vocational enrolment (%) | 2017

Rank	Country	Value	Score
1	Finland	47.88	100.00
2	Belgium	45.14	94.26
3	Slovenia	41.76	87.19
4	Croatia	39.83	83.17
5	Honduras	38.86	81.14
6	Czech Republic	38.25	79.87
7	Bosnia and Herzegovina	37.99	79.31
8	Switzerland	37.46	78.21
9	Australia	37.34	77.96
10	Netherlands	36.28	75.74
11	Austria	35.13	73.34
12	Serbia	35.00	73.07
13	Italy	34.32	71.65
14	Luxembourg	33.10	69.10
15	Montenegro	32.28	67.39
16	Slovakia	31.84	66.47
17	United Kingdom	29.53	61.64
18	Bulgaria	29.44	61.45
19	Norway	29.05	60.63
20	Poland	28.34	59.15
21	Mexico	27.57	57.54
22	Romania	27.54	57.48
23	Portugal	25.81	53.87
24	Turkey	25.42	53.04
25	Guatemala	24.50	51.12
26	Costa Rica	24.33	50.76
27	Sweden	23.47	48.96
28	Denmark	22.58	47.11
29	Uruguay	22.12	46.16
30	Cameroon	21.62	45.11
31	Iceland	21.46	44.77
32	Latvia	21.41	44.67
33	Egypt	21.17	44.17
34	Israel	19.76	41.22
35	China	19.74	41.17
36	Chile	19.62	40.93
37	Estonia	19.24	40.13
38	Congo, Dem. Rep.	18.86	39.33
39	Germany	18.57	38.73
40	Spain	18.45	38.47
41	Indonesia	18.34	38.26
42	France	18.07	37.69
43	El Salvador	17.63	36.77
44	Rwanda	16.36	34.11
45	Panama	16.2	33.77
46	Ireland	16.18	33.73
47	Greece	16.12	33.60
48	Russian Federation	15.84	33.03
49	Paraguay	15.56	32.44
50	New Zealand	15.18	31.64
51	Ecuador	15.14	31.56
52	Iran, Islamic Rep.	14.57	30.36
53	Lebanon	14.12	29.42
54	Moldova, Rep.	13.35	27.82
55	Mali	12.95	26.99
56	Tanzania, United Rep.	12.10	25.20
57	Hungary	11.66	24.29
58	Singapore	11.57	24.09
59	Mongolia	11.55	24.06
60	Japan	11.53	24.02
61	Kazakhstan	10.98	22.86
62	Malaysia	10.91	22.73
63	Brunei Darussalam	10.66	22.19
64	Armenia	10.52	21.91
65	Thailand	10.14	21.10
66	Lithuania	9.74	20.28
67	Gambia	9.62	20.01
68	Korea, Rep.	9.43	19.63
69	Kyrgyzstan	9.30	19.35
70	Mauritius	9.25	19.25
71	Tunisia	9.07	18.88
72	Malta	8.98	18.68
73	Albania	8.64	17.97
74	Algeria	8.33	17.33
75	Cyprus	8.20	17.05
76	Ukraine	8.01	16.65
77	Colombia	7.46	15.50
78	Liberia	7.39	15.36
79	South Africa	7.09	14.74
80	Burundi	7.03	14.62
81	Ethiopia	7.00	14.55
82	Bahrain	6.65	13.82
83	Morocco	6.09	12.63
84	Saudi Arabia	5.39	11.19
85	Dominican Republic	5.03	10.44
86	Mozambique	4.88	10.12
87	Canada	4.73	9.81
88	Senegal	4.71	9.75
89	Venezuela, Bolivarian Rep.	4.43	9.18
90	Georgia	4.41	9.13
91	Sri Lanka	4.22	8.74
92	Bangladesh	3.97	8.21
93	Brazil	3.80	7.86
94	Jordan	3.77	7.80
95	Lesotho	3.55	7.33
96	Pakistan	2.58	5.30
97	Kuwait	2.41	4.95
98	Ghana	2.32	4.76
99	Cambodia	2.28	4.67
100	Madagascar	2.04	4.18
101	Bhutan	2.00	4.09
102	United Arab Emirates	1.89	3.88
103	Peru	1.64	3.35
104	Nicaragua	1.48	3.01
105	Tajikistan	1.41	2.87
106	India	1.33	2.70
107	Laos	1.28	2.59
108	Qatar	0.73	1.45
109	Nepal	0.65	1.28
110	Kenya	0.49	0.94
111	Yemen	0.25	0.44
112	Oman	0.04	0.00
	Argentina	n/a	n/a
	Azerbaijan	n/a	n/a
	Botswana	n/a	n/a
	Malawi	n/a	n/a
	Namibia	n/a	n/a
	Nigeria	n/a	n/a
	Philippines	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Uganda	n/a	n/a
	United States of America	n/a	n/a
	Viet Nam	n/a	n/a
	Zambia	n/a	n/a
	Zimbabwe	n/a	n/a

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
1	Australia	121.86	100.00
2	Greece	117.43	96.34
3	Turkey	95.43	78.18
4	Korea, Rep.	93.26	76.38
5	Spain	91.18	74.66
6	Chile	90.32	73.96
7	Finland	86.99	71.20
8	Argentina	85.71	70.15
9	Ireland	83.53	68.35
10	Austria	83.46	68.28
11	Ukraine	83.42	68.26
12	Russian Federation	81.82	66.93
13	New Zealand	81.75	66.88
14	Denmark	81.06	66.30
15	Norway	80.55	65.88
16	Netherlands	80.36	65.73
17	Slovenia	80.05	65.47
18	Venezuela, Bolivarian Rep.	76.99	62.95
19	Iceland	75.77	61.93
20	Belgium	74.56	60.94
21	Estonia	72.05	58.86
22	Bulgaria	71.23	58.19
23	Iran, Islamic Rep.	68.85	56.22
24	Latvia	68.18	55.67
25	Croatia	67.48	55.09
26	Saudi Arabia	66.60	54.36
27	Poland	66.56	54.33
28	Germany	66.28	54.10
29	Lithuania	65.99	53.86
30	France	65.26	53.26
31	Mongolia	64.56	52.68
32	Czech Republic	64.46	52.59
33	Israel	64.16	52.35
34	Japan	63.24	51.59
35	Portugal	62.94	51.34
36	Italy	62.87	51.29
37	Sweden	62.28	50.80
38	Serbia	62.14	50.68
39	Albania	61.21	49.91
40	Cyprus	60.10	49.00
41	Colombia	58.72	47.86
42	Switzerland	57.87	47.15
43	United Kingdom	57.29	46.68
44	Montenegro	56.88	46.33
45	Uruguay	55.57	45.25
46	Costa Rica	53.99	43.95
47	Dominican Republic	52.99	43.13
48	Slovakia	52.68	42.86
49	Georgia	51.88	42.21
50	Armenia	51.08	41.55
51	Brazil	50.60	41.15
52	Kazakhstan	49.57	40.30
53	Malta	48.84	39.69
54	China	48.44	39.37
55	Hungary	48.03	39.03
56	Romania	48.02	39.02
57	Panama	47.27	38.40
58	Bahrain	46.57	37.82
59	Kyrgyzstan	45.89	37.26
60	Thailand	45.89	37.26
61	Ecuador	45.55	36.98
62	Oman	44.60	36.19
63	Malaysia	44.12	35.79
64	Algeria	42.66	34.59
65	Moldova, Rep.	41.21	33.40
66	Mauritius	38.84	31.44
67	Lebanon	38.20	30.91
68	Mexico	36.85	29.79
69	United Arab Emirates	36.85	29.79
70	Jordan	36.26	29.31
71	Philippines	35.28	28.50
72	Paraguay	35.08	28.33
73	Egypt	34.44	27.80
74	Tunisia	32.58	26.27
75	Kuwait	32.57	26.26
76	Morocco	31.96	25.75
77	Tajikistan	30.87	24.86
78	Brunei Darussalam	30.86	24.85
79	Viet Nam	28.26	22.70
80	El Salvador	28.03	22.51
81	Indonesia	27.94	22.43
82	Azerbaijan	27.24	21.85
83	India	26.93	21.60
84	Botswana	23.38	18.67
85	Guatemala	21.28	16.94
86	Honduras	20.49	16.28
87	South Africa	19.78	15.70
88	Luxembourg	19.71	15.64
89	Sri Lanka	18.86	14.93
90	Cameroon	17.41	13.74
91	Bangladesh	17.33	13.67
92	Laos	17.21	13.57
93	Ghana	16.07	12.63
94	Qatar	15.42	12.10
95	Cambodia	13.14	10.21
96	Nepal	11.80	9.11
97	Liberia	11.67	9.00
98	Senegal	10.58	8.10
99	Bhutan	10.51	8.04
100	Nigeria	10.17	7.76
101	Yemen	9.97	7.60
102	Pakistan	9.73	7.40
103	Namibia	9.33	7.06
104	Lesotho	9.10	6.88
105	Zimbabwe	8.48	6.37
106	Ethiopia	8.12	6.07
107	Rwanda	8.00	5.97
108	Mozambique	7.04	5.18
109	Congo, Dem. Rep.	6.94	5.09
110	Mali	5.49	3.89
111	Burundi	5.30	3.74
112	Madagascar	4.81	3.33
113	Uganda	4.62	3.18
114	Kenya	4.04	2.70
115	Zambia	4.01	2.68
116	Tanzania, United Rep.	3.92	2.60
117	Gambia	3.09	1.92
118	Malawi	0.77	0.00
	Bosnia and Herzegovina	n/a	n/a
	Canada	n/a	n/a
	Nicaragua	n/a	n/a
	Peru	n/a	n/a
	Singapore	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	United States of America	n/a	n/a

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
1	Lesotho	4.14	100.00
2	Botswana	4.00	96.44
3	Denmark	2.34	55.90
4	Senegal	2.28	54.41
5	Norway	2.19	52.27
6	Ecuador	2.18	51.80
7	Finland	2.00	47.41
8	Sweden	1.94	46.07
9	Namibia	1.93	45.73
10	Ethiopia	1.92	45.58
11	Ukraine	1.85	43.88
12	Austria	1.77	41.92
13	Netherlands	1.69	39.93
14	Canada	1.63	38.47
15	New Zealand	1.62	38.25
16	Costa Rica	1.62	38.24
17	Tunisia	1.58	37.21
18	Venezuela, Bolivarian Rep.	1.55	36.58
19	Turkey	1.55	36.51
20	Iceland	1.50	35.33
21	Belgium	1.45	34.15
22	Estonia	1.44	33.73
23	Malta	1.40	32.74
24	Slovakia	1.39	32.59
25	Australia	1.38	32.28
26	United States of America	1.37	32.14
27	Switzerland	1.33	31.16
28	Lithuania	1.33	31.06
29	Burundi	1.31	30.67
30	Germany	1.31	30.64
31	United Kingdom	1.29	30.01
32	Oman	1.27	29.73
33	Zimbabwe	1.27	29.58
34	Chile	1.26	29.37
35	France	1.25	29.08
36	Serbia	1.22	28.33
37	Argentina	1.21	28.08
38	Poland	1.18	27.55
39	Algeria	1.17	27.18
40	Uruguay	1.17	27.15
41	Nicaragua	1.17	27.14
42	Brazil	1.15	26.61
43	Mexico	1.14	26.35
44	Malaysia	1.13	26.19
45	Ghana	1.13	26.09
46	Latvia	1.12	26.03
47	Paraguay	1.11	25.76
48	Malawi	1.10	25.40
49	India	1.10	25.39
50	Moldova, Rep.	1.09	25.18
51	Cyprus	1.08	24.87
52	Morocco	1.06	24.54
53	Korea, Rep.	1.05	24.29
54	Slovenia	1.05	24.16
55	Colombia	1.03	23.76
56	Singapore	1.03	23.70
57	Ireland	1.02	23.49
58	Iran, Islamic Rep.	1.00	23.12
59	Croatia	1.00	23.09
60	Spain	0.96	22.11
61	Portugal	0.91	20.90
62	Mozambique	0.89	20.26
63	Honduras	0.88	20.18
64	Israel	0.88	19.98
65	Liberia	0.87	19.85
66	Viet Nam	0.85	19.31
67	Brunei Darussalam	0.84	19.01
68	Russian Federation	0.80	18.17
69	Czech Republic	0.80	18.13
70	Italy	0.80	18.08
71	Mali	0.79	17.88
72	Jordan	0.78	17.56
73	Hungary	0.76	17.19
74	Japan	0.75	16.79
75	Tanzania, United Rep.	0.75	16.78
76	South Africa	0.74	16.58
77	Albania	0.73	16.43
78	Lebanon	0.71	15.99
79	Panama	0.71	15.80
80	Kenya	0.69	15.41
81	Romania	0.68	15.12
82	Bulgaria	0.65	14.37
83	Peru	0.65	14.37
84	Thailand	0.64	14.24
85	Bhutan	0.61	13.47
86	Bahrain	0.60	13.34
87	Mongolia	0.57	12.45
88	Indonesia	0.57	12.40
89	Congo, Dem. Rep.	0.55	11.89
90	Tajikistan	0.52	11.28
91	Luxembourg	0.51	10.91
92	Sri Lanka	0.42	8.91
93	Bangladesh	0.42	8.88
94	Georgia	0.42	8.81
95	Madagascar	0.42	8.71
96	Guatemala	0.41	8.68
97	Laos	0.41	8.48
98	Nepal	0.40	8.33
99	Azerbaijan	0.38	7.80
100	Uganda	0.37	7.52
101	Armenia	0.36	7.42
102	Kazakhstan	0.35	7.03
103	Mauritius	0.32	6.31
104	Philippines	0.32	6.31
105	Gambia	0.30	5.85
106	Dominican Republic	0.30	5.82
107	Cameroon	0.28	5.46
108	Pakistan	0.28	5.41
109	El Salvador	0.28	5.33
110	Kyrgyzstan	0.26	4.82
111	Cambodia	0.12	1.56
112	Rwanda	0.06	0.00
	Bosnia and Herzegovina	n/a	n/a
	China	n/a	n/a
	Egypt	n/a	n/a
	Greece	n/a	n/a
	Kuwait	n/a	n/a
	Montenegro	n/a	n/a
	Nigeria	n/a	n/a
	Qatar	n/a	n/a
	Saudi Arabia	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	United Arab Emirates	n/a	n/a
	Yemen	n/a	n/a
	Zambia	n/a	n/a

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.

3.1.4 Reading, maths, and science

PISA average scores in reading, mathematics, and science | 2015

Rank	Country	Value	Score
1	Singapore	551.62	100.00
2	Japan	528.93	89.33
3	Estonia	524.29	87.14
4	Canada	523.34	86.70
5	Finland	522.72	86.41
6	Korea, Rep.	519.12	84.71
7	China	514.34	82.46
8	Slovenia	509.33	80.11
9	Ireland	509.04	79.97
10	Germany	508.07	79.51
11	Netherlands	507.93	79.45
12	Switzerland	506.32	78.69
13	New Zealand	505.93	78.51
14	Norway	504.47	77.82
15	Denmark	504.28	77.73
16	Poland	503.87	77.54
17	Belgium	502.50	76.89
18	Australia	502.26	76.78
19	Viet Nam	501.98	76.65
20	United Kingdom	499.89	75.67
21	Portugal	496.95	74.28
22	Sweden	495.83	73.76
23	France	495.73	73.71
24	Austria	492.22	72.06
25	Russian Federation	491.77	71.85
26	Spain	491.40	71.67
27	Czech Republic	490.80	71.39
28	United States of America	487.60	69.89
29	Latvia	486.76	69.49
30	Italy	485.01	68.67
31	Luxembourg	483.34	67.88
32	Iceland	480.93	66.75
33	Croatia	475.43	64.16
34	Lithuania	475.40	64.15
35	Hungary	474.37	63.66
36	Israel	471.73	62.42
37	Malta	463.36	58.48
38	Slovakia	462.84	58.24
39	Greece	458.50	56.20
40	Kazakhstan	447.81	51.17
41	Chile	442.73	48.78
42	Malaysia	439.88	47.44
43	Bulgaria	439.56	47.29
44	Cyprus	437.51	46.32
45	Romania	437.49	46.31
46	United Arab Emirates	432.59	44.01
47	Uruguay	429.98	42.78
48	Turkey	424.76	40.33
49	Trinidad and Tobago	423.04	39.52
50	Argentina	422.19	39.12
51	Moldova, Rep.	421.30	38.70
52	Montenegro	418.71	37.48
53	Costa Rica	415.78	36.10
54	Mexico	415.67	36.05
55	Thailand	415.31	35.88
56	Albania	415.21	35.83
57	Colombia	410.09	33.43
58	Qatar	407.30	32.11
59	Georgia	405.42	31.23
60	Jordan	399.01	28.21
61	Indonesia	395.49	26.56
62	Brazil	395.03	26.34
63	Peru	393.60	25.67
64	Lebanon	376.43	17.59
65	Tunisia	371.43	15.24
66	Algeria	361.74	10.68
67	Dominican Republic	339.03	0.00
	Armenia	n/a	n/a
	Azerbaijan	n/a	n/a
	Bahrain	n/a	n/a
	Bangladesh	n/a	n/a
	Bhutan	n/a	n/a
	Bosnia and Herzegovina	n/a	n/a
	Botswana	n/a	n/a
	Brunei Darussalam	n/a	n/a
	Burundi	n/a	n/a
	Cambodia	n/a	n/a
	Cameroon	n/a	n/a
	Congo, Dem. Rep.	n/a	n/a
	Ecuador	n/a	n/a
	Egypt	n/a	n/a
	El Salvador	n/a	n/a
	Ethiopia	n/a	n/a
	Gambia	n/a	n/a
	Ghana	n/a	n/a
	Guatemala	n/a	n/a
	Honduras	n/a	n/a
	India	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Kenya	n/a	n/a
	Kuwait	n/a	n/a
	Kyrgyzstan	n/a	n/a
	Laos	n/a	n/a
	Lesotho	n/a	n/a
	Liberia	n/a	n/a
	Madagascar	n/a	n/a
	Malawi	n/a	n/a
	Mali	n/a	n/a
	Mauritius	n/a	n/a
	Mongolia	n/a	n/a
	Morocco	n/a	n/a
	Mozambique	n/a	n/a
	Namibia	n/a	n/a
	Nepal	n/a	n/a
	Nicaragua	n/a	n/a
	Nigeria	n/a	n/a
	Oman	n/a	n/a
	Pakistan	n/a	n/a
	Panama	n/a	n/a
	Paraguay	n/a	n/a
	Philippines	n/a	n/a
	Rwanda	n/a	n/a
	Saudi Arabia	n/a	n/a
	Senegal	n/a	n/a
	Serbia	n/a	n/a
	South Africa	n/a	n/a
	Sri Lanka	n/a	n/a
	Tajikistan	n/a	n/a
	Tanzania, United Rep.	n/a	n/a
	Uganda	n/a	n/a
	Ukraine	n/a	n/a
	Venezuela, Bolivarian Rep.	n/a	n/a
	Yemen	n/a	n/a
	Zambia	n/a	n/a
	Zimbabwe	n/a	n/a

SOURCE: OECD Programme for International Student Assessment (PISA) (www.oecd.org/pisa)
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.

3.1.5 University ranking

QS World University Ranking | 2019

Rank	Country	Value	Score
1	United States of America	99.03	100.00
2	United Kingdom	95.23	96.16
3	China	82.47	83.27
4	Switzerland	81.57	82.36
5	Australia	80.93	81.72
6	Canada	80.17	80.95
7	Japan	79.17	79.94
8	Korea, Rep.	74.10	74.82
9	France	69.27	69.94
10	Germany	69.13	69.81
11	Singapore	68.93	69.61
12	Netherlands	68.07	68.73
13	Sweden	59.07	59.64
14	Denmark	57.10	57.66
15	Belgium	54.20	54.73
16	Malaysia	50.63	51.13
17	New Zealand	50.07	50.56
18	Finland	48.00	48.47
19	Italy	47.60	48.06
20	India	47.30	47.76
21	Ireland	47.03	47.49
22	Spain	47.00	47.46
23	Russian Federation	46.73	47.19
24	Brazil	43.03	43.45
25	Norway	42.93	43.35
26	Israel	42.60	43.02
27	Austria	42.03	42.44
28	Argentina	41.93	42.34
29	Mexico	41.20	41.60
30	Saudi Arabia	40.90	41.30
31	Chile	39.50	39.89
32	South Africa	33.60	33.93
33	Colombia	33.23	33.56
34	Qatar	32.00	32.31
35	Kazakhstan	31.67	31.98
36	Indonesia	31.27	31.57
37	United Arab Emirates	31.20	31.50
38	Portugal	30.27	30.56
39	Brunei Darussalam	29.40	29.69
40	Thailand	28.03	28.31
41	Lebanon	27.60	27.87
42	Pakistan	25.73	25.98
43	Oman	25.70	25.95
44	Czech Republic	25.43	25.68
44	Poland	25.43	25.68
46	Turkey	24.80	25.04
47	Iran, Islamic Rep.	23.37	23.59
48	Ukraine	21.97	22.18
49	Greece	21.93	22.15
50	Egypt	21.87	22.08
51	Estonia	21.60	21.81
52	Bosnia and Herzegovina	20.90	21.10
53	Hungary	20.53	20.73
54	Philippines	19.93	20.13
55	Lithuania	19.80	19.99
56	Uruguay	17.95	18.13
57	Costa Rica	17.10	17.27
58	Jordan	17.07	17.23
59	Slovenia	15.80	15.95
60	Viet Nam	14.90	15.05
61	Peru	14.83	14.98
62	Bulgaria	14.10	14.24
62	Croatia	14.10	14.24
64	Slovakia	13.83	13.97
65	Venezuela, Bolivarian Rep.	13.73	13.87
66	Ecuador	13.63	13.77
67	Bahrain	13.60	13.73
68	Kuwait	13.50	13.63
69	Latvia	13.07	13.19
70	Bangladesh	11.95	12.07
71	Romania	11.90	12.02
72	Azerbaijan	11.00	11.11
73	Morocco	10.60	10.70
74	Panama	10.30	10.40
75	Sri Lanka	9.70	9.79
76	Serbia	8.80	8.89
77	Kenya	7.40	7.47
78	Albania	0.00	0.00
78	Algeria	0.00	0.00
78	Armenia	0.00	0.00
78	Bhutan	0.00	0.00
78	Botswana	0.00	0.00
78	Burundi	0.00	0.00
78	Cambodia	0.00	0.00
78	Cameroon	0.00	0.00
78	Congo, Dem. Rep.	0.00	0.00
78	Cyprus	0.00	0.00
78	Dominican Republic	0.00	0.00
78	El Salvador	0.00	0.00
78	Ethiopia	0.00	0.00
78	Gambia	0.00	0.00
78	Georgia	0.00	0.00
78	Ghana	0.00	0.00
78	Guatemala	0.00	0.00
78	Honduras	0.00	0.00
78	Iceland	0.00	0.00
78	Kyrgyzstan	0.00	0.00
78	Laos	0.00	0.00
78	Lesotho	0.00	0.00
78	Liberia	0.00	0.00
78	Luxembourg	0.00	0.00
78	Madagascar	0.00	0.00
78	Malawi	0.00	0.00
78	Mali	0.00	0.00
78	Malta	0.00	0.00
78	Mauritius	0.00	0.00
78	Moldova, Rep.	0.00	0.00
78	Mongolia	0.00	0.00
78	Montenegro	0.00	0.00
78	Mozambique	0.00	0.00
78	Namibia	0.00	0.00
78	Nepal	0.00	0.00
78	Nicaragua	0.00	0.00
78	Nigeria	0.00	0.00
78	Paraguay	0.00	0.00
78	Rwanda	0.00	0.00
78	Senegal	0.00	0.00
78	Tajikistan	0.00	0.00
78	Tanzania, United Rep.	0.00	0.00
78	Trinidad and Tobago	0.00	0.00
78	Tunisia	0.00	0.00
78	Uganda	0.00	0.00
78	Yemen	0.00	0.00
78	Zambia	0.00	0.00
78	Zimbabwe	0.00	0.00

SOURCE: Quacquarelli Symonds Ltd (QS), QS World University Ranking 2019, Top Universities (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
1	Switzerland	6.39	100.00
2	United Kingdom	6.03	90.51
3	Netherlands	6.01	89.76
4	Singapore	5.96	88.42
5	Belgium	5.88	86.32
6	United States of America	5.85	85.60
7	Qatar	5.80	84.33
8	Canada	5.78	83.71
9	Lebanon	5.66	80.44
10	France	5.61	78.98
11	Finland	5.60	78.90
12	Spain	5.58	78.23
13	Denmark	5.56	77.77
14	United Arab Emirates	5.48	75.54
15	Ireland	5.44	74.66
16	Australia	5.43	74.31
17	Israel	5.41	73.77
18	Norway	5.39	73.26
19	Iceland	5.39	73.07
20	Costa Rica	5.34	71.89
21	Sweden	5.34	71.78
22	Germany	5.32	71.30
23	New Zealand	5.31	71.00
24	Malaysia	5.29	70.55
25	Italy	5.28	70.12
26	Chile	5.27	69.98
27	Austria	5.00	62.83
28	Lesotho	4.98	62.13
29	Portugal	4.97	61.81
30	Estonia	4.97	61.78
31	Malta	4.89	59.74
32	Bahrain	4.89	59.69
33	Trinidad and Tobago	4.84	58.32
34	Kenya	4.76	56.19
35	Philippines	4.76	56.14
36	Argentina	4.75	56.11
37	Senegal	4.75	56.03
38	India	4.65	53.27
39	Indonesia	4.61	52.35
40	Mauritius	4.57	51.12
41	Cameroon	4.54	50.47
42	South Africa	4.53	49.96
43	Guatemala	4.51	49.58
44	Ghana	4.51	49.42
44	Luxembourg	4.51	49.42
46	Sri Lanka	4.48	48.80
47	China	4.48	48.72
48	Latvia	4.41	46.76
49	Saudi Arabia	4.40	46.49
50	Slovenia	4.39	46.33
51	Bhutan	4.37	45.79
52	Rwanda	4.37	45.74
53	Uruguay	4.35	45.15
54	Jordan	4.34	44.96
55	Japan	4.33	44.75
56	Gambia	4.32	44.32
57	Czech Republic	4.30	43.94
58	Nicaragua	4.29	43.54
59	Colombia	4.27	43.16
60	Brunei Darussalam	4.26	42.78
61	Russian Federation	4.23	41.92
62	Hungary	4.22	41.82
63	Mexico	4.21	41.60
64	Venezuela, Bolivarian Rep.	4.21	41.57
65	Korea, Rep.	4.21	41.44
66	Poland	4.20	41.14
67	Azerbaijan	4.17	40.39
68	Cyprus	4.15	39.77
69	Montenegro	4.12	39.05
70	Madagascar	4.11	38.73
71	Albania	4.09	38.24
72	Thailand	4.08	38.05
73	Greece	4.08	37.87
74	Laos	4.04	36.79
75	Lithuania	4.03	36.68
76	Nepal	4.02	36.36
77	Tajikistan	4.02	36.28
77	Tunisia	4.02	36.28
79	Serbia	4.01	36.23
80	Morocco	4.01	36.07
81	Burundi	4.00	35.90
82	Ukraine	3.99	35.61
83	Panama	3.98	35.31
84	Peru	3.96	34.72
85	Ecuador	3.95	34.56
86	Iran, Islamic Rep.	3.89	32.92
87	Croatia	3.84	31.44
88	Nigeria	3.83	31.34
89	Brazil	3.83	31.20
90	Zambia	3.82	30.96
91	Dominican Republic	3.82	30.91
91	Mali	3.82	30.91
93	Zimbabwe	3.80	30.42
94	Kazakhstan	3.78	29.86
95	Ethiopia	3.77	29.59
96	Pakistan	3.77	29.56
97	Uganda	3.73	28.51
98	Bangladesh	3.70	27.76
99	Slovakia	3.68	27.17
100	Armenia	3.66	26.79
101	Congo, Dem. Rep.	3.64	26.10
102	Turkey	3.63	25.93
103	Botswana	3.63	25.91
104	Honduras	3.62	25.64
105	Kuwait	3.61	25.37
106	Algeria	3.56	23.95
107	Georgia	3.55	23.81
108	El Salvador	3.55	23.76
109	Namibia	3.53	23.17
110	Oman	3.50	22.33
111	Bulgaria	3.44	20.72
112	Moldova, Rep.	3.35	18.27
113	Tanzania, United Rep.	3.33	17.95
114	Viet Nam	3.32	17.52
115	Romania	3.27	16.23
116	Bosnia and Herzegovina	3.25	15.78
117	Cambodia	3.24	15.37
118	Egypt	3.19	14.03
119	Paraguay	3.16	13.25
120	Malawi	3.11	11.93
121	Liberia	3.06	10.56
122	Mongolia	2.93	6.99
123	Kyrgyzstan	2.83	4.43
124	Mozambique	2.78	3.12
125	Yemen	2.67	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.

3.2.2 Prevalence of training in firms

Proportion of firms offering formal training (%) | 2017

Rank	Country	Value	Score
1	China	79.20	100.00
2	Ecuador	73.70	92.74
3	Sweden	70.30	88.26
4	Peru	65.90	82.45
5	Colombia	63.00	78.63
6	Kyrgyzstan	62.70	78.23
7	Mongolia	60.90	75.86
8	Philippines	59.80	74.41
9	Chile	57.50	71.37
10	Nicaragua	57.30	71.11
11	Venezuela, Bolivarian Rep.	56.00	69.39
12	Guatemala	55.70	69.00
13	Rwanda	55.40	68.60
14	Czech Republic	55.10	68.21
15	Costa Rica	54.70	67.68
16	El Salvador	53.80	66.49
17	Uruguay	53.30	65.83
18	Bosnia and Herzegovina	52.40	64.64
19	Botswana	51.90	63.98
20	Mexico	50.80	62.53
21	Croatia	49.30	60.55
22	Honduras	47.70	58.44
23	Paraguay	46.40	56.73
24	Russian Federation	46.20	56.46
25	Slovakia	43.50	52.90
26	Bulgaria	42.70	51.85
27	Brazil	42.20	51.19
28	Lithuania	42.00	50.92
29	Slovenia	41.50	50.26
30	Romania	40.70	49.21
31	Kenya	40.60	49.08
32	Argentina	40.20	48.55
33	Ghana	40.10	48.42
34	Serbia	37.80	45.38
35	Cameroon	37.60	45.12
36	South Africa	36.80	44.06
37	India	35.90	42.88
38	Estonia	35.20	41.95
39	Uganda	34.70	41.29
40	Poland	34.60	41.16
41	Tajikistan	33.10	39.18
42	Malawi	32.90	38.92
43	Moldova, Rep.	32.40	38.26
44	Burundi	32.00	37.73
44	Pakistan	32	37.73
46	Nepal	31.90	37.60
47	Lesotho	31.20	36.68
48	Nigeria	30.70	36.02
48	Tanzania, United Rep.	30.70	36.02
50	Tunisia	28.90	33.64
51	Turkey	28.40	32.98
52	Kazakhstan	28.30	32.85
53	Zambia	28.20	32.72
54	Trinidad and Tobago	28.00	32.45
55	Lebanon	26.60	30.61
56	Zimbabwe	26.40	30.34
57	Morocco	26.30	30.21
58	Bhutan	26.00	29.82
59	Gambia	25.60	29.29
59	Mauritius	25.60	29.29
61	Namibia	25.40	29.02
62	Latvia	25.20	28.76
63	Albania	23.80	26.91
64	Montenegro	23.70	26.78
65	Dominican Republic	23.40	26.39
66	Liberia	22.80	25.59
67	Ukraine	22.60	25.33
68	Cambodia	22.20	24.80
68	Viet Nam	22.20	24.80
70	Mozambique	22.10	24.67
71	Bangladesh	21.90	24.41
72	Ethiopia	20.80	22.96
73	Azerbaijan	20.20	22.16
74	Israel	18.60	20.05
75	Malaysia	18.50	19.92
76	Sri Lanka	18.40	19.79
77	Thailand	18.00	19.26
78	Mali	17.70	18.87
79	Senegal	17.40	18.47
80	Congo, Dem. Rep.	17.00	17.94
81	Armenia	16.20	16.89
82	Hungary	15.80	16.36
83	Yemen	14.30	14.38
84	Madagascar	12.70	12.27
85	Panama	11.00	10.03
86	Georgia	10.50	9.37
87	Egypt	10.00	8.71
88	Indonesia	7.70	5.67
89	Laos	6.50	4.09
90	Jordan	3.40	0.00
88	Algeria	10.50	9.37
89	Australia	7.70	5.67
90	Austria	6.50	4.09
91	Bahrain	5.20	2.37
92	Belgium	3.40	0.00
	Brunei Darussalam	n/a	n/a
	Canada	n/a	n/a
	Cyprus	n/a	n/a
	Denmark	n/a	n/a
	Finland	n/a	n/a
	France	n/a	n/a
	Germany	n/a	n/a
	Greece	n/a	n/a
	Iceland	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Ireland	n/a	n/a
	Italy	n/a	n/a
	Japan	n/a	n/a
	Korea, Rep.	n/a	n/a
	Kuwait	n/a	n/a
	Luxembourg	n/a	n/a
	Malta	n/a	n/a
	Netherlands	n/a	n/a
	New Zealand	n/a	n/a
	Norway	n/a	n/a
	Oman	n/a	n/a
	Portugal	n/a	n/a
	Qatar	n/a	n/a
	Saudi Arabia	n/a	n/a
	Singapore	n/a	n/a
	Spain	n/a	n/a
	Switzerland	n/a	n/a
	United Arab Emirates	n/a	n/a
	United Kingdom	n/a	n/a
	United States of America	n/a	n/a

SOURCE: World Bank, Enterprise Surveys (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
1	Switzerland	5.75	100.00
2	United States of America	5.49	91.44
3	Norway	5.44	89.72
4	Luxembourg	5.41	88.68
5	Singapore	5.39	88.11
6	Germany	5.38	87.54
7	Netherlands	5.36	87.00
8	Sweden	5.36	86.94
9	Malaysia	5.32	85.59
10	Finland	5.29	84.82
11	Denmark	5.22	82.20
12	Japan	5.20	81.50
13	Qatar	5.17	80.49
14	United Arab Emirates	5.15	80.12
15	Belgium	5.12	79.05
16	Austria	5.10	78.34
17	Iceland	5.06	76.86
18	New Zealand	4.99	74.68
19	Ireland	4.95	73.14
20	Australia	4.94	72.83
21	Canada	4.87	70.48
22	Israel	4.82	68.74
23	France	4.78	67.63
24	United Kingdom	4.77	67.26
25	Bahrain	4.71	65.25
26	Czech Republic	4.65	63.30
27	Indonesia	4.64	63.00
28	Estonia	4.64	62.76
29	Lithuania	4.56	60.01
30	Mauritius	4.54	59.37
31	India	4.51	58.46
32	Malta	4.50	58.23
33	China	4.50	58.03
34	Costa Rica	4.42	55.41
35	Philippines	4.37	53.63
36	South Africa	4.33	52.52
37	Guatemala	4.32	52.25
38	Korea, Rep.	4.32	52.01
39	Trinidad and Tobago	4.29	51.11
40	Kenya	4.26	50.00
41	Namibia	4.24	49.43
42	Rwanda	4.19	47.62
43	Thailand	4.19	47.58
44	Oman	4.18	47.28
45	Cyprus	4.16	46.74
46	Azerbaijan	4.15	46.41
47	Slovenia	4.15	46.37
48	Chile	4.13	45.74
49	Bhutan	4.12	45.27
50	Brunei Darussalam	4.11	45.16
51	Portugal	4.11	45.10
52	Jordan	4.10	44.73
53	Sri Lanka	4.08	44.12
54	Honduras	4.07	43.82
55	Latvia	4.07	43.62
56	Botswana	4.07	43.59
57	Brazil	4.03	42.51
58	Saudi Arabia	4.03	42.44
59	Tajikistan	4.03	42.24
60	Slovakia	4.02	41.91
61	Ghana	4.01	41.71
62	Panama	3.97	40.36
63	Poland	3.96	40.06
64	Kazakhstan	3.90	38.15
65	Viet Nam	3.88	37.27
66	Albania	3.83	35.73
67	Lebanon	3.81	34.86
68	Laos	3.80	34.75
69	Nigeria	3.79	34.32
70	Gambia	3.79	34.28
71	Malawi	3.78	33.92
72	Russian Federation	3.77	33.55
73	Mali	3.76	33.31
74	Mexico	3.76	33.18
75	Argentina	3.75	32.84
76	Cameroon	3.74	32.64
77	Greece	3.72	31.90
78	Cambodia	3.72	31.80
79	Spain	3.71	31.60
80	Kuwait	3.69	30.79
81	Liberia	3.67	30.36
82	Ukraine	3.67	30.22
82	Zimbabwe	3.67	30.22
84	Zambia	3.67	30.12
85	Uruguay	3.65	29.65
86	Colombia	3.64	29.31
87	Pakistan	3.64	29.21
88	Uganda	3.64	29.11
89	Senegal	3.63	28.91
90	Armenia	3.63	28.81
91	Italy	3.59	27.57
92	Iran, Islamic Rep.	3.59	27.54
93	Ethiopia	3.57	26.90
94	Ecuador	3.56	26.56
95	Venezuela, Bolivarian Rep.	3.52	25.39
96	Turkey	3.52	25.18
97	Hungary	3.51	24.85
98	Madagascar	3.51	24.82
99	Peru	3.51	24.78
100	Tunisia	3.50	24.68
101	Mongolia	3.47	23.54
102	Tanzania, United Rep.	3.46	23.07
103	Montenegro	3.45	22.73
104	Dominican Republic	3.44	22.40
105	Nicaragua	3.43	22.30
106	El Salvador	3.42	22.03
107	Serbia	3.42	21.89
108	Paraguay	3.38	20.48
109	Egypt	3.36	19.78
110	Morocco	3.35	19.68
111	Bulgaria	3.34	19.14
112	Bangladesh	3.32	18.60
113	Nepal	3.32	18.47
114	Lesotho	3.30	17.86
115	Romania	3.30	17.80
116	Burundi	3.29	17.66
117	Georgia	3.28	17.33
118	Moldova, Rep.	3.24	15.95
119	Kyrgyzstan	3.22	15.31
120	Congo, Dem. Rep.	3.21	14.98
121	Algeria	3.19	14.04
122	Croatia	3.14	12.42
123	Bosnia and Herzegovina	3.06	9.81
124	Mozambique	3.00	7.82
125	Yemen	2.77	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.

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
1	Denmark	6.19	100.00
2	Sweden	6.17	99.31
3	Norway	6.07	96.41
4	Finland	5.87	90.71
5	New Zealand	5.82	89.32
6	Netherlands	5.80	88.48
7	Switzerland	5.79	88.30
8	United States of America	5.72	86.22
9	Australia	5.69	85.44
10	Canada	5.64	84.08
11	Ireland	5.61	83.15
12	Belgium	5.55	81.41
13	Germany	5.55	81.30
14	Iceland	5.54	80.95
15	United Kingdom	5.53	80.80
16	Luxembourg	5.48	79.33
17	Singapore	5.46	78.81
18	Malaysia	5.39	76.64
19	Austria	5.38	76.35
20	United Arab Emirates	5.34	75.22
21	Qatar	5.32	74.78
22	Gambia	5.31	74.44
23	Israel	5.24	72.35
24	South Africa	5.01	65.72
25	Indonesia	4.98	64.91
26	Czech Republic	4.98	64.77
27	Estonia	4.97	64.45
28	Japan	4.86	61.32
29	Malta	4.85	61.06
30	Rwanda	4.82	60.19
31	France	4.79	59.35
32	Kenya	4.78	59.21
33	Costa Rica	4.74	57.93
34	Lithuania	4.72	57.27
35	Bahrain	4.67	56.02
36	Namibia	4.67	55.82
37	Nigeria	4.62	54.46
38	Chile	4.59	53.68
39	Mauritius	4.59	53.62
40	Philippines	4.59	53.56
41	India	4.55	52.40
42	Panama	4.51	51.27
43	China	4.51	51.22
44	Saudi Arabia	4.51	51.19
45	Brazil	4.5	50.96
46	Brunei Darussalam	4.50	50.93
47	Bhutan	4.49	50.72
48	Thailand	4.47	50.17
49	Trinidad and Tobago	4.47	50.14
50	Azerbaijan	4.47	49.97
51	Sri Lanka	4.46	49.91
52	Zambia	4.46	49.88
53	Botswana	4.46	49.77
54	Slovakia	4.45	49.57
55	Slovenia	4.44	49.13
56	Spain	4.44	49.10
57	Zimbabwe	4.42	48.76
58	Guatemala	4.41	48.29
59	Laos	4.40	48.12
60	Latvia	4.38	47.57
61	Argentina	4.35	46.76
62	Venezuela, Bolivarian Rep.	4.35	46.64
63	Mexico	4.34	46.27
64	Ghana	4.33	46.03
65	Uganda	4.33	45.92
66	Honduras	4.31	45.43
67	Kazakhstan	4.27	44.24
68	Colombia	4.26	44.04
69	Peru	4.25	43.86
70	Portugal	4.25	43.66
71	Oman	4.24	43.40
72	Uruguay	4.21	42.59
73	Korea, Rep.	4.21	42.47
74	Tajikistan	4.20	42.15
75	Russian Federation	4.18	41.57
76	Cyprus	4.16	41.20
77	Liberia	4.14	40.65
78	Poland	4.09	38.97
79	Albania	4.07	38.45
80	Dominican Republic	4.05	37.84
80	Malawi	4.05	37.84
82	Hungary	4.02	37.15
83	Ecuador	4.00	36.57
84	Serbia	3.99	36.13
85	Jordan	3.98	35.93
86	Greece	3.97	35.73
87	Tanzania, United Rep.	3.97	35.67
87	Ukraine	3.97	35.67
89	Viet Nam	3.97	35.64
90	Turkey	3.95	35.06
91	Morocco	3.95	35.03
92	Lebanon	3.92	34.28
93	Bulgaria	3.92	34.22
94	Pakistan	3.90	33.73
95	Georgia	3.90	33.64
96	Armenia	3.90	33.58
97	Burundi	3.88	32.92
98	Moldova, Rep.	3.86	32.46
99	Kuwait	3.84	31.76
100	Madagascar	3.82	31.38
101	El Salvador	3.82	31.33
102	Montenegro	3.80	30.80
103	Nepal	3.80	30.66
104	Cambodia	3.78	30.05
105	Nicaragua	3.77	29.73
106	Bangladesh	3.75	29.30
107	Croatia	3.74	28.92
108	Italy	3.73	28.58
109	Bosnia and Herzegovina	3.72	28.29
110	Egypt	3.70	27.74
111	Cameroon	3.64	25.94
112	Senegal	3.62	25.36
113	Tunisia	3.57	24.00
114	Congo, Dem. Rep.	3.56	23.62
115	Kyrgyzstan	3.53	22.96
116	Paraguay	3.53	22.84
117	Mozambique	3.53	22.81
118	Mali	3.52	22.73
119	Iran, Islamic Rep.	3.48	21.45
120	Romania	3.45	20.44
121	Ethiopia	3.39	18.93
122	Lesotho	3.27	15.32
123	Algeria	3.09	10.05
124	Mongolia	3.08	9.84
125	Yemen	2.74	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.

3.3.2 Personal rights

Personal rights indicator | 2017

Rank	Country	Value	Score
1	Denmark	97.89	100.00
2	Norway	96.32	98.10
3	Finland	95.77	97.44
4	Canada	94.32	95.68
5	New Zealand	94.08	95.39
6	Austria	93.93	95.21
7	Netherlands	93.60	94.81
8	Sweden	93.51	94.70
9	Australia	93.41	94.58
10	Ireland	93.09	94.19
11	Germany	92.75	93.78
12	Iceland	92.41	93.37
12	Luxembourg	92.41	93.37
14	Estonia	91.92	92.78
15	United Kingdom	90.76	91.38
16	Switzerland	90.74	91.35
17	Chile	89.66	90.05
18	Uruguay	89.54	89.90
19	Belgium	89.44	89.78
20	United States of America	88.98	89.22
21	Portugal	88.93	89.16
22	Malta	87.99	88.03
23	Czech Republic	86.91	86.72
24	France	86.03	85.66
24	Lithuania	86.03	85.66
26	Japan	85.66	85.21
27	Cyprus	84.95	84.35
28	Spain	84.67	84.01
29	Costa Rica	83.06	82.06
30	Mauritius	81.72	80.44
31	Ghana	80.10	78.48
32	Slovenia	79.87	78.21
33	Italy	79.67	77.96
34	Poland	79.59	77.87
35	Latvia	78.48	76.52
35	Slovakia	78.48	76.52
37	Israel	77.80	75.70
38	Trinidad and Tobago	75.40	72.80
39	Senegal	74.75	72.01
40	South Africa	74.71	71.96
41	Croatia	73.88	70.96
42	Peru	73.86	70.94
43	Greece	72.63	69.45
44	Korea, Rep.	72.43	69.21
45	India	72.3	69.05
46	Romania	71.83	68.48
47	Tunisia	71.74	68.37
48	Brazil	71.64	68.25
49	Panama	70.71	67.13
50	Mongolia	70.18	66.49
51	Serbia	69.43	65.58
52	Botswana	69.06	65.13
53	Bulgaria	68.17	64.05
54	Malawi	67.99	63.84
55	Argentina	67.51	63.26
56	Namibia	66.93	62.55
57	Mexico	65.87	61.27
58	Colombia	65.62	60.97
59	Georgia	64.85	60.04
60	Moldova, Rep.	64.77	59.94
61	Indonesia	64.54	59.66
62	El Salvador	64.26	59.33
63	Hungary	63.72	58.67
64	Philippines	63.31	58.18
65	Ukraine	62.99	57.79
66	Dominican Republic	62.20	56.83
67	Montenegro	62.05	56.65
68	Liberia	61.87	56.43
69	Bhutan	61.46	55.94
70	Singapore	60.85	55.20
71	Albania	60.53	54.81
72	Lesotho	60.18	54.39
72	Paraguay	60.18	54.39
74	Madagascar	57.64	51.32
75	Nepal	55.76	49.04
76	Guatemala	54.54	47.57
77	Sri Lanka	53.60	46.43
78	Nigeria	53.13	45.86
79	Mozambique	53.05	45.77
80	Bosnia and Herzegovina	52.93	45.62
81	Kenya	52.59	45.21
82	Mali	52.08	44.59
83	Tanzania, United Rep.	50.86	43.12
84	Lebanon	50.22	42.34
85	Honduras	50.00	42.08
86	Zambia	49.63	41.63
87	Ecuador	49.27	41.19
88	Kyrgyzstan	48.60	40.38
89	Pakistan	46.18	37.46
90	Morocco	45.36	36.47
91	Qatar	45.05	36.09
92	Jordan	44.56	35.50
93	Malaysia	43.57	34.30
94	Armenia	43.06	33.68
95	Uganda	41.77	32.12
96	Nicaragua	40.73	30.87
97	Kuwait	40.33	30.38
98	Cameroon	38.25	27.87
99	Cambodia	37.61	27.09
100	Bangladesh	37.53	27.00
101	Thailand	37.30	26.72
102	Oman	37.12	26.50
103	Algeria	36.21	25.40
104	Turkey	35.69	24.77
105	United Arab Emirates	31.01	19.11
106	Venezuela, Bolivarian Rep.	30.50	18.49
107	Congo, Dem. Rep.	29.96	17.84
108	Burundi	28.49	16.06
109	Rwanda	28.38	15.93
110	Egypt	28.14	15.64
111	Kazakhstan	27.97	15.43
112	Bahrain	27.24	14.55
113	Yemen	26.64	13.82
114	Zimbabwe	26.09	13.16
115	Russian Federation	25.42	12.35
116	Saudi Arabia	25.17	12.05
117	Gambia	24.76	11.55
118	Viet Nam	23.71	10.28
119	Ethiopia	20.12	5.94
120	Laos	19.78	5.53
121	Iran, Islamic Rep.	18.62	4.12
122	Azerbaijan	18.40	3.86
123	Tajikistan	16.35	1.38
124	China	15.21	0.00
	Brunei Darussalam	n/a	n/a

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
1	Norway	6.65	100.00
2	Netherlands	6.59	98.27
3	Iceland	6.58	97.98
4	Israel	6.53	96.54
5	Sweden	6.52	96.31
6	United Kingdom	6.50	95.51
7	Singapore	6.43	93.60
8	United Arab Emirates	6.38	92.31
8	United States of America	6.38	92.31
10	Finland	6.32	90.41
11	Canada	6.32	90.32
12	Denmark	6.27	88.88
13	Thailand	6.25	88.45
14	Malta	6.24	88.13
15	Ireland	6.23	87.81
16	Bahrain	6.21	87.38
17	Luxembourg	6.20	86.95
18	Lithuania	6.18	86.49
19	Belgium	6.18	86.32
20	Costa Rica	6.17	86.20
21	Philippines	6.16	85.88
22	Czech Republic	6.15	85.62
23	Malaysia	6.14	85.34
24	Azerbaijan	6.14	85.22
25	Estonia	6.13	85.02
26	Qatar	6.11	84.53
27	Jordan	6.10	84.01
28	Australia	6.08	83.46
29	Chile	6.05	82.77
30	New Zealand	6.05	82.60
31	Panama	6.04	82.28
32	Brunei Darussalam	6.02	81.71
33	Saudi Arabia	6.02	81.68
34	Brazil	6.01	81.56
35	Kuwait	6.00	81.22
36	Korea, Rep.	5.99	81.01
37	Japan	5.99	80.90
38	Italy	5.98	80.70
39	Kenya	5.94	79.40
40	South Africa	5.92	79.03
41	Switzerland	5.92	78.97
42	Guatemala	5.92	78.91
43	Montenegro	5.91	78.57
44	France	5.89	78.16
45	Egypt	5.89	77.99
46	Slovenia	5.84	76.69
47	Uruguay	5.84	76.52
48	Portugal	5.81	75.80
49	Turkey	5.80	75.42
50	Tunisia	5.80	75.40
51	Spain	5.80	75.37
52	Indonesia	5.79	75.14
53	Mauritius	5.78	75.02
54	Georgia	5.78	74.99
55	Albania	5.75	74.01
56	Germany	5.74	73.75
57	Gambia	5.74	73.67
58	Romania	5.70	72.69
59	Trinidad and Tobago	5.69	72.28
60	Latvia	5.68	72.08
61	Austria	5.66	71.54
62	Namibia	5.64	70.93
63	Argentina	5.64	70.84
64	Mongolia	5.63	70.70
65	Cambodia	5.63	70.53
65	Dominican Republic	5.63	70.53
67	Bulgaria	5.63	70.44
68	Venezuela, Bolivarian Rep.	5.61	69.92
69	Poland	5.60	69.84
70	Honduras	5.59	69.35
70	Serbia	5.59	69.35
72	Lebanon	5.58	69.26
73	Bosnia and Herzegovina	5.56	68.48
74	Mexico	5.53	67.82
75	Armenia	5.53	67.70
76	Morocco	5.53	67.62
77	Slovakia	5.52	67.47
78	Moldova, Rep.	5.49	66.55
79	Nigeria	5.49	66.52
80	Oman	5.47	66.06
81	Colombia	5.44	65.00
82	Senegal	5.43	64.85
83	Viet Nam	5.43	64.77
84	Ecuador	5.42	64.42
85	Russian Federation	5.38	63.41
86	Croatia	5.37	63.07
87	El Salvador	5.35	62.55
88	Ukraine	5.35	62.49
89	Cyprus	5.30	61.02
90	Algeria	5.25	59.64
91	Sri Lanka	5.25	59.61
92	Ghana	5.23	59.12
93	Rwanda	5.16	57.16
94	Botswana	5.16	57.02
95	Peru	5.15	56.73
96	Paraguay	5.15	56.70
97	Zambia	5.15	56.64
98	Kazakhstan	5.14	56.38
99	Bhutan	5.14	56.32
100	Greece	5.11	55.66
101	Madagascar	5.08	54.74
102	Cameroon	5.04	53.59
103	Nicaragua	5.02	53.10
104	Hungary	4.99	52.09
105	Zimbabwe	4.98	51.97
106	Laos	4.96	51.22
107	Uganda	4.93	50.53
108	Nepal	4.90	49.50
109	India	4.86	48.52
110	Tanzania, United Rep.	4.81	46.93
111	Bangladesh	4.79	46.33
112	Iran, Islamic Rep.	4.71	43.94
113	Mozambique	4.69	43.39
114	Yemen	4.68	43.16
115	China	4.60	40.97
116	Pakistan	4.48	37.57
117	Liberia	4.47	37.25
118	Congo, Dem. Rep.	4.36	33.94
119	Mali	4.30	32.35
120	Tajikistan	4.25	30.77
121	Kyrgyzstan	4.24	30.65
122	Malawi	4.19	29.18
123	Ethiopia	3.80	17.83
124	Burundi	3.65	13.66
125	Lesotho	3.18	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.

3.3.4 Use of virtual professional networks

LinkedIn users (per 1,000 labour force) | 2016

Rank	Country	Value	Score
1	United States of America	693.18	100.00
2	Iceland	642.66	92.67
3	Netherlands	610.45	87.99
4	Denmark	594.96	85.74
5	Malta	568.69	81.93
6	Ireland	560.75	80.78
7	Canada	553.15	79.67
8	Luxembourg	532.06	76.61
9	Australia	530.70	76.41
10	United Kingdom	529.16	76.19
11	New Zealand	521.20	75.03
12	Singapore	472.48	67.96
13	Norway	461.27	66.33
14	Belgium	459.02	66.01
15	Sweden	421.78	60.60
16	Portugal	353.67	50.71
17	Trinidad and Tobago	329.61	47.22
18	Chile	329.40	47.19
19	Israel	328.19	47.02
20	Switzerland	325.83	46.67
21	United Arab Emirates	311.24	44.56
22	France	307.29	43.98
23	Italy	301.16	43.09
24	Spain	290.48	41.54
25	Cyprus	259.67	37.07
26	Finland	256.77	36.65
27	Uruguay	239.88	34.20
28	Qatar	230.78	32.88
29	Argentina	216.56	30.81
30	Bahrain	215.28	30.63
31	Costa Rica	215.02	30.59
32	Mauritius	208.28	29.61
33	Slovenia	198.42	28.18
34	Brazil	189.47	26.88
35	Croatia	188.98	26.81
36	South Africa	187.34	26.57
37	Lebanon	186.09	26.39
38	Latvia	184.67	26.18
39	Estonia	184.08	26.10
40	Panama	180.82	25.62
41	Greece	180.18	25.53
42	Brunei Darussalam	173.23	24.52
43	Colombia	171.63	24.29
44	Jordan	167.37	23.67
45	Kuwait	161.09	22.76
46	Czech Republic	155.29	21.92
47	Malaysia	149.17	21.03
48	Romania	147.51	20.79
49	Ecuador	144.61	20.37
50	Lithuania	139.38	19.61
51	Austria	137.01	19.26
52	Montenegro	134.99	18.97
53	Turkey	133.88	18.81
54	Venezuela, Bolivarian Rep.	132.67	18.63
55	Mexico	128.64	18.05
56	Bulgaria	127.62	17.90
57	Saudi Arabia	127.40	17.87
58	Botswana	122.14	17.10
59	Oman	120.71	16.90
60	Hungary	119.99	16.79
61	Namibia	117.25	16.39
62	Tunisia	110.90	15.47
63	Slovakia	109.86	15.32
64	Albania	107.81	15.02
65	Serbia	99.39	13.80
66	Germany	95.47	13.23
67	Dominican Republic	91.98	12.73
68	El Salvador	89.06	12.30
69	Poland	83.13	11.44
70	Bosnia and Herzegovina	75.22	10.29
71	Morocco	73.55	10.05
72	Bhutan	68.95	9.38
73	Nicaragua	68.73	9.35
74	Guatemala	68.63	9.34
75	Georgia	64.20	8.69
76	Russian Federation	61.90	8.36
77	Philippines	59.95	8.08
78	Sri Lanka	59.83	8.06
79	Paraguay	59.09	7.95
80	Honduras	59.04	7.94
81	Armenia	58.29	7.84
82	Ukraine	57.65	7.74
83	India	57.22	7.68
84	Kenya	56.10	7.52
85	Algeria	52.63	7.01
86	Mongolia	51.85	6.90
87	Ghana	50.07	6.64
88	Egypt	49.35	6.54
89	Kazakhstan	45.81	6.02
90	Senegal	37.68	4.84
91	Pakistan	35.04	4.46
92	Zimbabwe	35.02	4.46
93	Gambia	34.25	4.35
94	Indonesia	32.02	4.02
95	Nigeria	31.53	3.95
96	Azerbaijan	28.56	3.52
97	Cameroon	28.55	3.52
98	Lesotho	28.46	3.51
99	Zambia	27.81	3.41
100	Thailand	24.80	2.97
101	Liberia	24.33	2.91
102	Uganda	21.64	2.52
103	Japan	20.91	2.41
104	Cambodia	17.96	1.98
105	Nepal	17.50	1.91
106	Kyrgyzstan	17.23	1.88
107	Viet Nam	16.03	1.70
108	Rwanda	15.48	1.62
109	Peru	14.78	1.52
110	Mali	13.05	1.27
111	Mozambique	11.95	1.11
112	Yemen	11.20	1.00
113	Malawi	10.81	0.94
114	Bangladesh	10.40	0.88
115	China	9.05	0.69
116	Madagascar	6.56	0.33
117	Tajikistan	5.51	0.17
118	Burundi	5.31	0.15
119	Congo, Dem. Rep.	4.54	0.03
120	Ethiopia	4.31	0.00
	Iran, Islamic Rep.	n/a	n/a
	Korea, Rep.	n/a	n/a
	Laos	n/a	n/a
	Moldova, Rep.	n/a	n/a
	Tanzania, United Rep.	n/a	n/a

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
1	Switzerland	5.76	100.00
2	Sweden	5.70	97.83
3	United States of America	5.66	96.21
4	Norway	5.64	95.41
5	Germany	5.57	92.80
6	Netherlands	5.48	89.75
7	Israel	5.47	89.45
8	Finland	5.43	87.95
9	Iceland	5.37	85.74
10	Malaysia	5.34	84.49
11	Denmark	5.33	84.27
12	New Zealand	5.27	81.88
13	Austria	5.21	79.75
14	Qatar	5.19	79.02
15	Belgium	5.17	78.32
16	Singapore	5.14	76.99
17	Luxembourg	5.12	76.33
18	Japan	5.09	75.16
19	United Arab Emirates	5.08	75.01
20	United Kingdom	5.02	72.66
21	Ireland	4.99	71.81
22	Canada	4.91	68.76
23	Australia	4.90	68.50
24	Indonesia	4.76	63.36
25	Estonia	4.62	58.18
26	Azerbaijan	4.61	57.81
27	France	4.58	56.63
28	Bahrain	4.55	55.60
29	India	4.53	54.58
30	China	4.51	54.06
31	Kenya	4.47	52.66
32	Czech Republic	4.45	51.67
32	Rwanda	4.45	51.67
34	Lithuania	4.44	51.49
35	Philippines	4.43	51.19
36	Korea, Rep.	4.38	49.17
37	Tajikistan	4.36	48.66
38	South Africa	4.35	47.96
39	Malta	4.28	45.42
40	Laos	4.24	44.10
41	Slovenia	4.21	43.00
42	Guatemala	4.21	42.85
43	Mauritius	4.20	42.78
44	Nigeria	4.18	41.75
45	Cameroon	4.18	41.71
46	Albania	4.16	41.20
47	Costa Rica	4.16	41.16
48	Senegal	4.15	40.79
49	Thailand	4.14	40.39
50	Uganda	4.14	40.35
51	Ukraine	4.14	40.24
52	Mongolia	4.12	39.80
53	Oman	4.10	38.81
54	Russian Federation	4.09	38.70
55	Cambodia	4.08	38.26
56	Armenia	4.08	38.07
57	Bhutan	4.07	37.93
58	Jordan	4.07	37.89
59	Panama	4.07	37.82
60	Saudi Arabia	4.06	37.34
61	Kazakhstan	4.04	36.57
62	Georgia	4.02	36.05
63	Portugal	4.01	35.76
64	Lebanon	4.01	35.58
65	Gambia	4.00	35.32
66	Congo, Dem. Rep.	4.00	35.10
67	Montenegro	3.99	35.06
68	Brazil	3.93	32.60
69	Morocco	3.92	32.49
70	Botswana	3.92	32.41
71	Liberia	3.92	32.16
72	Madagascar	3.90	31.64
73	Ghana	3.90	31.46
74	Slovakia	3.89	31.31
75	Namibia	3.89	31.20
76	Burundi	3.88	31.02
77	Sri Lanka	3.88	30.69
78	Mali	3.87	30.58
79	Cyprus	3.87	30.50
80	Turkey	3.86	30.10
81	Pakistan	3.85	29.77
82	Honduras	3.82	28.78
83	Mexico	3.82	28.63
84	Bulgaria	3.80	27.89
85	Italy	3.78	27.34
86	Venezuela, Bolivarian Rep.	3.78	27.23
87	Tanzania, United Rep.	3.78	27.20
88	Colombia	3.77	26.83
89	Zambia	3.77	26.64
90	Chile	3.75	26.24
91	Peru	3.74	25.76
92	Kyrgyzstan	3.73	25.36
93	Greece	3.73	25.32
93	Uruguay	3.73	25.32
95	Serbia	3.72	25.06
96	Moldova, Rep.	3.72	24.99
97	Brunei Darussalam	3.71	24.66
98	Argentina	3.70	24.29
99	Ethiopia	3.63	21.68
100	Kuwait	3.62	21.24
101	Latvia	3.61	21.10
102	Zimbabwe	3.59	20.18
103	Viet Nam	3.58	19.85
104	Tunisia	3.58	19.81
105	Romania	3.58	19.77
106	Nepal	3.56	19.07
107	Spain	3.55	18.85
108	Bosnia and Herzegovina	3.53	18.04
109	Ecuador	3.53	18.01
110	Egypt	3.51	17.09
111	Dominican Republic	3.50	16.87
112	Croatia	3.50	16.72
113	Iran, Islamic Rep.	3.49	16.54
114	Nicaragua	3.44	14.85
115	Paraguay	3.44	14.70
116	Mozambique	3.42	13.82
117	Bangladesh	3.42	13.78
118	Trinidad and Tobago	3.39	12.83
119	Hungary	3.35	11.28
120	Poland	3.33	10.77
121	Algeria	3.31	10.07
122	Malawi	3.29	9.26
123	El Salvador	3.25	7.72
124	Lesotho	3.11	2.72
125	Yemen	3.04	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.

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
1	United States of America	5.35	100.00
2	Germany	5.18	94.33
3	Malaysia	5.17	93.94
4	Finland	5.06	89.93
5	Netherlands	4.93	85.35
6	Switzerland	4.91	84.68
7	Israel	4.89	83.87
8	Sweden	4.84	82.04
9	Qatar	4.80	80.67
10	United Arab Emirates	4.75	79.12
11	United Kingdom	4.67	76.23
12	Singapore	4.52	70.81
13	Norway	4.51	70.42
14	New Zealand	4.50	70.11
15	Indonesia	4.47	69.19
16	Luxembourg	4.46	68.70
17	Iceland	4.42	67.36
18	China	4.40	66.87
19	Azerbaijan	4.37	65.49
20	Ireland	4.30	63.17
21	Belgium	4.28	62.43
22	India	4.23	60.70
23	Austria	4.19	59.44
24	Denmark	4.14	57.57
25	Japan	4.10	56.09
26	Canada	4.08	55.49
27	Korea, Rep.	4.04	54.15
28	Kenya	3.90	49.15
29	Tajikistan	3.82	46.37
30	Rwanda	3.81	46.02
30	Saudi Arabia	3.81	46.02
32	Laos	3.79	45.21
33	South Africa	3.77	44.65
34	France	3.76	44.33
35	Estonia	3.75	43.84
36	Jordan	3.74	43.56
37	Bahrain	3.74	43.52
38	Panama	3.72	42.89
39	Costa Rica	3.70	42.15
40	Pakistan	3.68	41.34
41	Russian Federation	3.67	40.85
42	Australia	3.63	39.61
43	Portugal	3.63	39.58
44	Lithuania	3.62	39.33
45	Mexico	3.61	38.98
46	Egypt	3.60	38.63
47	Slovakia	3.59	38.20
48	Chile	3.56	37.04
49	Bhutan	3.55	36.80
50	Ghana	3.54	36.51
51	Czech Republic	3.54	36.48
52	Oman	3.52	35.60
53	Ukraine	3.51	35.32
54	Kazakhstan	3.51	35.25
55	Philippines	3.51	35.21
56	Thailand	3.50	35.18
57	Guatemala	3.49	34.51
58	Venezuela, Bolivarian Rep.	3.47	33.91
59	Colombia	3.46	33.45
60	Malta	3.45	33.38
61	Albania	3.43	32.64
62	Ethiopia	3.42	32.36
63	Tanzania, United Rep.	3.42	32.22
64	Bulgaria	3.42	32.18
65	Argentina	3.41	31.94
66	Sri Lanka	3.41	31.69
67	Slovenia	3.39	31.16
68	Brazil	3.38	30.95
69	Italy	3.38	30.92
70	Mali	3.38	30.77
71	Cambodia	3.36	30.04
72	Mauritius	3.35	29.65
73	Spain	3.30	28.06
74	Viet Nam	3.30	27.99
75	Montenegro	3.28	27.32
76	Senegal	3.28	27.15
77	Namibia	3.27	27.01
78	Armenia	3.27	26.90
79	Zambia	3.26	26.55
80	Brunei Darussalam	3.25	26.30
81	Botswana	3.24	25.77
82	Lebanon	3.22	25.14
83	Peru	3.21	24.93
84	Uruguay	3.21	24.89
85	Kuwait	3.20	24.58
86	Uganda	3.19	24.26
87	Lesotho	3.18	23.73
88	Liberia	3.15	22.64
88	Turkey	3.15	22.64
90	Madagascar	3.13	21.97
91	Cyprus	3.11	21.37
92	Gambia	3.10	20.92
93	Dominican Republic	3.10	20.88
94	El Salvador	3.07	19.93
95	Serbia	3.07	19.89
96	Honduras	3.04	18.80
97	Nepal	3.03	18.52
98	Latvia	3.01	17.61
99	Burundi	3.00	17.46
100	Georgia	2.99	16.94
101	Cameroon	2.98	16.76
102	Greece	2.97	16.51
103	Congo, Dem. Rep.	2.97	16.44
104	Mozambique	2.96	16.09
105	Iran, Islamic Rep.	2.96	15.85
106	Hungary	2.93	14.86
107	Ecuador	2.92	14.68
108	Morocco	2.91	14.33
109	Paraguay	2.89	13.63
110	Poland	2.87	12.75
111	Algeria	2.85	12.11
112	Nigeria	2.83	11.48
113	Bosnia and Herzegovina	2.79	9.86
114	Kyrgyzstan	2.78	9.79
115	Romania	2.77	9.40
116	Bangladesh	2.76	9.08
117	Malawi	2.74	8.38
118	Moldova, Rep.	2.67	5.92
119	Nicaragua	2.64	4.89
120	Croatia	2.63	4.40
121	Mongolia	2.55	1.48
122	Trinidad and Tobago	2.53	0.88
123	Tunisia	2.53	0.70
124	Zimbabwe	2.51	0.28
125	Yemen	2.51	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.

Pillar 4

Retain

4.1.1 Pension system

Workforce contributing to pension system (%) | 2012

Rank	Country	Value	Score
1	Luxembourg	100.00	100.00
2	Lithuania	99.00	98.98
3	Czech Republic	95.00	94.90
3	Japan	95.00	94.90
3	Switzerland	95.00	94.90
6	Austria	94.00	93.88
6	Estonia	94.00	93.88
8	Denmark	93.00	92.86
8	Latvia	93.00	92.86
8	Norway	93.00	92.86
8	United Kingdom	93.00	92.86
12	Hungary	92.00	91.84
12	Portugal	92.00	91.84
12	United States of America	92.00	91.84
15	Australia	91.00	90.82
15	Belgium	91.00	90.82
15	Netherlands	91.00	90.82
18	Finland	90.00	89.80
18	Italy	90.00	89.80
20	Israel	89.10	88.88
21	Ireland	89.00	88.78
21	Sweden	89.00	88.78
23	France	87.00	86.73
23	Germany	87.00	86.73
23	Iceland	87.00	86.73
23	Slovenia	87.00	86.73
27	Greece	86.00	85.71
28	Croatia	83.00	82.65
29	Poland	81.00	80.61
30	Bulgaria	79.00	78.57
30	Slovakia	79.00	78.57
32	Uruguay	78.00	77.55
33	Bosnia and Herzegovina	71.00	70.41
33	Trinidad and Tobago	71.00	70.41
35	Spain	69.00	68.37
36	Romania	68.00	67.35
37	Canada	67.00	66.33
37	Russian Federation	67.00	66.33
39	Brunei Darussalam	66.00	65.31
40	Ukraine	65.00	64.29
41	Kazakhstan	63.00	62.24
42	Singapore	62.00	61.22
43	Chile	60.00	59.18
44	Moldova, Rep.	59.00	58.16
44	Turkey	59	58.16
46	Costa Rica	56.00	55.10
47	Brazil	55.00	54.08
47	Egypt	55.00	54.08
49	Mauritius	53.00	52.04
50	Korea, Rep.	49.00	47.96
50	Malaysia	49.00	47.96
50	Tunisia	49.00	47.96
53	Serbia	45.00	43.88
54	Argentina	42.00	40.82
55	Kyrgyzstan	40.00	38.78
56	Albania	38.00	36.73
56	Jordan	38.00	36.73
58	Algeria	37.00	35.71
59	Azerbaijan	35.00	33.67
59	Lebanon	35.00	33.67
61	Iran, Islamic Rep.	34.00	32.65
61	Venezuela, Bolivarian Rep.	34.00	32.65
63	Mongolia	33.00	31.63
64	Armenia	32.00	30.61
65	Colombia	31.00	29.59
66	Georgia	29.00	27.55
67	China	27.00	25.51
67	Mexico	27.00	25.51
69	Dominican Republic	26.00	24.49
69	Ecuador	26.00	24.49
71	Philippines	25.00	23.47
72	Morocco	24.00	22.45
72	Sri Lanka	24.00	22.45
74	El Salvador	23.00	21.43
74	Thailand	23.00	21.43
76	Nicaragua	22.00	20.41
76	Peru	22.00	20.41
78	Bahrain	20.00	18.37
78	Guatemala	20.00	18.37
78	Zimbabwe	20.00	18.37
81	Viet Nam	19.00	17.35
82	Honduras	17.00	15.31
83	Cameroon	16.00	14.29
84	Bhutan	14.00	12.24
84	Congo, Dem. Rep.	14.00	12.24
86	Paraguay	12.00	10.20
87	Zambia	11.00	9.18
88	India	10.00	8.16
88	Namibia	10.00	8.16
88	Uganda	10.00	8.16
88	Yemen	10.00	8.16
92	Botswana	9.00	7.14
93	Ghana	8.00	6.12
93	Kenya	8.00	6.12
93	Nigeria	8.00	6.12
96	Indonesia	7.00	5.10
96	Mali	7.00	5.10
98	South Africa	6.00	4.08
99	Madagascar	5.30	3.37
100	Rwanda	5.00	3.06
100	Senegal	5.00	3.06
102	Qatar	4.40	2.45
103	Burundi	4.00	2.04
103	Lesotho	4.00	2.04
103	Pakistan	4.00	2.04
103	Tanzania, United Rep.	4.00	2.04
107	Bangladesh	3.00	1.02
107	Gambia	3.00	1.02
107	Nepal	3.00	1.02
110	Mozambique	2.00	0.00
	Cambodia	n/a	n/a
	Cyprus	n/a	n/a
	Ethiopia	n/a	n/a
	Kuwait	n/a	n/a
	Laos	n/a	n/a
	Liberia	n/a	n/a
	Malawi	n/a	n/a
	Malta	n/a	n/a
	Montenegro	n/a	n/a
	New Zealand	n/a	n/a
	Oman	n/a	n/a
	Panama	n/a	n/a
	Saudi Arabia	n/a	n/a
	Tajikistan	n/a	n/a
	United Arab Emirates	n/a	n/a

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
1	Norway	6.29	100.00
2	Austria	6.17	97.17
3	Finland	6.16	97.07
4	Luxembourg	6.16	97.05
5	Belgium	6.13	96.34
6	France	6.12	96.08
7	Denmark	6.11	95.92
8	Switzerland	6.05	94.39
9	Netherlands	5.86	90.04
10	New Zealand	5.69	85.85
11	Sweden	5.63	84.41
12	Iceland	5.62	84.27
13	Canada	5.61	83.93
14	Australia	5.55	82.68
15	Spain	5.49	81.32
16	Germany	5.44	80.09
17	Ireland	5.36	78.13
18	United Kingdom	5.20	74.45
19	United States of America	5.20	74.36
20	Qatar	5.19	74.19
21	Japan	5.12	72.47
22	Malaysia	5.10	72.00
23	Uruguay	5.01	69.85
24	Malta	4.99	69.33
25	Czech Republic	4.93	67.94
26	Bahrain	4.87	66.53
27	United Arab Emirates	4.84	65.79
28	Portugal	4.75	63.69
29	Slovenia	4.67	61.83
30	Saudi Arabia	4.65	61.34
31	Kuwait	4.62	60.58
32	Israel	4.58	59.85
33	Azerbaijan	4.52	58.27
34	Rwanda	4.51	58.01
35	China	4.50	57.75
36	Oman	4.47	57.11
37	Costa Rica	4.45	56.66
38	Singapore	4.36	54.54
39	Indonesia	4.30	53.17
40	Tajikistan	4.25	51.95
41	India	4.23	51.40
42	Estonia	4.18	50.32
43	Italy	4.11	48.69
44	Bhutan	4.09	48.20
45	Turkey	4.07	47.79
46	Cyprus	4.06	47.58
47	Gambia	4.06	47.39
48	Jordan	4.06	47.37
49	Mauritius	4.04	47.04
50	Chile	4.02	46.45
51	Brunei Darussalam	3.95	44.89
52	Thailand	3.94	44.56
53	Namibia	3.88	43.17
54	Romania	3.87	42.98
55	Panama	3.84	42.20
56	Korea, Rep.	3.83	42.06
57	Slovakia	3.81	41.61
58	Botswana	3.80	41.31
59	Iran, Islamic Rep.	3.78	40.95
60	Viet Nam	3.76	40.34
61	Tanzania, United Rep.	3.76	40.32
62	Nicaragua	3.71	39.33
63	Argentina	3.71	39.30
64	Laos	3.70	39.02
65	Latvia	3.68	38.59
66	Algeria	3.67	38.31
67	Trinidad and Tobago	3.67	38.22
68	Ecuador	3.66	38.03
69	Brazil	3.60	36.66
70	Ghana	3.60	36.52
71	South Africa	3.56	35.74
72	Kazakhstan	3.55	35.55
73	Kenya	3.54	35.27
73	Zambia	3.54	35.27
75	Mongolia	3.51	34.47
76	Ethiopia	3.46	33.38
77	Sri Lanka	3.45	33.12
78	Russian Federation	3.43	32.70
79	Mali	3.43	32.65
80	Pakistan	3.37	31.14
81	Colombia	3.35	30.71
82	Bulgaria	3.34	30.43
83	Montenegro	3.33	30.34
84	Lesotho	3.32	29.98
85	Egypt	3.31	29.87
85	Ukraine	3.31	29.87
87	Mexico	3.30	29.58
88	Lithuania	3.27	28.87
89	Tunisia	3.22	27.62
90	Armenia	3.20	27.13
91	Croatia	3.16	26.35
92	Senegal	3.16	26.26
93	Morocco	3.12	25.19
94	Albania	3.08	24.35
95	Kyrgyzstan	3.07	24.06
95	Philippines	3.07	24.06
97	Greece	3.07	24.02
98	Mozambique	3.05	23.73
99	Peru	3.04	23.43
100	Liberia	3.04	23.38
101	Guatemala	3.00	22.43
102	Dominican Republic	2.98	21.92
103	Hungary	2.96	21.49
104	Cambodia	2.94	21.09
105	Serbia	2.92	20.57
106	Uganda	2.88	19.72
107	Paraguay	2.84	18.78
107	Poland	2.84	18.78
109	Cameroon	2.83	18.45
110	Honduras	2.82	18.12
111	Moldova, Rep.	2.78	17.34
112	Georgia	2.75	16.51
113	El Salvador	2.68	15.03
114	Lebanon	2.66	14.46
115	Malawi	2.63	13.64
116	Burundi	2.62	13.56
117	Bosnia and Herzegovina	2.57	12.36
118	Madagascar	2.56	12.01
119	Nepal	2.55	11.84
120	Congo, Dem. Rep.	2.55	11.82
121	Bangladesh	2.40	8.23
122	Venezuela, Bolivarian Rep.	2.18	3.14
123	Zimbabwe	2.16	2.74
124	Nigeria	2.08	0.73
125	Yemen	2.05	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.

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
1	Switzerland	5.96	100.00
2	United Arab Emirates	5.85	97.30
3	United States of America	5.74	94.94
4	Norway	5.46	88.43
5	Singapore	5.46	88.31
6	United Kingdom	5.34	85.56
7	Netherlands	5.25	83.58
8	Luxembourg	5.19	82.05
9	Qatar	5.17	81.70
10	Finland	5.10	80.06
11	Malaysia	5.09	79.88
12	Germany	5.07	79.39
13	Chile	5.02	78.24
14	Canada	5.00	77.75
15	Iceland	4.98	77.29
16	Sweden	4.94	76.44
17	Rwanda	4.90	75.44
18	Israel	4.76	72.19
19	Denmark	4.67	70.18
20	Ireland	4.66	69.92
21	New Zealand	4.63	69.16
22	Australia	4.62	68.93
23	India	4.59	68.33
24	Costa Rica	4.55	67.38
25	Azerbaijan	4.54	67.04
26	Saudi Arabia	4.53	66.97
27	Panama	4.51	66.44
28	Korea, Rep.	4.46	65.23
29	Malta	4.46	65.19
30	Bahrain	4.43	64.68
31	Indonesia	4.34	62.44
32	Belgium	4.33	62.39
33	China	4.33	62.37
34	Austria	4.32	62.02
35	Oman	4.17	58.67
36	Bhutan	4.08	56.62
37	Kenya	3.98	54.17
38	Gambia	3.97	54.05
39	Thailand	3.97	53.89
40	Laos	3.92	52.83
41	Ghana	3.91	52.67
42	Japan	3.91	52.62
43	Guatemala	3.90	52.37
44	Tajikistan	3.88	51.91
45	Brazil	3.78	49.67
46	Argentina	3.74	48.67
47	Mauritius	3.72	48.26
48	Cambodia	3.69	47.56
49	Czech Republic	3.69	47.49
50	Peru	3.68	47.22
51	Namibia	3.68	47.17
52	Brunei Darussalam	3.67	46.99
53	Botswana	3.66	46.75
53	Cyprus	3.66	46.75
55	Philippines	3.60	45.39
56	Pakistan	3.56	44.49
57	Russian Federation	3.53	43.91
58	Viet Nam	3.51	43.40
59	Mexico	3.50	43.08
60	Portugal	3.50	43.04
61	Trinidad and Tobago	3.49	42.80
62	Colombia	3.47	42.50
63	Paraguay	3.44	41.81
64	Sri Lanka	3.43	41.42
65	Jordan	3.42	41.35
66	Liberia	3.42	41.23
67	Estonia	3.42	41.21
68	Nigeria	3.39	40.68
69	Ethiopia	3.37	40.17
70	Honduras	3.36	39.99
71	France	3.27	37.86
71	Tanzania, United Rep.	3.27	37.86
73	Lesotho	3.27	37.84
74	Spain	3.27	37.72
75	South Africa	3.25	37.40
75	Zambia	3.25	37.40
77	Kazakhstan	3.24	37.05
78	Malawi	3.23	36.91
79	Turkey	3.23	36.82
80	Uruguay	3.22	36.57
81	Bangladesh	3.21	36.41
82	Kuwait	3.20	36.27
83	Senegal	3.18	35.67
84	Poland	3.17	35.60
85	Morocco	3.16	35.16
86	Mozambique	3.13	34.60
87	Slovenia	3.12	34.30
88	Mali	3.11	34.05
89	Ecuador	3.07	33.29
90	Armenia	3.05	32.62
90	Nicaragua	3.05	32.62
92	Dominican Republic	3.04	32.57
93	Georgia	3.02	32.09
94	Montenegro	2.99	31.25
95	Uganda	2.98	31.07
96	Egypt	2.95	30.40
97	Iran, Islamic Rep.	2.93	29.98
98	Lebanon	2.89	28.99
99	Italy	2.87	28.48
100	Madagascar	2.83	27.67
101	Congo, Dem. Rep.	2.78	26.50
102	Lithuania	2.73	25.29
103	Tunisia	2.69	24.30
104	Nepal	2.67	24.05
105	Cameroon	2.61	22.52
106	Albania	2.60	22.34
107	El Salvador	2.54	21.04
108	Latvia	2.54	20.91
109	Bulgaria	2.52	20.49
110	Burundi	2.50	20.05
111	Greece	2.48	19.64
112	Kyrgyzstan	2.48	19.52
113	Algeria	2.46	19.08
114	Zimbabwe	2.45	18.97
115	Slovakia	2.45	18.90
116	Hungary	2.43	18.41
117	Mongolia	2.42	18.18
118	Ukraine	2.19	12.94
119	Yemen	2.12	11.20
120	Croatia	2.08	10.23
121	Romania	2.01	8.59
122	Moldova, Rep.	1.91	6.40
123	Serbia	1.84	4.83
124	Bosnia and Herzegovina	1.80	3.93
125	Venezuela, Bolivarian Rep.	1.63	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.

4.2.1 Environmental performance

Environmental Performance Index | 2018

Rank	Country	Value	Score
1	Switzerland	87.42	100.00
2	France	83.95	94.22
3	Denmark	81.60	90.30
4	Malta	80.90	89.13
5	Sweden	80.51	88.48
6	United Kingdom	79.89	87.45
7	Luxembourg	79.12	86.16
8	Austria	78.97	85.91
9	Ireland	78.77	85.58
10	Finland	78.64	85.36
11	Iceland	78.57	85.25
12	Spain	78.39	84.95
13	Germany	78.37	84.91
14	Norway	77.49	83.45
15	Belgium	77.38	83.26
16	Italy	76.96	82.56
17	New Zealand	75.96	80.90
18	Netherlands	75.46	80.06
19	Israel	75.01	79.31
20	Japan	74.69	78.78
21	Australia	74.12	77.83
22	Greece	73.60	76.96
23	Cyprus	72.60	75.30
24	Canada	72.18	74.60
25	Portugal	71.91	74.15
26	United States of America	71.19	72.95
27	Slovakia	70.60	71.96
28	Lithuania	69.33	69.84
29	Bulgaria	67.85	67.38
29	Costa Rica	67.85	67.38
31	Qatar	67.80	67.29
32	Czech Republic	67.68	67.09
33	Slovenia	67.57	66.91
34	Trinidad and Tobago	67.36	66.56
35	Latvia	66.12	64.49
36	Albania	65.46	63.39
37	Croatia	65.45	63.38
38	Colombia	65.22	62.99
39	Hungary	65.01	62.64
40	Romania	64.78	62.26
41	Dominican Republic	64.71	62.14
42	Uruguay	64.65	62.04
43	Estonia	64.31	61.48
44	Singapore	64.23	61.34
45	Poland	64.11	61.14
46	Venezuela, Bolivarian Rep.	63.89	60.78
47	Russian Federation	63.79	60.61
48	Brunei Darussalam	63.57	60.24
49	Morocco	63.47	60.08
50	Panama	62.71	58.81
51	Tunisia	62.35	58.21
52	Azerbaijan	62.33	58.18
53	Korea, Rep.	62.30	58.13
54	Kuwait	62.28	58.09
55	Jordan	62.20	57.96
56	Armenia	62.07	57.74
57	Peru	61.92	57.49
58	Montenegro	61.33	56.51
59	Egypt	61.21	56.31
60	Lebanon	61.08	56.09
61	Brazil	60.70	55.46
62	Sri Lanka	60.61	55.31
63	Mexico	59.69	53.78
64	Argentina	59.30	53.13
65	Malaysia	59.22	52.99
66	United Arab Emirates	58.90	52.46
67	Namibia	58.46	51.73
68	Iran, Islamic Rep.	58.16	51.23
69	Philippines	57.65	50.38
70	Mongolia	57.51	50.14
71	Chile	57.49	50.11
71	Serbia	57.49	50.11
73	Saudi Arabia	57.47	50.08
74	Ecuador	57.42	49.99
75	Algeria	57.18	49.59
76	Mauritius	56.63	48.67
77	Georgia	55.69	47.11
78	Bahrain	55.15	46.21
79	Nicaragua	55.04	46.02
80	Kyrgyzstan	54.86	45.72
81	Nigeria	54.76	45.56
82	Kazakhstan	54.56	45.22
83	Paraguay	53.93	44.17
84	El Salvador	53.91	44.14
85	Turkey	52.96	42.56
86	Ukraine	52.87	42.41
87	Guatemala	52.33	41.51
88	Moldova, Rep.	51.97	40.91
89	Botswana	51.70	40.46
90	Honduras	51.51	40.14
91	Oman	51.32	39.82
92	Zambia	50.97	39.24
93	Tanzania, United Rep.	50.83	39.01
94	China	50.74	38.86
95	Thailand	49.88	37.42
96	Ghana	49.66	37.06
97	Senegal	49.52	36.82
98	Malawi	49.21	36.31
99	Tajikistan	47.85	34.04
100	Kenya	47.25	33.04
101	Bhutan	47.22	32.99
102	Viet Nam	46.96	32.56
103	Indonesia	46.92	32.49
104	Mozambique	46.37	31.57
105	Ethiopia	44.78	28.92
106	South Africa	44.73	28.84
107	Uganda	44.28	28.09
108	Mali	43.71	27.14
109	Rwanda	43.68	27.09
110	Zimbabwe	43.41	26.64
111	Cambodia	43.23	26.34
112	Laos	42.94	25.85
113	Gambia	42.42	24.99
114	Bosnia and Herzegovina	41.84	24.02
115	Liberia	41.62	23.65
116	Cameroon	40.81	22.30
117	Pakistan	37.50	16.79
118	Lesotho	33.78	10.59
119	Madagascar	33.73	10.50
120	Nepal	31.44	6.68
121	India	30.57	5.23
122	Congo, Dem. Rep.	30.41	4.97
123	Bangladesh	29.56	3.55
124	Burundi	27.43	0.00
	Yemen	n/a	n/a

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
1	Sweden	94.02	100.00
2	Switzerland	93.96	99.90
3	Singapore	93.90	99.81
4	Denmark	93.75	99.56
4	Norway	93.75	99.56
6	Iceland	93.55	99.24
7	Austria	93.22	98.71
8	Finland	93.13	98.56
9	Czech Republic	92.92	98.22
10	Slovenia	92.81	98.04
11	Canada	92.74	97.93
12	Japan	91.66	96.19
13	Australia	91.23	95.49
14	New Zealand	91.00	95.12
15	Portugal	90.41	94.17
16	Netherlands	90.08	93.63
17	Ireland	89.72	93.05
18	Germany	89.71	93.03
19	Bhutan	89.21	92.23
20	Slovakia	88.84	91.63
21	Poland	87.65	89.71
22	Korea, Rep.	87.13	88.87
23	United States of America	86.76	88.27
24	Qatar	86.10	87.20
25	United Kingdom	85.45	86.15
26	Kuwait	84.48	84.58
27	Latvia	84.08	83.94
28	Belgium	83.87	83.60
29	Estonia	83.41	82.85
30	Spain	83.37	82.79
31	Croatia	83.26	82.61
32	Georgia	82.87	81.98
33	France	82.74	81.77
34	Mauritius	82.73	81.76
35	Serbia	81.80	80.25
36	Hungary	81.75	80.17
37	Israel	81.28	79.41
38	Cyprus	81.15	79.20
39	United Arab Emirates	80.92	78.83
40	Lithuania	79.64	76.76
41	Romania	79.54	76.60
42	Oman	78.53	74.97
43	Greece	77.92	73.98
44	Chile	77.67	73.58
45	Bosnia and Herzegovina	76.43	71.57
46	Laos	76.00	70.88
47	Moldova, Rep.	75.89	70.70
48	Bulgaria	75.86	70.65
49	Costa Rica	75.41	69.93
50	Botswana	75.37	69.86
51	Nepal	75.35	69.83
52	Azerbaijan	75.10	69.42
53	Viet Nam	75.03	69.31
54	Panama	74.70	68.78
55	Montenegro	74.17	67.92
56	Uruguay	74.02	67.68
57	Albania	72.82	65.74
58	Mongolia	72.70	65.55
59	Armenia	72.32	64.93
60	Italy	72.10	64.58
61	Saudi Arabia	71.77	64.04
62	Tunisia	71.73	63.98
63	Bahrain	71.60	63.77
64	Malaysia	71.30	63.28
65	Senegal	70.41	61.85
66	Bangladesh	70.05	61.26
67	Indonesia	69.99	61.17
68	Ghana	69.54	60.44
69	Jordan	69.43	60.26
70	Nicaragua	68.87	59.36
71	Kazakhstan	68.79	59.23
72	Sri Lanka	68.68	59.05
73	Tajikistan	68.52	58.79
74	Morocco	67.92	57.82
75	Kyrgyzstan	66.77	55.96
76	Ethiopia	66.38	55.33
77	Namibia	66.24	55.11
78	Algeria	65.77	54.35
78	Paraguay	65.77	54.35
80	Madagascar	65.36	53.68
81	Zambia	65.25	53.51
82	Ecuador	65.18	53.39
83	Iran, Islamic Rep.	64.86	52.88
84	Turkey	64.61	52.47
85	Malawi	64.57	52.41
86	Egypt	64.54	52.36
87	Peru	64.06	51.58
88	China	64.01	51.50
89	Argentina	63.92	51.36
90	Uganda	62.68	49.35
91	Mali	61.89	48.08
92	Tanzania, United Rep.	61.80	47.93
93	Liberia	61.75	47.85
94	Thailand	61.73	47.82
95	Rwanda	61.04	46.70
96	Cambodia	60.36	45.60
97	India	60.35	45.59
98	Burundi	60.29	45.49
99	Lesotho	59.02	43.44
100	Philippines	58.74	42.99
101	Mozambique	58.67	42.87
102	Russian Federation	57.83	41.52
103	Ukraine	57.32	40.69
104	Gambia	55.98	38.53
105	Dominican Republic	55.75	38.15
106	Lebanon	55.00	36.94
107	Trinidad and Tobago	54.93	36.83
108	Cameroon	54.68	36.43
109	Pakistan	54.30	35.81
110	Zimbabwe	54.28	35.78
111	Colombia	51.66	31.54
112	Kenya	51.43	31.17
113	Mexico	50.90	30.32
114	Yemen	49.22	27.60
115	Brazil	48.38	26.24
116	South Africa	45.43	21.48
117	Guatemala	45.17	21.06
118	Nigeria	42.93	17.44
119	Congo, Dem. Rep.	40.71	13.85
120	El Salvador	37.36	8.44
121	Honduras	32.14	0.00
	Brunei Darussalam	n/a	n/a
	Luxembourg	n/a	n/a
	Malta	n/a	n/a
	Venezuela, Bolivarian Rep.	n/a	n/a

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
1	Greece	6.26	100.00
2	Austria	5.23	83.57
3	Georgia	4.78	76.29
4	Portugal	4.43	70.68
5	Norway	4.39	70.02
6	Lithuania	4.38	69.92
7	Switzerland	4.25	67.82
8	Germany	4.19	66.91
9	Sweden	4.19	66.86
10	Italy	4.02	64.18
11	Bulgaria	4.00	63.83
12	Russian Federation	3.98	63.44
13	Uruguay	3.94	62.85
14	Malta	3.91	62.37
15	Argentina	3.91	62.35
16	Spain	3.87	61.79
17	Iceland	3.79	60.49
18	Czech Republic	3.68	58.67
19	Denmark	3.66	58.31
20	Israel	3.58	57.05
21	Australia	3.50	55.76
22	Netherlands	3.48	55.48
23	Slovakia	3.45	55.03
24	Estonia	3.43	54.71
25	Jordan	3.43	54.64
26	Azerbaijan	3.40	54.26
27	Kazakhstan	3.27	52.20
28	Mongolia	3.26	52.01
29	France	3.24	51.63
30	Latvia	3.21	51.16
31	Moldova, Rep.	3.20	50.99
32	Finland	3.20	50.95
33	Croatia	3.13	49.83
34	Hungary	3.09	49.30
35	New Zealand	3.06	48.79
36	Belgium	3.01	47.99
37	Ukraine	3.00	47.81
38	Ireland	2.96	47.19
39	Luxembourg	2.92	46.54
40	United Kingdom	2.83	45.01
41	Slovenia	2.82	44.93
42	Armenia	2.80	44.65
43	Romania	2.67	42.50
44	Kuwait	2.61	41.53
45	Saudi Arabia	2.57	40.89
45	United States of America	2.57	40.89
47	Canada	2.54	40.42
48	Cyprus	2.50	39.73
49	Serbia	2.46	39.20
50	Lebanon	2.38	37.87
51	Japan	2.37	37.66
52	Montenegro	2.34	37.28
53	Korea, Rep.	2.33	37.00
54	Poland	2.29	36.43
55	Singapore	2.28	36.20
56	Mexico	2.23	35.48
57	Mauritius	2.00	31.83
58	Qatar	1.96	31.20
59	Venezuela, Bolivarian Rep.	1.93	30.58
60	El Salvador	1.92	30.53
61	Oman	1.92	30.42
62	Bosnia and Herzegovina	1.89	29.95
63	Kyrgyzstan	1.85	29.44
64	Brazil	1.85	29.41
65	Colombia	1.82	28.91
65	Trinidad and Tobago	1.82	28.91
67	China	1.81	28.76
68	Turkey	1.75	27.75
69	Brunei Darussalam	1.75	27.71
70	Tajikistan	1.71	27.19
71	Ecuador	1.67	26.41
72	Panama	1.59	25.27
73	United Arab Emirates	1.56	24.69
74	Malaysia	1.53	24.29
75	Dominican Republic	1.49	23.67
76	Iran, Islamic Rep.	1.49	23.62
77	Tunisia	1.29	20.38
78	Albania	1.29	20.33
78	Paraguay	1.29	20.33
80	Algeria	1.19	18.82
81	Costa Rica	1.15	18.15
82	Peru	1.12	17.60
83	Philippines	1.11	17.51
84	Chile	1.03	16.27
85	Pakistan	0.98	15.39
86	Bahrain	0.92	14.49
87	Nicaragua	0.91	14.37
88	Guatemala	0.90	14.09
89	Sri Lanka	0.88	13.84
90	Viet Nam	0.82	12.87
91	South Africa	0.82	12.83
92	Egypt	0.81	12.76
93	India	0.76	11.86
94	Morocco	0.62	9.62
95	Nepal	0.60	9.30
96	Laos	0.49	7.58
97	Bangladesh	0.47	7.28
98	Thailand	0.47	7.25
99	Honduras	0.39	5.96
100	Botswana	0.38	5.87
101	Bhutan	0.38	5.82
102	Nigeria	0.38	5.74
103	Namibia	0.37	5.68
104	Yemen	0.31	4.70
105	Kenya	0.20	2.98
106	Indonesia	0.20	2.93
107	Cambodia	0.14	2.00
107	Madagascar	0.14	2.00
109	Gambia	0.11	1.43
110	Ghana	0.10	1.25
111	Uganda	0.09	1.20
112	Congo, Dem. Rep.	0.09	1.17
112	Zambia	0.09	1.17
114	Mali	0.09	1.07
115	Cameroon	0.08	1.04
116	Zimbabwe	0.08	0.95
117	Senegal	0.07	0.80
118	Rwanda	0.06	0.74
119	Mozambique	0.06	0.59
120	Lesotho	0.05	0.46
121	Burundi	0.03	0.13
122	Ethiopia	0.03	0.11
123	Liberia	0.02	0.08
124	Tanzania, United Rep.	0.02	0.06
125	Malawi	0.02	0.00

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
1	Australia	100.00	100.00
1	Austria	100.00	100.00
1	Bahrain	100.00	100.00
1	Chile	100.00	100.00
1	Denmark	100.00	100.00
1	Estonia	100.00	100.00
1	Israel	100.00	100.00
1	Japan	100.00	100.00
1	Korea, Rep.	100.00	100.00
1	Kuwait	100.00	100.00
1	Malaysia	100.00	100.00
1	Malta	100.00	100.00
1	New Zealand	100.00	100.00
1	Qatar	100.00	100.00
1	Saudi Arabia	100.00	100.00
1	Singapore	100.00	100.00
1	Spain	100.00	100.00
1	Switzerland	100.00	100.00
1	United Arab Emirates	100.00	100.00
1	United States of America	100.00	100.00
21	Belgium	99.00	98.92
21	Canada	99.00	98.92
21	Cyprus	99.00	98.92
21	Czech Republic	99.00	98.92
21	Finland	99.00	98.92
21	France	99.00	98.92
21	Germany	99.00	98.92
21	Greece	99.00	98.92
21	Iceland	99.00	98.92
21	Italy	99.00	98.92
21	Oman	99.00	98.92
21	Portugal	99.00	98.92
21	Slovakia	99.00	98.92
21	Slovenia	99.00	98.92
21	Sweden	99.00	98.92
21	United Kingdom	99.00	98.92
37	Albania	98.00	97.85
37	Hungary	98.00	97.85
37	Kazakhstan	98.00	97.85
37	Luxembourg	98.00	97.85
37	Netherlands	98.00	97.85
37	Norway	98.00	97.85
37	Poland	98.00	97.85
44	Costa Rica	97.00	96.77
44	Croatia	97	96.77
44	Jordan	97.00	96.77
44	Kyrgyzstan	97.00	96.77
48	Brunei Darussalam	96.00	95.70
48	Montenegro	96.00	95.70
48	Turkey	96.00	95.70
48	Ukraine	96.00	95.70
48	Uruguay	96.00	95.70
53	Argentina	95.00	94.62
53	Bosnia and Herzegovina	95.00	94.62
53	Lebanon	95.00	94.62
53	Serbia	95.00	94.62
53	Tajikistan	95.00	94.62
53	Thailand	95.00	94.62
53	Venezuela, Bolivarian Rep.	95.00	94.62
60	Lithuania	94.00	93.55
60	Sri Lanka	94.00	93.55
62	Egypt	93.00	92.47
62	Latvia	93.00	92.47
62	Mauritius	93.00	92.47
62	Tunisia	93.00	92.47
66	Armenia	92.00	91.40
66	Ireland	92.00	91.40
66	Trinidad and Tobago	92.00	91.40
69	El Salvador	91.00	90.32
69	Paraguay	91.00	90.32
71	Azerbaijan	89.00	88.17
71	Mexico	89.00	88.17
71	Russian Federation	89.00	88.17
74	Iran, Islamic Rep.	88.00	87.10
75	Algeria	87.00	86.02
76	Brazil	86.00	84.95
76	Bulgaria	86.00	84.95
76	Ecuador	86.00	84.95
79	Georgia	85.00	83.87
80	Colombia	84.00	82.80
81	Dominican Republic	83.00	81.72
81	Morocco	83.00	81.72
83	Romania	82.00	80.65
84	Honduras	80.00	78.49
85	Moldova, Rep.	78.00	76.34
85	Viet Nam	78.00	76.34
87	Panama	77.00	75.27
87	Peru	77.00	75.27
89	Nicaragua	76.00	74.19
90	China	75.00	73.12
90	Philippines	75.00	73.12
92	Laos	73.00	70.97
92	South Africa	73.00	70.97
94	Indonesia	68.00	65.59
95	Guatemala	67.00	64.52
96	Bhutan	63.00	60.22
97	Rwanda	62.00	59.14
98	Botswana	60.00	56.99
98	Yemen	60.00	56.99
100	Mongolia	59.00	55.91
101	Pakistan	58.00	54.84
102	Burundi	50.00	46.24
103	Cambodia	49.00	45.16
104	Senegal	48.00	44.09
105	Bangladesh	47.00	43.01
106	Nepal	46.00	41.94
107	India	44.00	39.78
107	Lesotho	44.00	39.78
107	Malawi	44.00	39.78
110	Gambia	42.00	37.63
111	Cameroon	39.00	34.41
111	Zimbabwe	39.00	34.41
113	Namibia	34.00	29.03
114	Nigeria	33.00	27.96
115	Mali	31.00	25.81
115	Zambia	31.00	25.81
117	Kenya	30.00	24.73
118	Mozambique	24.00	18.28
118	Tanzania, United Rep.	24.00	18.28
120	Congo, Dem. Rep.	20.00	13.98
121	Uganda	19.00	12.90
122	Liberia	17.00	10.75
123	Ghana	14.00	7.53
124	Madagascar	10.00	3.23
125	Ethiopia	7.00	0.00

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
1	Kyrgyzstan	73.92	100.00
2	Slovakia	71.66	96.86
3	Czech Republic	71.48	96.61
4	Bosnia and Herzegovina	67.94	91.68
5	Azerbaijan	66.23	89.30
6	Armenia	65.77	88.66
7	Montenegro	65.60	88.43
8	Tajikistan	64.42	86.79
9	Croatia	62.90	84.67
10	Georgia	61.76	83.09
11	Hungary	61.58	82.84
12	Poland	61.52	82.75
13	Romania	59.19	79.51
14	Germany	58.17	78.09
15	Bulgaria	57.23	76.79
16	Slovenia	56.48	75.74
17	United States of America	56.46	75.72
18	Latvia	56.12	75.24
19	Brunei Darussalam	53.92	72.18
20	Lithuania	53.24	71.24
21	Peru	53.06	70.99
22	Austria	52.67	70.45
23	Chile	52.05	69.58
24	Japan	51.71	69.11
25	New Zealand	51.00	68.12
26	Estonia	50.65	67.64
27	Trinidad and Tobago	49.84	66.51
28	Mongolia	48.50	64.65
29	Italy	46.82	62.31
30	Finland	46.52	61.89
31	Switzerland	45.69	60.74
32	Ukraine	45.50	60.47
33	Sweden	44.96	59.72
34	Russian Federation	44.80	59.50
35	France	44.36	58.89
36	Panama	44.09	58.51
37	Malaysia	43.75	58.04
38	Greece	42.99	56.98
39	Israel	42.66	56.52
40	Brazil	42.45	56.23
41	Netherlands	41.72	55.22
42	Denmark	41.33	54.67
43	United Kingdom	40.59	53.64
44	Australia	40.07	52.92
45	Kazakhstan	39.97	52.78
46	Mauritius	39.89	52.67
47	Belgium	39.85	52.61
48	Norway	39.69	52.39
49	Egypt	39.21	51.72
50	Korea, Rep.	39.03	51.47
51	Tunisia	39.00	51.43
52	Iceland	38.27	50.42
53	Congo, Dem. Rep.	38.03	50.08
54	Cyprus	37.89	49.89
55	Ireland	37.44	49.26
56	Albania	37.18	48.90
56	Argentina	37.18	48.90
58	Algeria	36.51	47.97
59	Dominican Republic	36.47	47.91
60	Moldova, Rep.	35.35	46.36
61	Serbia	35.29	46.27
62	Madagascar	33.64	43.98
63	Saudi Arabia	33.41	43.66
64	El Salvador	32.28	42.09
65	Malta	31.84	41.47
66	Luxembourg	31.65	41.21
67	South Africa	31.23	40.63
68	Ecuador	31.19	40.57
69	Singapore	30.24	39.25
70	Colombia	29.98	38.89
71	United Arab Emirates	28.80	37.25
72	Indonesia	28.64	37.02
73	Paraguay	28.13	36.31
74	Portugal	27.13	34.92
75	Lesotho	26.65	34.26
76	Canada	25.83	33.12
77	Qatar	25.79	33.06
78	Venezuela, Bolivarian Rep.	25.53	32.70
79	Spain	23.88	30.40
80	Yemen	22.95	29.11
81	Mexico	22.77	28.86
82	Honduras	21.30	26.82
83	Thailand	21.29	26.80
84	Turkey	20.85	26.19
85	Morocco	20.75	26.05
86	Kuwait	20.72	26.01
87	Costa Rica	20.02	25.03
88	Viet Nam	19.71	24.60
89	Nicaragua	19.56	24.39
90	Pakistan	19.27	23.99
91	Namibia	19.24	23.95
92	Lebanon	18.14	22.42
93	Botswana	17.45	21.46
94	Liberia	17.10	20.97
95	Sri Lanka	16.42	20.03
96	Ghana	16.13	19.62
97	Bhutan	15.94	19.36
98	Bangladesh	14.96	18.00
99	Guatemala	14.87	17.87
100	Nepal	12.62	14.74
101	Gambia	12.31	14.31
102	Uruguay	12.21	14.17
103	Laos	11.12	12.66
104	Bahrain	9.57	10.50
105	Malawi	8.93	9.61
106	India	8.53	9.05
107	Cambodia	6.86	6.73
108	Senegal	6.18	5.79
109	Cameroon	5.86	5.34
110	Philippines	5.11	4.30
111	Rwanda	5.10	4.28
112	Ethiopia	4.54	3.50
113	Tanzania, United Rep.	3.97	2.71
114	Mali	3.49	2.04
115	Uganda	2.14	0.17
116	Zimbabwe	2.02	0.00
	Burundi	n/a	n/a
	China	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Jordan	n/a	n/a
	Kenya	n/a	n/a
	Mozambique	n/a	n/a
	Nigeria	n/a	n/a
	Oman	n/a	n/a
	Zambia	n/a	n/a

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
1	Czech Republic	70.20	100.00
2	Slovakia	66.10	94.15
3	Kyrgyzstan	61.50	87.59
4	Azerbaijan	58.60	83.45
5	Poland	56.40	80.31
6	Slovenia	55.30	78.74
7	Montenegro	52.90	75.32
8	Croatia	52.30	74.47
9	Estonia	52.10	74.18
10	Latvia	51.00	72.61
11	Bulgaria	50.40	71.75
12	Austria	49.90	71.04
13	Bosnia and Herzegovina	49.40	70.33
14	Serbia	49.20	70.04
15	Germany	48.60	69.19
16	South Africa	48.50	69.04
17	Switzerland	48.10	68.47
18	Romania	46.90	66.76
19	Hungary	46.40	66.05
20	United States of America	46.10	65.62
21	Georgia	45.10	64.19
22	Sri Lanka	44.40	63.20
23	Denmark	42.20	60.06
24	Moldova, Rep.	41.70	59.34
25	Armenia	41.30	58.77
26	Japan	39.90	56.78
27	France	38.80	55.21
28	Finland	38.70	55.06
29	Norway	38.10	54.21
30	Netherlands	37.90	53.92
31	Korea, Rep.	37.40	53.21
32	Sweden	37.20	52.92
33	Chile	35.50	50.50
34	Peru	35.10	49.93
35	Malaysia	34.50	49.07
36	Israel	34.30	48.79
37	Italy	34.20	48.64
38	Belgium	32.90	46.79
39	Albania	32.40	46.08
40	Cyprus	32.20	45.79
40	Lithuania	32.20	45.79
42	Mongolia	32.00	45.51
43	Luxembourg	30.90	43.94
44	Mauritius	30.50	43.37
45	Kazakhstan	30.4	43.22
46	United Kingdom	29.70	42.23
47	Brazil	29.40	41.80
48	Australia	29.30	41.65
49	Oman	29.10	41.37
50	Ecuador	28.70	40.80
51	Tunisia	27.50	39.09
52	Greece	27.40	38.94
53	Ireland	27.20	38.66
54	Colombia	25.80	36.66
55	Philippines	25.60	36.38
56	Iran, Islamic Rep.	25.20	35.81
57	New Zealand	25.10	35.66
58	Venezuela, Bolivarian Rep.	24.90	35.38
59	Egypt	24.00	34.09
60	Paraguay	23.90	33.95
61	Canada	23.10	32.81
62	Indonesia	23.00	32.67
62	Saudi Arabia	23.00	32.67
64	Dominican Republic	22.50	31.95
65	Russian Federation	21.90	31.10
66	Panama	20.10	28.53
67	Qatar	19.40	27.53
68	Pakistan	19.00	26.96
69	Singapore	18.90	26.82
70	Spain	18.60	26.39
71	Turkey	18.20	25.82
72	Congo, Dem. Rep.	18.10	25.68
73	Lebanon	17.50	24.82
74	Algeria	17.30	24.54
75	Mexico	17.00	24.11
76	El Salvador	16.80	23.82
76	India	16.80	23.82
78	Portugal	16.70	23.68
79	Guatemala	16.30	23.11
79	Uruguay	16.30	23.11
81	Costa Rica	16.00	22.68
82	Nepal	15.20	21.54
83	Jordan	14.20	20.11
84	Kenya	13.90	19.69
85	Viet Nam	13.60	19.26
86	China	13.50	19.12
86	Kuwait	13.50	19.12
86	Thailand	13.50	19.12
89	Honduras	13.20	18.69
90	Malta	12.80	18.12
91	Trinidad and Tobago	12.70	17.97
92	Ghana	9.20	12.98
93	Lesotho	8.50	11.98
94	Cameroon	4.70	6.56
94	Rwanda	4.70	6.56
96	Cambodia	4.20	5.85
97	Mali	4.00	5.56
97	Senegal	4.00	5.56
99	Ethiopia	2.90	3.99
100	Mozambique	2.40	3.28
101	Zimbabwe	2.10	2.85
102	Bahrain	2.00	2.71
102	Burundi	2.00	2.71
104	Uganda	1.70	2.28
105	Tanzania, United Rep.	0.80	1.00
106	Bhutan	0.10	0.00
104	Argentina	0.10	0.00
	Bangladesh	n/a	n/a
	Botswana	n/a	n/a
	Brunei Darussalam	n/a	n/a
	Gambia	n/a	n/a
	Iceland	n/a	n/a
	Laos	n/a	n/a
	Liberia	n/a	n/a
	Madagascar	n/a	n/a
	Malawi	n/a	n/a
	Morocco	n/a	n/a
	Namibia	n/a	n/a
	Nicaragua	n/a	n/a
	Nigeria	n/a	n/a
	Tajikistan	n/a	n/a
	Ukraine	n/a	n/a
	United Arab Emirates	n/a	n/a
	Yemen	n/a	n/a
	Zambia	n/a	n/a

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
1	Japan	22.60	100.00
2	Germany	22.30	98.66
3	Nigeria	21.10	93.30
4	Singapore	20.00	88.39
5	France	19.90	87.95
6	Austria	19.30	85.27
7	Switzerland	19.20	84.82
8	Finland	19.00	83.93
9	Sweden	18.50	81.70
10	Denmark	17.90	79.02
11	Italy	17.50	77.23
12	Czech Republic	17.20	75.89
12	Luxembourg	17.20	75.89
14	Canada	16.80	74.11
15	Norway	16.50	72.77
16	Brunei Darussalam	16.20	71.43
17	Netherlands	15.70	69.20
18	Slovakia	15.10	66.52
19	Hungary	15.00	66.07
19	Malta	15.00	66.07
21	Iceland	14.80	65.18
22	Croatia	14.50	63.84
23	Latvia	14.20	62.50
24	Belgium	13.60	59.82
25	Slovenia	13.50	59.38
26	Estonia	13.40	58.93
27	Cyprus	13.10	57.59
27	Israel	13.10	57.59
29	Australia	13.00	57.14
29	Russian Federation	13.00	57.14
31	Peru	12.80	56.25
32	Poland	12.70	55.80
33	United Kingdom	12.50	54.91
34	New Zealand	12.40	54.46
35	Chile	11.90	52.23
36	Trinidad and Tobago	11.80	51.79
37	Ukraine	11.70	51.34
38	Saudi Arabia	11.60	50.89
38	Serbia	11.60	50.89
40	Portugal	11.50	50.45
41	Ireland	11.30	49.55
41	Kazakhstan	11.30	49.55
43	Costa Rica	11.20	49.11
43	Spain	11.20	49.11
45	Mauritius	11.1	48.66
45	Montenegro	11.10	48.66
47	South Africa	10.70	46.88
48	Malaysia	10.30	45.09
48	Oman	10.30	45.09
50	Lebanon	9.70	42.41
50	United Arab Emirates	9.70	42.41
52	Armenia	9.60	41.96
52	Bosnia and Herzegovina	9.60	41.96
54	Bulgaria	9.50	41.52
54	Lithuania	9.50	41.52
56	Azerbaijan	9.40	41.07
57	Egypt	8.90	38.84
58	Colombia	8.80	38.39
59	Panama	8.30	36.16
60	Brazil	8.10	35.27
61	Greece	7.90	34.38
62	Botswana	7.80	33.93
63	Kyrgyzstan	7.70	33.48
64	Tunisia	7.60	33.04
65	Argentina	7.50	32.59
66	Kuwait	7.40	32.14
66	Uruguay	7.40	32.14
68	Paraguay	7.30	31.70
68	Venezuela, Bolivarian Rep.	7.30	31.70
70	Mexico	7.10	30.80
71	Honduras	6.90	29.91
72	Qatar	6.70	29.02
73	Nicaragua	6.60	28.57
74	Dominican Republic	6.40	27.68
75	Moldova, Rep.	6.30	27.23
76	Bahrain	6.20	26.79
77	Romania	6.00	25.89
78	Georgia	5.90	25.45
78	Sri Lanka	5.90	25.45
80	Tajikistan	5.80	25.00
80	Turkey	5.80	25.00
82	Namibia	5.70	24.55
83	Congo, Dem. Rep.	5.60	24.11
84	Iran, Islamic Rep.	5.10	21.88
85	Ecuador	4.60	19.64
86	Thailand	4.50	19.20
87	Morocco	4.40	18.75
88	Albania	4.20	17.86
88	Lesotho	4.20	17.86
90	Algeria	4.00	16.96
91	El Salvador	3.80	16.07
92	Cambodia	3.70	15.63
93	Bhutan	3.60	15.18
94	Yemen	3.50	14.73
95	India	3.30	13.84
95	Philippines	3.30	13.84
97	Pakistan	3.10	12.95
97	Viet Nam	3.10	12.95
99	Guatemala	2.90	12.05
99	Indonesia	2.90	12.05
101	Mongolia	2.50	10.27
102	Burundi	2.20	8.93
102	Ghana	2.20	8.93
102	Uganda	2.20	8.93
105	Tanzania, United Rep.	2.10	8.48
106	Bangladesh	1.90	7.59
106	Nepal	1.90	7.59
106	Zambia	1.90	7.59
109	Liberia	1.80	7.14
110	Zimbabwe	1.60	6.25
111	Gambia	1.50	5.80
111	Mozambique	1.50	5.80
111	Senegal	1.50	5.80
114	Ethiopia	1.30	4.91
114	Laos	1.30	4.91
116	Mali	1.00	3.57
117	Madagascar	0.90	3.13
118	Rwanda	0.60	1.79
119	Malawi	0.20	0.00
	Cameroon	n/a	n/a
	China	n/a	n/a
	Jordan	n/a	n/a
	Kenya	n/a	n/a
	Korea, Rep.	n/a	n/a
	United States of America	n/a	n/a

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.

5.1.4 Labour productivity per employee

Labour productivity per person employed (2017 US$) | 2018

Rank	Country	Value	Score
1	United Arab Emirates	179786.00	100.00
2	Qatar	156943.00	87.13
3	Saudi Arabia	144239.00	79.98
4	Kuwait	144052.00	79.87
5	Luxembourg	143971.00	79.83
6	Ireland	142893.00	79.22
7	Singapore	142823.00	79.18
8	Norway	134993.00	74.77
9	United States of America	124442.00	68.83
10	Belgium	111024.00	61.27
11	Sweden	103596.00	57.09
12	Switzerland	102408.00	56.42
13	France	101012.00	55.63
14	Australia	100925.00	55.58
15	Netherlands	100126.00	55.13
16	Austria	98541.00	54.24
17	Denmark	97380.00	53.59
18	Finland	96021.00	52.82
19	Germany	93464.00	51.38
20	Canada	93070.00	51.16
21	Italy	91427.00	50.23
22	Spain	90391.00	49.65
23	United Kingdom	89761.00	49.29
24	Iceland	88479.00	48.57
25	Malta	87762.00	48.17
26	Bahrain	83971.00	46.03
27	Japan	80302.00	43.97
28	Cyprus	80115.00	43.86
29	Israel	76222.00	41.67
30	Turkey	76136.00	41.62
31	Korea, Rep.	75869.00	41.47
32	Slovakia	75440.00	41.23
33	Oman	75093.00	41.03
34	New Zealand	73312.00	40.03
35	Iran, Islamic Rep.	71677.00	39.11
36	Greece	71656.00	39.10
37	Slovenia	71334.00	38.92
38	Czech Republic	70083.00	38.21
39	Trinidad and Tobago	69359.00	37.80
40	Poland	68340.00	37.23
41	Lithuania	66873.00	36.40
42	Portugal	64789.00	35.23
43	Croatia	64135.00	34.86
44	Malaysia	64061.00	34.82
45	Estonia	64028	34.80
46	Hungary	63403.00	34.45
47	Latvia	59800.00	32.42
48	Russian Federation	57520.00	31.13
49	Algeria	57491.00	31.12
50	Kazakhstan	55283.00	29.87
51	Romania	55043.00	29.74
52	Chile	54400.00	29.38
53	Bosnia and Herzegovina	54169.00	29.25
54	Uruguay	47105.00	25.27
55	Argentina	45750.00	24.51
56	Mexico	45651.00	24.45
57	Egypt	44304.00	23.69
58	Bulgaria	44025.00	23.53
59	South Africa	43322.00	23.14
60	Jordan	42499.00	22.67
61	Costa Rica	41823.00	22.29
62	Serbia	41801.00	22.28
63	Tunisia	40087.00	21.32
64	Dominican Republic	38078.00	20.18
65	Azerbaijan	34485.00	18.16
66	Sri Lanka	34465.00	18.15
67	Albania	32742.00	17.18
68	Thailand	32407.00	16.99
69	Colombia	31637.00	16.56
70	Brazil	30887.00	16.13
71	China	30686.00	16.02
72	Venezuela, Bolivarian Rep.	29118.00	15.14
73	Indonesia	26930.00	13.91
74	Armenia	26860.00	13.87
75	Peru	25794.00	13.27
76	Ecuador	24102.00	12.31
77	Morocco	23161.00	11.78
78	Ukraine	22571.00	11.45
79	Georgia	22246.00	11.27
80	Philippines	21224.00	10.69
81	Guatemala	20569.00	10.32
82	Pakistan	18237.00	9.01
83	India	17558.00	8.63
84	Nigeria	17075.00	8.35
85	Moldova, Rep.	16346.00	7.94
86	Zambia	13828.00	6.53
87	Yemen	12339.00	5.69
88	Viet Nam	11928.00	5.46
89	Tajikistan	11318.00	5.11
90	Bangladesh	10619.00	4.72
91	Ghana	9612.00	4.15
92	Kyrgyzstan	9463.00	4.07
93	Kenya	8473.00	3.51
94	Cameroon	8088.00	3.29
95	Senegal	8045.00	3.27
96	Cambodia	6887.00	2.62
97	Tanzania, United Rep.	6526.00	2.41
98	Mali	6381.00	2.33
99	Uganda	5708.00	1.95
100	Zimbabwe	4302.00	1.16
101	Mozambique	3866.00	0.91
102	Ethiopia	3456.00	0.68
103	Madagascar	3088.00	0.48
104	Malawi	2918.00	0.38
105	Congo, Dem. Rep.	2242.00	0.00
	Bhutan	n/a	n/a
	Botswana	n/a	n/a
	Brunei Darussalam	n/a	n/a
	Burundi	n/a	n/a
	El Salvador	n/a	n/a
	Gambia	n/a	n/a
	Honduras	n/a	n/a
	Laos	n/a	n/a
	Lebanon	n/a	n/a
	Lesotho	n/a	n/a
	Liberia	n/a	n/a
	Mauritius	n/a	n/a
	Mongolia	n/a	n/a
	Montenegro	n/a	n/a
	Namibia	n/a	n/a
	Nepal	n/a	n/a
	Nicaragua	n/a	n/a
	Panama	n/a	n/a
	Paraguay	n/a	n/a
	Rwanda	n/a	n/a

SOURCE: The Conference Board, Total Economy Database™ (Adjusted version) (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
1	United States of America	5.67	100.00
2	Norway	5.66	99.46
3	Finland	5.61	97.77
4	Israel	5.52	94.72
5	United Arab Emirates	5.50	94.28
6	Switzerland	5.43	91.88
7	Malaysia	5.36	89.38
8	Germany	5.33	88.26
9	Iceland	5.30	87.38
10	Canada	5.30	87.25
11	Netherlands	5.27	86.27
12	Qatar	5.23	84.98
13	Ireland	5.22	84.84
14	Costa Rica	5.14	82.00
15	Singapore	5.10	80.75
16	Australia	5.03	78.35
17	United Kingdom	4.98	76.49
18	Austria	4.97	76.32
19	France	4.93	74.97
19	Sweden	4.93	74.97
21	Chile	4.93	74.86
22	Denmark	4.92	74.63
23	Lebanon	4.92	74.53
24	Kenya	4.85	72.16
25	Belgium	4.84	71.79
26	New Zealand	4.83	71.48
27	Portugal	4.81	70.67
28	Cyprus	4.78	69.65
29	Korea, Rep.	4.76	69.15
30	Azerbaijan	4.72	67.76
31	Indonesia	4.70	67.22
32	Bahrain	4.70	66.95
33	Senegal	4.65	65.53
34	Zambia	4.63	64.88
35	Jordan	4.63	64.61
36	Italy	4.61	63.90
37	China	4.58	63.13
38	Spain	4.54	61.84
39	Ukraine	4.53	61.40
40	Japan	4.53	61.33
41	Ghana	4.51	60.76
42	Greece	4.50	60.49
43	Cameroon	4.49	60.15
44	Philippines	4.46	59.10
45	Gambia	4.46	59.00
46	India	4.46	58.83
47	Uganda	4.43	57.95
48	Guatemala	4.42	57.51
49	Slovenia	4.36	55.68
50	Poland	4.36	55.45
51	Trinidad and Tobago	4.34	55.01
52	Argentina	4.34	54.87
52	Rwanda	4.34	54.87
54	Mexico	4.33	54.67
55	Zimbabwe	4.31	54.06
56	Mali	4.29	53.32
57	Congo, Dem. Rep.	4.28	52.91
58	Luxembourg	4.26	52.23
59	Colombia	4.25	52.03
60	Russian Federation	4.24	51.59
61	Saudi Arabia	4.24	51.52
62	Sri Lanka	4.18	49.36
63	Tunisia	4.15	48.38
64	Pakistan	4.07	45.87
65	Mauritius	4.06	45.53
66	Iran, Islamic Rep.	4.05	45.13
67	Kazakhstan	4.03	44.35
67	Madagascar	4.03	44.35
69	Nigeria	4.02	44.15
70	Honduras	4.01	43.74
71	Uruguay	4.00	43.34
72	Algeria	3.98	42.90
73	Tanzania, United Rep.	3.96	42.15
74	Laos	3.96	41.98
75	Malta	3.92	40.66
76	Botswana	3.92	40.60
77	Ecuador	3.89	39.61
78	Estonia	3.88	39.48
79	Albania	3.88	39.31
80	Tajikistan	3.87	38.97
81	Thailand	3.87	38.90
82	Turkey	3.86	38.60
83	Armenia	3.82	37.31
84	South Africa	3.81	37.01
85	Dominican Republic	3.81	36.84
86	Bhutan	3.80	36.77
87	Viet Nam	3.80	36.64
88	Nepal	3.79	36.33
89	Brunei Darussalam	3.76	35.35
90	Morocco	3.73	34.40
91	Kuwait	3.73	34.37
92	Serbia	3.73	34.30
93	Peru	3.73	34.17
94	Latvia	3.72	34.03
95	Brazil	3.72	34.00
96	Ethiopia	3.69	32.95
97	Panama	3.69	32.85
98	Montenegro	3.67	32.27
99	Bangladesh	3.65	31.56
100	Burundi	3.63	30.85
101	Egypt	3.63	30.78
102	Malawi	3.61	30.35
103	Kyrgyzstan	3.60	29.77
104	Croatia	3.59	29.60
105	Czech Republic	3.57	28.89
106	El Salvador	3.57	28.72
107	Liberia	3.55	28.35
108	Oman	3.54	27.91
109	Namibia	3.54	27.81
110	Venezuela, Bolivarian Rep.	3.47	25.37
111	Lithuania	3.44	24.59
112	Cambodia	3.44	24.42
113	Bosnia and Herzegovina	3.43	24.02
114	Yemen	3.41	23.48
115	Slovakia	3.41	23.34
116	Nicaragua	3.41	23.31
117	Georgia	3.40	23.07
118	Mozambique	3.34	21.04
119	Moldova, Rep.	3.30	19.59
120	Paraguay	3.25	17.93
121	Lesotho	3.24	17.86
122	Romania	3.23	17.46
123	Bulgaria	3.16	14.95
124	Hungary	2.86	4.80
125	Mongolia	2.72	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.

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
1	Switzerland	6.19	100.00
2	Singapore	5.82	90.56
3	Finland	5.81	90.33
4	United States of America	5.62	85.63
5	Qatar	5.57	84.34
6	Netherlands	5.45	81.25
7	Ireland	5.42	80.64
8	Canada	5.39	79.83
9	Germany	5.37	79.33
10	New Zealand	5.35	78.87
11	Norway	5.32	77.91
12	United Arab Emirates	5.28	77.00
13	Iceland	5.23	75.84
14	Malaysia	5.18	74.52
15	Belgium	5.09	72.14
16	Australia	5.07	71.63
17	Denmark	4.99	69.66
18	Lebanon	4.99	69.53
19	Malta	4.96	68.80
20	Sweden	4.76	63.84
21	United Kingdom	4.67	61.66
22	Estonia	4.67	61.56
23	Bahrain	4.64	60.78
24	Israel	4.64	60.75
25	India	4.62	60.25
26	Costa Rica	4.53	57.97
27	Kenya	4.52	57.74
28	China	4.52	57.69
29	Bhutan	4.50	57.26
30	Portugal	4.44	55.64
31	Indonesia	4.43	55.57
32	Brunei Darussalam	4.43	55.49
33	Azerbaijan	4.40	54.73
34	Japan	4.38	54.33
35	Gambia	4.38	54.25
36	Rwanda	4.36	53.80
37	Luxembourg	4.35	53.47
38	France	4.31	52.33
39	Saudi Arabia	4.29	51.97
40	Albania	4.29	51.87
41	Jordan	4.23	50.43
42	Austria	4.23	50.40
43	Trinidad and Tobago	4.21	50.00
44	Philippines	4.21	49.92
45	Ghana	4.08	46.66
46	Mauritius	4.08	46.61
47	Tajikistan	4.06	46.03
48	Zimbabwe	4.05	45.77
49	Slovenia	4.04	45.67
50	Laos	4.01	44.89
51	Cyprus	3.95	43.32
52	Ukraine	3.86	41.12
53	Armenia	3.85	40.74
54	Montenegro	3.80	39.60
55	Czech Republic	3.78	39.12
56	Sri Lanka	3.76	38.44
57	Pakistan	3.75	38.34
58	Zambia	3.75	38.31
59	Russian Federation	3.72	37.50
59	Thailand	3.72	37.50
61	Italy	3.71	37.35
62	Spain	3.68	36.51
63	Latvia	3.66	36.11
64	Nepal	3.66	35.88
65	Lesotho	3.64	35.50
66	Viet Nam	3.63	35.32
67	Poland	3.61	34.69
68	Lithuania	3.59	34.26
69	Botswana	3.59	34.24
70	Oman	3.57	33.76
71	Kazakhstan	3.54	32.95
72	Senegal	3.53	32.69
73	Cambodia	3.50	31.93
74	Ethiopia	3.49	31.76
75	Korea, Rep.	3.48	31.50
76	Cameroon	3.47	31.10
77	Colombia	3.44	30.31
78	Bangladesh	3.40	29.33
79	Uganda	3.39	29.25
80	Chile	3.39	29.23
81	Bulgaria	3.39	29.12
82	Ecuador	3.39	29.05
83	Kuwait	3.32	27.45
84	Tanzania, United Rep.	3.28	26.49
85	Mali	3.28	26.42
86	Namibia	3.28	26.32
87	Serbia	3.27	26.24
88	Iran, Islamic Rep.	3.27	26.01
89	Moldova, Rep.	3.24	25.30
90	Panama	3.23	25.20
91	Algeria	3.21	24.67
92	Honduras	3.19	24.19
93	Malawi	3.18	23.84
94	Turkey	3.18	23.79
95	Argentina	3.17	23.68
96	Tunisia	3.08	21.43
97	Kyrgyzstan	3.07	21.13
98	Burundi	3.06	20.80
99	Greece	3.05	20.50
100	Georgia	3.03	19.94
101	Mexico	3.00	19.33
102	Liberia	2.98	18.83
103	Madagascar	2.96	18.29
104	Hungary	2.91	17.03
105	Croatia	2.91	16.98
106	Congo, Dem. Rep.	2.86	15.74
107	South Africa	2.80	14.30
108	Mongolia	2.80	14.20
108	Romania	2.80	14.20
110	Nigeria	2.79	13.92
111	Slovakia	2.77	13.54
112	Mozambique	2.72	12.30
113	Morocco	2.71	12.07
114	Uruguay	2.70	11.82
115	Guatemala	2.61	9.51
116	Peru	2.60	9.13
117	Brazil	2.59	8.83
118	Venezuela, Bolivarian Rep.	2.56	8.27
119	Dominican Republic	2.54	7.69
120	Egypt	2.47	5.77
121	Bosnia and Herzegovina	2.37	3.47
122	El Salvador	2.30	1.64
123	Yemen	2.29	1.21
124	Nicaragua	2.27	0.91
125	Paraguay	2.24	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.

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
1	Switzerland	5.88	100.00
2	Finland	5.39	86.94
3	United States of America	5.34	85.38
4	Netherlands	5.30	84.49
5	Germany	5.24	82.69
6	Singapore	5.07	78.27
7	Qatar	5.05	77.76
8	Iceland	5.05	77.60
9	Malaysia	4.96	75.31
10	Sweden	4.95	74.91
11	Norway	4.91	73.83
12	United Arab Emirates	4.89	73.51
13	Austria	4.85	72.37
14	New Zealand	4.83	71.84
15	Costa Rica	4.82	71.41
16	Denmark	4.81	71.32
17	Belgium	4.78	70.33
18	Canada	4.71	68.61
19	Israel	4.71	68.44
20	Azerbaijan	4.61	65.81
21	Estonia	4.56	64.59
22	Malta	4.56	64.49
23	Australia	4.53	63.81
24	China	4.52	63.33
25	Luxembourg	4.51	63.06
26	Ireland	4.49	62.65
27	Cyprus	4.43	61.12
28	Lebanon	4.41	60.42
29	Indonesia	4.38	59.59
30	United Kingdom	4.36	59.21
31	Portugal	4.36	58.99
32	India	4.33	58.24
33	Czech Republic	4.25	56.11
34	Bahrain	4.24	55.92
35	France	4.24	55.82
36	Korea, Rep.	4.23	55.49
37	Slovenia	4.22	55.47
38	Sri Lanka	4.13	52.99
39	Brunei Darussalam	4.09	51.91
40	Mauritius	4.07	51.29
41	Rwanda	4.04	50.48
42	Greece	4.02	49.87
43	Trinidad and Tobago	4.01	49.78
44	Gambia	3.99	49.14
45	Colombia	3.98	48.90
46	Spain	3.96	48.44
47	Japan	3.95	48.01
48	Albania	3.94	47.82
49	Mali	3.94	47.77
50	Mongolia	3.94	47.74
51	Russian Federation	3.93	47.58
52	Serbia	3.92	47.36
53	Bhutan	3.92	47.33
54	Italy	3.91	46.96
55	Philippines	3.85	45.37
56	Ukraine	3.85	45.29
57	Jordan	3.83	44.72
58	Chile	3.77	43.30
59	Senegal	3.76	43.03
60	Guatemala	3.76	42.84
61	Ecuador	3.75	42.73
62	Saudi Arabia	3.75	42.70
63	Kazakhstan	3.73	42.06
64	Panama	3.71	41.60
65	Mexico	3.68	40.71
66	Armenia	3.66	40.17
67	Kenya	3.66	40.15
68	Zimbabwe	3.65	40.06
69	Honduras	3.63	39.58
70	Zambia	3.63	39.39
71	Thailand	3.62	39.12
72	Tajikistan	3.61	39.04
73	Slovakia	3.61	38.83
74	Pakistan	3.60	38.77
75	Iran, Islamic Rep.	3.58	38.13
76	Latvia	3.53	36.83
77	Oman	3.52	36.54
78	Montenegro	3.51	36.27
79	Uruguay	3.49	35.78
80	Argentina	3.49	35.57
81	Nepal	3.46	34.92
82	Cameroon	3.46	34.87
83	Namibia	3.45	34.49
84	Moldova, Rep.	3.44	34.38
85	Croatia	3.43	34.19
86	Hungary	3.41	33.60
87	Bulgaria	3.41	33.47
88	Burundi	3.39	32.96
89	Dominican Republic	3.38	32.79
89	Laos	3.38	32.79
91	Turkey	3.35	31.93
92	El Salvador	3.34	31.61
93	Poland	3.33	31.48
94	South Africa	3.32	31.18
95	Bosnia and Herzegovina	3.31	30.83
96	Ghana	3.31	30.80
97	Viet Nam	3.30	30.48
98	Peru	3.28	30.16
99	Venezuela, Bolivarian Rep.	3.25	29.13
100	Madagascar	3.23	28.81
101	Botswana	3.23	28.65
102	Tunisia	3.19	27.63
103	Congo, Dem. Rep.	3.18	27.25
104	Brazil	3.17	27.19
105	Lithuania	3.17	27.14
106	Kyrgyzstan	3.17	26.98
107	Tanzania, United Rep.	3.15	26.66
108	Morocco	3.13	26.12
109	Kuwait	3.13	25.98
110	Algeria	3.13	25.90
111	Nicaragua	3.09	25.01
112	Paraguay	3.07	24.47
113	Bangladesh	3.04	23.64
114	Ethiopia	2.90	19.71
115	Georgia	2.88	19.28
116	Liberia	2.81	17.50
117	Cambodia	2.80	16.99
118	Uganda	2.75	15.64
119	Romania	2.70	14.38
120	Egypt	2.69	14.11
121	Malawi	2.69	14.05
122	Nigeria	2.67	13.65
123	Mozambique	2.64	12.76
124	Lesotho	2.25	2.32
125	Yemen	2.16	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.

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
1	Switzerland	6.06	100.00
2	Qatar	5.90	94.72
3	United States of America	5.76	90.56
4	Singapore	5.70	88.53
5	Netherlands	5.65	87.06
6	Iceland	5.62	85.92
7	Finland	5.59	84.93
8	Denmark	5.55	83.82
9	Norway	5.53	83.09
10	Malaysia	5.52	82.84
11	New Zealand	5.51	82.45
12	Germany	5.50	82.20
13	Ireland	5.49	81.95
14	Belgium	5.48	81.53
15	Sweden	5.45	80.64
16	United Arab Emirates	5.45	80.42
17	Israel	5.42	79.69
18	Austria	5.42	79.56
19	Canada	5.33	76.86
20	Costa Rica	5.32	76.57
21	Lebanon	5.32	76.48
22	Bahrain	5.19	72.31
23	Chile	5.18	72.06
24	Australia	5.12	70.09
25	United Kingdom	5.10	69.58
26	Malta	5.06	68.28
27	Luxembourg	5.03	67.23
28	Indonesia	4.97	65.19
29	France	4.95	64.75
30	Cyprus	4.93	64.08
31	Portugal	4.93	63.89
32	Estonia	4.90	63.03
33	Uruguay	4.88	62.52
34	Gambia	4.84	61.28
35	Lesotho	4.83	60.78
36	Azerbaijan	4.81	60.08
37	Philippines	4.72	57.28
38	Argentina	4.70	56.74
39	Kenya	4.69	56.45
40	Czech Republic	4.68	56.10
41	Thailand	4.66	55.47
42	Guatemala	4.65	55.05
43	Colombia	4.63	54.35
44	Ukraine	4.61	53.81
45	China	4.58	52.89
46	Korea, Rep.	4.58	52.80
47	Bhutan	4.57	52.73
48	Greece	4.57	52.45
49	Zambia	4.55	51.88
50	Japan	4.54	51.78
50	Mexico	4.54	51.78
52	Spain	4.54	51.49
53	India	4.53	51.24
54	Brunei Darussalam	4.52	51.08
55	Ghana	4.50	50.51
56	Trinidad and Tobago	4.49	50.19
57	Saudi Arabia	4.47	49.43
58	Italy	4.47	49.40
59	Rwanda	4.46	49.14
60	Laos	4.46	49.08
61	Venezuela, Bolivarian Rep.	4.46	48.95
62	Senegal	4.42	47.90
63	Ecuador	4.41	47.55
64	Jordan	4.40	47.27
65	Pakistan	4.40	47.20
66	Mauritius	4.39	46.85
67	Panama	4.38	46.54
68	Tajikistan	4.35	45.45
69	Burundi	4.34	45.30
70	South Africa	4.32	44.56
71	Cambodia	4.30	43.90
72	Albania	4.26	42.82
73	Oman	4.25	42.53
74	Peru	4.23	41.86
75	Honduras	4.21	41.07
76	Sri Lanka	4.20	40.85
77	Russian Federation	4.19	40.65
78	Slovenia	4.19	40.40
79	Cameroon	4.18	40.31
80	Latvia	4.15	39.32
81	Serbia	4.14	39.00
82	Zimbabwe	4.10	37.79
83	Madagascar	4.04	35.66
84	Dominican Republic	4.02	34.97
84	Nepal	4.02	34.97
86	Lithuania	4.01	34.93
87	Mali	4.00	34.49
88	Botswana	4.00	34.33
89	Poland	3.98	33.98
90	Tanzania, United Rep.	3.97	33.41
91	Algeria	3.93	32.17
92	Hungary	3.91	31.56
93	Uganda	3.90	31.31
94	Ethiopia	3.89	31.12
95	Iran, Islamic Rep.	3.88	30.80
96	Namibia	3.86	30.13
97	Turkey	3.86	30.07
98	Congo, Dem. Rep.	3.86	29.91
99	El Salvador	3.85	29.82
100	Armenia	3.84	29.37
101	Bangladesh	3.83	29.12
102	Kuwait	3.82	28.61
103	Viet Nam	3.80	28.00
104	Montenegro	3.79	27.94
105	Malawi	3.79	27.84
106	Kazakhstan	3.78	27.62
107	Liberia	3.78	27.53
108	Slovakia	3.77	27.18
109	Brazil	3.75	26.38
110	Morocco	3.69	24.67
111	Tunisia	3.68	24.25
112	Croatia	3.67	24.00
113	Moldova, Rep.	3.59	21.55
114	Georgia	3.57	20.72
115	Paraguay	3.56	20.41
116	Bulgaria	3.53	19.39
117	Romania	3.52	19.36
118	Nicaragua	3.50	18.60
119	Bosnia and Herzegovina	3.42	16.12
120	Nigeria	3.29	11.95
121	Mozambique	3.24	10.24
122	Kyrgyzstan	3.20	9.12
123	Egypt	3.18	8.33
124	Yemen	2.98	2.10
125	Mongolia	2.92	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.

Pillar 6

Global Knowledge Skills

6.1.1 Workforce with tertiary education

Labour force with tertiary education (%) | 2017

Rank	Country	Value	Score
1	Canada	64.96	100.00
2	Ukraine	52.55	80.70
3	Singapore	51.57	79.17
4	Russian Federation	51.49	79.05
5	Japan	48.23	73.98
6	Israel	45.89	70.34
7	Korea, Rep.	45.60	69.89
8	Cyprus	44.60	68.33
9	Ireland	43.78	67.06
10	Norway	42.73	65.42
11	United Kingdom	42.65	65.30
12	Lithuania	42.48	65.03
13	Belgium	42.18	64.57
14	Finland	41.68	63.79
15	Luxembourg	40.65	62.19
16	Switzerland	39.96	61.11
17	Sweden	39.87	60.97
18	Spain	39.04	59.68
19	Estonia	38.93	59.51
20	France	38.27	58.48
21	Australia	38.16	58.31
22	United States of America	36.01	54.97
23	Denmark	35.27	53.82
24	Iceland	35.20	53.71
25	Kazakhstan	35.09	53.54
26	Latvia	34.98	53.37
27	Netherlands	34.79	53.07
28	Slovenia	33.87	51.64
29	Austria	33.12	50.47
30	Greece	32.66	49.76
31	Poland	32.64	49.73
32	Georgia	32.63	49.71
33	New Zealand	31.79	48.41
34	Mongolia	30.88	46.99
35	Peru	30.48	46.37
36	Bulgaria	30.39	46.23
37	Venezuela, Bolivarian Rep.	30.28	46.06
38	Armenia	28.83	43.80
39	Panama	28.61	43.46
40	Germany	28.34	43.04
41	Colombia	28.27	42.93
42	Saudi Arabia	27.14	41.17
43	Azerbaijan	26.75	40.57
44	Croatia	26.23	39.76
45	Philippines	25.52	38.65
46	Portugal	25.50	38.62
47	Hungary	25.34	38.37
48	Dominican Republic	25.21	38.17
49	Serbia	25.02	37.88
50	Malta	24.88	37.66
51	Moldova, Rep.	24.43	36.96
52	Montenegro	24.40	36.91
53	Lebanon	24.17	36.55
54	Czech Republic	23.59	35.65
55	Malaysia	23.50	35.51
56	Turkey	23.26	35.14
57	Algeria	22.73	34.31
58	Slovakia	22.62	34.14
59	Trinidad and Tobago	21.84	32.93
60	Brunei Darussalam	21.08	31.75
61	Costa Rica	20.24	30.44
62	Italy	20.18	30.35
63	Romania	19.96	30.00
64	Sri Lanka	19.56	29.38
65	Argentina	19.46	29.23
66	Tunisia	19.35	29.06
67	Brazil	19.31	28.99
68	Kuwait	19.11	28.68
69	Egypt	18.87	28.31
70	Albania	18.70	28.04
71	Qatar	18.21	27.28
72	Kyrgyzstan	18.19	27.25
73	Mexico	17.18	25.68
74	Chile	17.08	25.52
75	United Arab Emirates	16.61	24.79
76	Ethiopia	16.42	24.50
77	Bosnia and Herzegovina	16.18	24.13
78	Thailand	16.06	23.94
79	South Africa	16.03	23.89
80	Botswana	15.89	23.67
81	Tajikistan	15.81	23.55
82	Ecuador	15.35	22.83
83	Paraguay	14.23	21.09
84	Uruguay	12.94	19.09
85	Indonesia	12.22	17.97
86	Namibia	12.17	17.89
87	Nepal	12.08	17.75
88	Viet Nam	12.04	17.69
89	Zimbabwe	11.34	16.60
90	Mauritius	11.27	16.49
91	India	9.95	14.43
92	Bahrain	9.86	14.29
93	Morocco	9.01	12.97
93	Pakistan	9.01	12.97
95	Ghana	8.67	12.44
96	Laos	8.45	12.10
97	Nicaragua	8.12	11.59
98	Yemen	7.92	11.28
99	Honduras	6.57	9.18
100	Congo, Dem. Rep.	6.36	8.85
101	El Salvador	6.20	8.60
102	Bangladesh	5.60	7.67
103	Senegal	5.35	7.28
104	Uganda	5.26	7.14
105	Bhutan	5.22	7.08
106	Madagascar	4.80	6.42
107	Lesotho	4.52	5.99
108	Guatemala	4.13	5.38
109	Cameroon	3.06	3.72
110	Malawi	2.84	3.38
111	Cambodia	2.77	3.27
112	Liberia	2.71	3.17
113	Rwanda	1.68	1.57
114	Mali	1.66	1.54
115	Tanzania, United Rep.	1.11	0.68
116	Gambia	0.67	0.00
	Burundi	n/a	n/a
	China	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Jordan	n/a	n/a
	Kenya	n/a	n/a
	Mozambique	n/a	n/a
	Nigeria	n/a	n/a
	Oman	n/a	n/a
	Zambia	n/a	n/a

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
1	Russian Federation	60.00	100.00
2	Canada	47.70	79.12
3	Armenia	47.40	78.61
4	Israel	47.00	77.93
5	Singapore	42.90	70.97
6	United States of America	42.30	69.95
7	Australia	39.30	64.86
8	Estonia	37.60	61.97
9	Switzerland	36.80	60.61
10	Korea, Rep.	35.40	58.23
11	Norway	35.10	57.72
12	Cyprus	34.80	57.22
13	Luxembourg	34.30	56.37
14	Finland	34.10	56.03
15	Lithuania	33.10	54.33
15	Moldova, Rep.	33.10	54.33
17	United Kingdom	32.40	53.14
18	Belgium	32.20	52.80
19	Georgia	31.90	52.29
20	Denmark	31.50	51.61
21	Sweden	31.10	50.93
22	Netherlands	30.60	50.08
23	France	30.40	49.75
24	Ireland	30.30	49.58
25	New Zealand	30.10	49.24
26	Japan	29.90	48.90
27	Latvia	29.80	48.73
28	Venezuela, Bolivarian Rep.	29.60	48.39
29	Spain	29.30	47.88
30	Austria	26.90	43.80
31	Philippines	26.60	43.29
32	Slovenia	26.20	42.61
33	Azerbaijan	25.40	41.26
33	Germany	25.40	41.26
35	Bulgaria	24.50	39.73
36	Poland	24.00	38.88
37	Greece	23.80	38.54
38	Mongolia	23.70	38.37
39	Kazakhstan	22.70	36.67
40	Costa Rica	21.80	35.14
40	Iran, Islamic Rep.	21.80	35.14
42	Hungary	21.70	34.97
43	Oman	21.20	34.13
43	Panama	21.20	34.13
45	Saudi Arabia	21	33.79
46	Peru	20.80	33.45
47	Qatar	20.30	32.60
48	Serbia	20.00	32.09
49	Colombia	19.50	31.24
49	Czech Republic	19.50	31.24
49	Montenegro	19.50	31.24
52	Bahrain	19.30	30.90
52	Slovakia	19.30	30.90
54	Thailand	18.90	30.22
55	Croatia	18.30	29.20
56	Chile	18.20	29.03
56	Portugal	18.20	29.03
58	Kyrgyzstan	17.60	28.01
59	Malta	16.50	26.15
60	Malaysia	16.40	25.98
61	Jordan	16.20	25.64
61	Mexico	16.20	25.64
63	Turkey	16.10	25.47
64	Lebanon	15.30	24.11
65	Romania	14.50	22.75
66	Italy	14.40	22.58
67	Paraguay	14.30	22.41
68	Sri Lanka	14.10	22.07
69	Ecuador	13.60	21.22
69	Kuwait	13.60	21.22
71	Egypt	13.20	20.54
72	Brazil	13.10	20.37
73	Zimbabwe	13.00	20.20
74	Albania	12.90	20.03
75	Dominican Republic	12.40	19.19
75	Uruguay	12.40	19.19
77	Tunisia	12.30	19.02
78	Bosnia and Herzegovina	10.50	15.96
79	El Salvador	10.10	15.28
80	India	9.90	14.94
81	Honduras	9.80	14.77
82	Nepal	9.60	14.43
82	Trinidad and Tobago	9.60	14.43
84	Indonesia	9.30	13.92
85	Congo, Dem. Rep.	9.00	13.41
86	China	8.80	13.07
86	Pakistan	8.80	13.07
88	Guatemala	8.40	12.39
89	Algeria	8.00	11.71
89	Uganda	8.00	11.71
91	South Africa	7.70	11.21
92	Viet Nam	6.70	9.51
93	Mauritius	5.20	6.96
94	Bhutan	4.60	5.94
95	Senegal	4.20	5.26
96	Rwanda	3.50	4.07
97	Ghana	3.10	3.40
98	Kenya	2.20	1.87
99	Mali	2.10	1.70
100	Lesotho	1.90	1.36
100	Tanzania, United Rep.	1.90	1.36
102	Mozambique	1.70	1.02
103	Cambodia	1.50	0.68
104	Cameroon	1.40	0.51
105	Burundi	1.30	0.34
106	Ethiopia	1.10	0.00
104	Argentina	0.60	0.00
	Bangladesh	n/a	n/a
	Botswana	n/a	n/a
	Brunei Darussalam	n/a	n/a
	Gambia	n/a	n/a
	Iceland	n/a	n/a
	Laos	n/a	n/a
	Liberia	n/a	n/a
	Madagascar	n/a	n/a
	Malawi	n/a	n/a
	Morocco	n/a	n/a
	Namibia	n/a	n/a
	Nicaragua	n/a	n/a
	Nigeria	n/a	n/a
	Tajikistan	n/a	n/a
	Ukraine	n/a	n/a
	United Arab Emirates	n/a	n/a
	Yemen	n/a	n/a
	Zambia	n/a	n/a

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
1	Luxembourg	36.20	100.00
2	Sweden	27.80	76.40
3	Norway	27.40	75.28
4	Denmark	26.00	71.35
5	Netherlands	25.70	70.51
6	Iceland	25.40	69.66
7	Israel	25.20	69.10
8	Finland	25.00	68.54
8	United Kingdom	25.00	68.54
10	Switzerland	24.60	67.42
11	Belgium	23.90	65.45
12	Russian Federation	23.80	65.17
13	Lithuania	23.30	63.76
14	United States of America	22.20	60.67
15	Slovenia	22.00	60.11
16	Australia	21.60	58.99
17	Ireland	21.30	58.15
18	Estonia	20.10	54.78
18	Korea, Rep.	20.10	54.78
20	Montenegro	20.00	54.49
21	Greece	19.40	52.81
22	Poland	18.90	51.40
23	Canada	18.70	50.84
24	Cyprus	18.50	50.28
25	Portugal	18.40	50.00
26	Singapore	18.30	49.72
27	France	18.00	48.88
28	Spain	17.90	48.60
28	Ukraine	17.90	48.60
30	Germany	17.80	48.31
30	Latvia	17.80	48.31
32	Austria	17.50	47.47
33	Malta	17.10	46.35
34	Brunei Darussalam	17.00	46.07
35	Kazakhstan	16.80	45.51
35	New Zealand	16.80	45.51
37	Croatia	16.70	45.22
38	Bulgaria	16.10	43.54
39	Mongolia	15.90	42.98
40	Czech Republic	15.30	41.29
41	Romania	15.20	41.01
42	Venezuela, Bolivarian Rep.	15.00	40.45
43	Italy	14.80	39.89
44	Hungary	14.70	39.61
45	Armenia	14.3	38.48
46	United Arab Emirates	14.20	38.20
47	Moldova, Rep.	13.80	37.08
48	Serbia	13.50	36.24
49	Georgia	12.80	34.27
50	Azerbaijan	12.70	33.99
51	Malaysia	12.40	33.15
51	Slovakia	12.40	33.15
53	Chile	11.70	31.18
54	Saudi Arabia	11.60	30.90
55	Uruguay	11.50	30.62
56	Peru	11.30	30.06
57	Egypt	10.90	28.93
58	Bosnia and Herzegovina	10.80	28.65
58	Panama	10.80	28.65
60	Albania	10.60	28.09
61	Brazil	10.50	27.81
62	Algeria	10.30	27.25
62	Kyrgyzstan	10.30	27.25
62	Lebanon	10.30	27.25
65	Turkey	10.20	26.97
66	Argentina	9.50	25.00
67	Mexico	9.30	24.44
68	Mauritius	9.20	24.16
69	Iran, Islamic Rep.	9.10	23.88
69	Qatar	9.10	23.88
71	Oman	8.90	23.31
72	Bhutan	8.70	22.75
72	Namibia	8.70	22.75
74	Costa Rica	8.30	21.63
75	Ghana	8.10	21.07
76	Kuwait	8.00	20.79
77	Dominican Republic	7.90	20.51
78	Bahrain	7.60	19.66
78	Tajikistan	7.60	19.66
80	Ecuador	7.50	19.38
81	Yemen	7.30	18.82
82	Paraguay	7.10	18.26
83	Viet Nam	6.90	17.70
84	Botswana	6.80	17.42
84	Tunisia	6.80	17.42
86	Liberia	6.40	16.29
86	Sri Lanka	6.40	16.29
88	Nigeria	6.10	15.45
89	Indonesia	6.00	15.17
90	Thailand	5.80	14.61
91	China	5.70	14.33
91	El Salvador	5.70	14.33
93	Guatemala	5.60	14.04
94	Nicaragua	5.20	12.92
95	Philippines	5.10	12.64
96	Bangladesh	5.00	12.36
97	Laos	4.80	11.80
98	Pakistan	4.70	11.52
99	Trinidad and Tobago	4.60	11.24
100	Honduras	4.50	10.96
100	Zambia	4.50	10.96
102	Cambodia	4.40	10.67
103	South Africa	4.20	10.11
104	Senegal	4.10	9.83
105	Gambia	3.80	8.99
106	India	3.70	8.71
107	Zimbabwe	3.50	8.15
108	Malawi	3.00	6.74
109	Ethiopia	2.60	5.62
110	Congo, Dem. Rep.	2.40	5.06
111	Mali	2.30	4.78
112	Colombia	2.20	4.49
113	Madagascar	2.10	4.21
114	Mozambique	2.00	3.93
114	Rwanda	2.00	3.93
116	Morocco	1.80	3.37
117	Nepal	1.70	3.09
118	Uganda	1.60	2.81
119	Lesotho	1.20	1.69
120	Tanzania, United Rep.	0.90	0.84
121	Burundi	0.60	0.00
	Cameroon	n/a	n/a
	Japan	n/a	n/a
	Jordan	n/a	n/a
	Kenya	n/a	n/a

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
1	Israel	8250.47	100.00
2	Denmark	7514.70	91.07
3	Sweden	7153.42	86.69
4	Korea, Rep.	7113.17	86.20
5	Singapore	6729.68	81.55
6	Iceland	6635.11	80.40
7	Finland	6525.01	79.07
8	Norway	6073.24	73.59
9	Ireland	5563.39	67.40
10	Switzerland	5257.30	63.69
11	Japan	5209.97	63.12
12	Austria	5157.52	62.48
13	Germany	4893.15	59.27
14	Netherlands	4842.67	58.66
15	Belgium	4734.04	57.34
16	Canada	4552.49	55.14
17	Australia	4539.49	54.98
18	United Kingdom	4429.58	53.65
19	Luxembourg	4350.87	52.69
20	United States of America	4313.38	52.24
21	France	4307.22	52.16
22	New Zealand	4052.42	49.07
23	Portugal	3928.60	47.57
24	Slovenia	3899.20	47.21
25	Czech Republic	3518.82	42.60
26	Estonia	3305.29	40.01
27	Russian Federation	2979.10	36.05
28	Lithuania	2931.66	35.48
29	Spain	2732.25	33.06
30	Hungary	2645.67	32.01
31	Greece	2629.09	31.81
32	Slovakia	2598.90	31.44
33	United Arab Emirates	2406.57	29.11
34	Malaysia	2273.99	27.50
35	Bulgaria	2243.71	27.13
36	Poland	2158.46	26.10
37	Serbia	2132.77	25.79
38	Italy	2131.48	25.77
39	Tunisia	1964.97	23.75
40	Malta	1930.77	23.33
41	Croatia	1793.15	21.67
42	Latvia	1599.57	19.32
43	Georgia	1336.56	16.13
44	Argentina	1220.00	14.71
45	Turkey	1215.78	14.66
46	China	1205.68	14.54
47	Morocco	1068.96	12.88
48	Ukraine	1037.24	12.50
49	Cyprus	1000.23	12.05
50	Romania	912.42	10.98
51	Brazil	900.30	10.83
52	Thailand	865.40	10.41
53	Montenegro	833.00	10.02
54	Moldova, Rep.	725.74	8.72
55	Kazakhstan	687.64	8.25
56	Egypt	680.30	8.17
57	Viet Nam	672.07	8.07
58	Iran, Islamic Rep.	671.02	8.05
59	Uruguay	645.18	7.74
60	Qatar	603.79	7.24
61	Jordan	598.57	7.17
62	Costa Rica	572.98	6.86
63	Senegal	549.32	6.58
64	Chile	502.10	6.00
65	South Africa	473.12	5.65
66	Bosnia and Herzegovina	404.40	4.82
67	Ecuador	400.71	4.77
68	Kuwait	385.69	4.59
69	Bahrain	368.90	4.39
70	Pakistan	293.65	3.47
71	Mexico	244.18	2.87
72	Venezuela, Bolivarian Rep.	240.35	2.83
73	Kenya	225.03	2.64
74	India	216.18	2.53
75	Oman	215.95	2.53
76	Philippines	187.66	2.19
77	Paraguay	184.06	2.15
78	Mauritius	181.83	2.12
79	Botswana	179.47	2.09
80	Albania	156.10	1.81
81	Namibia	143.32	1.65
82	Colombia	131.96	1.51
83	Sri Lanka	99.74	1.12
84	Indonesia	89.20	0.99
85	Zimbabwe	88.72	0.99
86	El Salvador	63.37	0.68
87	Malawi	48.27	0.50
88	Ethiopia	44.97	0.46
89	Mozambique	41.48	0.42
90	Zambia	40.97	0.41
91	Panama	39.08	0.39
92	Ghana	38.37	0.38
93	Gambia	33.56	0.32
94	Mali	30.79	0.29
95	Cambodia	30.37	0.28
96	Uganda	26.47	0.23
97	Madagascar	24.70	0.21
98	Lesotho	22.83	0.19
99	Honduras	22.77	0.19
100	Guatemala	22.15	0.18
101	Tanzania, United Rep.	18.34	0.13
102	Rwanda	12.35	0.06
103	Congo, Dem. Rep.	7.23	0.00
101	Algeria	18.49	0.08
102	Armenia	12.29	0.00
	Azerbaijan	n/a	n/a
	Bangladesh	n/a	n/a
	Bhutan	n/a	n/a
	Brunei Darussalam	n/a	n/a
	Burundi	n/a	n/a
	Cameroon	n/a	n/a
	Dominican Republic	n/a	n/a
	Kyrgyzstan	n/a	n/a
	Laos	n/a	n/a
	Lebanon	n/a	n/a
	Liberia	n/a	n/a
	Mongolia	n/a	n/a
	Nepal	n/a	n/a
	Nicaragua	n/a	n/a
	Nigeria	n/a	n/a
	Peru	n/a	n/a
	Saudi Arabia	n/a	n/a
	Tajikistan	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Yemen	n/a	n/a

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.

6.1.5 Senior officials and managers

Legislators, senior officials, and managers (%) | 2017

Rank	Country	Value	Score
1	Philippines	17.00	100.00
2	Singapore	16.10	94.64
3	United States of America	15.80	92.86
4	New Zealand	13.70	80.36
5	Egypt	13.10	76.79
6	Estonia	12.10	70.83
7	Lebanon	11.90	69.64
8	Australia	11.40	66.67
9	United Kingdom	11.20	65.48
10	Israel	10.60	61.90
11	Iceland	10.30	60.12
12	Latvia	10.20	59.52
13	Malta	9.40	54.76
14	Lithuania	9.10	52.98
14	Switzerland	9.10	52.98
16	Norway	8.70	50.60
17	Trinidad and Tobago	8.60	50.00
18	Belgium	8.40	48.81
19	Ireland	8.30	48.21
20	Canada	8.20	47.62
21	Bahrain	8.10	47.02
22	Ukraine	7.70	44.64
23	Brunei Darussalam	7.60	44.05
23	United Arab Emirates	7.60	44.05
25	Slovenia	7.50	43.45
26	South Africa	7.30	42.26
27	France	7.20	41.67
27	India	7.20	41.67
29	Moldova, Rep.	7.00	40.48
29	Russian Federation	7.00	40.48
31	Tunisia	6.60	38.10
32	Panama	6.50	37.50
33	Mongolia	6.40	36.90
34	Poland	6.30	36.31
35	Montenegro	6.20	35.71
35	Portugal	6.20	35.71
37	Armenia	6.00	34.52
37	Sweden	6.00	34.52
39	Bulgaria	5.80	33.33
39	Colombia	5.80	33.33
41	Netherlands	5.40	30.95
41	Oman	5.40	30.95
43	Czech Republic	5.20	29.76
43	Kazakhstan	5.20	29.76
45	Brazil	5	28.57
45	Turkey	5.00	28.57
47	Argentina	4.80	27.38
47	Austria	4.80	27.38
49	Malaysia	4.70	26.79
50	Croatia	4.60	26.19
50	Germany	4.60	26.19
50	Hungary	4.60	26.19
53	Sri Lanka	4.50	25.60
54	Mauritius	4.40	25.00
54	Namibia	4.40	25.00
54	Slovakia	4.40	25.00
57	Venezuela, Bolivarian Rep.	4.20	23.81
58	Saudi Arabia	4.10	23.21
58	Spain	4.10	23.21
60	Paraguay	3.90	22.02
60	Thailand	3.90	22.02
62	Italy	3.80	21.43
63	Cyprus	3.70	20.83
64	Georgia	3.60	20.24
65	Finland	3.50	19.64
66	Botswana	3.40	19.05
67	Mexico	3.20	17.86
68	Bosnia and Herzegovina	3.10	17.26
69	Honduras	3.00	16.67
70	Iran, Islamic Rep.	2.90	16.07
70	Serbia	2.90	16.07
72	Algeria	2.70	14.88
72	Tajikistan	2.70	14.88
74	Denmark	2.50	13.69
74	Greece	2.50	13.69
74	Kuwait	2.50	13.69
74	Uruguay	2.50	13.69
78	Dominican Republic	2.40	13.10
79	Japan	2.30	12.50
79	Luxembourg	2.30	12.50
81	Chile	2.20	11.90
81	Pakistan	2.20	11.90
81	Romania	2.20	11.90
84	Cambodia	2.10	11.31
84	Costa Rica	2.10	11.31
84	Qatar	2.10	11.31
87	Bhutan	2.00	10.71
87	Indonesia	2.00	10.71
87	Nicaragua	2.00	10.71
90	Albania	1.80	9.52
90	Bangladesh	1.80	9.52
92	China	1.70	8.93
92	El Salvador	1.70	8.93
94	Yemen	1.60	8.33
95	Laos	1.50	7.74
96	Ghana	1.40	7.14
96	Korea, Rep.	1.40	7.14
96	Lesotho	1.40	7.14
99	Azerbaijan	1.30	6.55
99	Congo, Dem. Rep.	1.30	6.55
99	Liberia	1.30	6.55
102	Kyrgyzstan	1.20	5.95
102	Nigeria	1.20	5.95
104	Ecuador	1.10	5.36
104	Zimbabwe	1.10	5.36
106	Guatemala	1.00	4.76
106	Viet Nam	1.00	4.76
106	Zambia	1.00	4.76
109	Senegal	0.90	4.17
110	Madagascar	0.80	3.57
110	Mali	0.80	3.57
112	Ethiopia	0.70	2.98
112	Morocco	0.70	2.98
112	Peru	0.70	2.98
115	Malawi	0.60	2.38
115	Nepal	0.60	2.38
115	Rwanda	0.60	2.38
118	Gambia	0.50	1.79
118	Tanzania, United Rep.	0.50	1.79
120	Uganda	0.40	1.19
121	Mozambique	0.30	0.60
122	Burundi	0.20	0.00
	Cameroon	n/a	n/a
	Jordan	n/a	n/a
	Kenya	n/a	n/a

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.

6.1.6 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
1	Finland	6.03	100.00
2	United States of America	5.75	91.76
3	United Arab Emirates	5.44	82.89
4	Canada	5.44	82.80
5	Qatar	5.38	81.10
6	Israel	5.34	79.79
7	Malaysia	5.33	79.56
8	Japan	5.32	79.26
9	Singapore	5.20	75.82
10	Greece	5.16	74.53
11	Germany	5.15	74.42
12	Switzerland	5.13	73.57
13	Jordan	5.11	73.01
14	Norway	5.05	71.41
15	Lebanon	5.01	70.30
16	Australia	4.89	66.76
17	United Kingdom	4.89	66.68
18	Iceland	4.86	65.80
19	Netherlands	4.86	65.68
20	Sweden	4.84	65.30
21	Ireland	4.81	64.22
22	Chile	4.79	63.76
23	Azerbaijan	4.75	62.56
24	Ukraine	4.72	61.80
25	New Zealand	4.70	61.21
26	Costa Rica	4.70	61.13
27	Portugal	4.70	61.10
28	China	4.68	60.54
29	France	4.65	59.64
30	India	4.63	59.05
31	Cyprus	4.57	57.45
32	Saudi Arabia	4.56	57.04
33	Indonesia	4.54	56.60
34	Austria	4.53	56.07
34	Italy	4.53	56.07
36	Korea, Rep.	4.51	55.58
37	Iran, Islamic Rep.	4.48	54.70
38	Spain	4.47	54.41
39	Kenya	4.45	53.97
40	Belgium	4.45	53.91
41	Tunisia	4.40	52.34
42	Denmark	4.40	52.28
43	Bahrain	4.38	51.81
44	Estonia	4.33	50.32
45	Trinidad and Tobago	4.3	49.47
46	Armenia	4.30	49.45
47	Turkey	4.26	48.25
48	Russian Federation	4.25	48.10
49	Tajikistan	4.25	48.07
50	Poland	4.19	46.23
51	Mexico	4.18	45.91
52	Sri Lanka	4.17	45.74
53	Egypt	4.12	44.25
54	Thailand	4.12	44.16
55	Lithuania	4.11	43.95
56	Rwanda	4.10	43.66
57	Uganda	4.10	43.49
58	Morocco	4.08	43.11
59	Luxembourg	4.01	40.92
59	Mongolia	4.01	40.92
61	Pakistan	3.98	40.01
62	Panama	3.97	39.95
63	Malta	3.97	39.81
64	Argentina	3.94	39.05
64	Kazakhstan	3.94	39.05
66	Serbia	3.93	38.67
67	Slovenia	3.93	38.64
68	Guatemala	3.91	38.17
69	Mauritius	3.89	37.50
70	Colombia	3.87	36.97
71	Czech Republic	3.83	35.84
72	Philippines	3.83	35.72
73	Oman	3.83	35.66
74	Bangladesh	3.81	35.16
75	Zambia	3.80	34.99
76	Viet Nam	3.80	34.87
77	Nigeria	3.80	34.75
78	Romania	3.78	34.40
79	Ghana	3.78	34.32
80	Congo, Dem. Rep.	3.77	33.85
81	Algeria	3.74	32.97
82	Tanzania, United Rep.	3.72	32.62
83	Montenegro	3.70	31.95
84	Senegal	3.69	31.72
85	Madagascar	3.66	30.64
86	Brunei Darussalam	3.63	29.85
87	Brazil	3.62	29.67
88	Hungary	3.60	29.12
89	Ethiopia	3.60	29.00
90	Bulgaria	3.58	28.42
91	Nepal	3.58	28.39
92	Croatia	3.58	28.33
93	Honduras	3.57	28.18
94	Cameroon	3.56	27.75
95	Kuwait	3.55	27.54
96	Botswana	3.54	27.22
96	South Africa	3.54	27.22
98	Uruguay	3.50	26.11
99	Peru	3.48	25.55
100	Namibia	3.46	25.03
101	Slovakia	3.46	25.00
102	Mali	3.46	24.88
103	Dominican Republic	3.44	24.42
104	Bosnia and Herzegovina	3.44	24.30
105	Latvia	3.40	23.16
106	Malawi	3.39	22.84
107	Ecuador	3.38	22.46
108	Kyrgyzstan	3.31	20.50
109	Albania	3.28	19.71
110	Gambia	3.26	18.98
111	Bhutan	3.24	18.52
112	Cambodia	3.21	17.64
113	Laos	3.20	17.23
114	Yemen	3.16	16.03
115	Moldova, Rep.	3.11	14.84
115	Zimbabwe	3.11	14.84
117	Mozambique	3.11	14.75
118	Burundi	3.05	13.03
119	Georgia	3.02	12.15
120	Venezuela, Bolivarian Rep.	2.92	9.20
121	Lesotho	2.92	9.02
122	Nicaragua	2.84	6.86
123	Paraguay	2.81	6.05
124	Liberia	2.71	3.13
125	El Salvador	2.61	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.

6.2.1 Innovation output

Innovation output sub-index | 2018

Rank	Country	Value	Score
1	Switzerland	67.13	100.00
2	Netherlands	60.19	88.28
3	Sweden	56.94	82.80
4	Luxembourg	52.87	75.92
5	Germany	52.79	75.79
6	United Kingdom	52.37	75.08
7	United States of America	51.81	74.13
8	Finland	51.38	73.41
9	Ireland	51.25	73.19
10	China	50.98	72.73
11	Israel	50.83	72.48
12	Korea, Rep.	49.84	70.81
13	Denmark	49.34	69.96
14	Malta	45.84	64.06
15	Singapore	45.43	63.36
16	France	45.40	63.31
17	Estonia	45.39	63.30
18	Japan	44.49	61.78
19	Iceland	44.26	61.39
20	Czech Republic	43.23	59.65
21	Cyprus	42.30	58.08
22	Belgium	41.47	56.68
23	Norway	41.08	56.02
24	Hungary	40.95	55.80
25	Canada	40.28	54.67
26	Spain	40.20	54.53
27	Austria	40.02	54.23
28	Slovenia	39.82	53.89
29	New Zealand	39.17	52.79
30	Australia	38.30	51.33
31	Italy	38.28	51.29
32	Portugal	37.82	50.51
33	Bulgaria	37.68	50.28
34	Ukraine	36.59	48.44
35	Slovakia	36.42	48.15
36	Moldova, Rep.	35.41	46.45
37	Latvia	35.27	46.21
38	Malaysia	34.26	44.50
39	Poland	33.92	43.93
40	Viet Nam	33.70	43.56
41	Croatia	33.52	43.26
42	Turkey	32.19	41.01
43	Lithuania	31.77	40.30
44	Thailand	31.51	39.86
45	Iran, Islamic Rep.	30.16	37.58
46	Mongolia	30.06	37.41
47	Romania	29.84	37.04
48	Kuwait	29.36	36.23
49	Armenia	29.21	35.98
50	Costa Rica	28.95	35.54
51	Greece	28.75	35.20
52	Chile	28.41	34.63
53	United Arab Emirates	28.36	34.54
54	Montenegro	28.23	34.32
55	Russian Federation	27.91	33.78
56	India	27.83	33.65
57	Serbia	27.42	32.96
58	Uruguay	26.77	31.86
59	Qatar	26.49	31.39
60	Mexico	26.35	31.15
61	Georgia	25.65	29.97
62	Tunisia	25.47	29.66
63	Kenya	25.30	29.38
64	South Africa	24.89	28.68
65	Panama	24.55	28.11
66	Jordan	24.19	27.50
67	Philippines	23.98	27.15
68	Morocco	23.50	26.34
69	Brazil	23.49	26.32
70	Tanzania, United Rep.	23.47	26.29
71	Colombia	22.52	24.68
72	Indonesia	22.47	24.60
73	Bahrain	22.41	24.50
74	Oman	22.18	24.11
75	Dominican Republic	21.89	23.62
76	Saudi Arabia	21.81	23.48
77	Egypt	21.62	23.16
78	Sri Lanka	21.06	22.22
79	Argentina	20.75	21.70
80	Bosnia and Herzegovina	20.60	21.44
81	Peru	20.48	21.24
82	Cambodia	20.32	20.97
83	Madagascar	20.21	20.78
84	Paraguay	20.09	20.58
85	Azerbaijan	20.00	20.43
86	Tajikistan	19.98	20.40
87	Mauritius	19.90	20.26
88	Senegal	19.87	20.21
89	Kazakhstan	19.28	19.21
90	Pakistan	19.19	19.06
91	Lebanon	18.70	18.23
92	Albania	18.39	17.71
93	Guatemala	18.35	17.64
94	Ecuador	18.11	17.24
95	Cameroon	17.60	16.38
96	Zimbabwe	17.36	15.97
97	Mali	17.23	15.75
98	Kyrgyzstan	17.14	15.60
99	Ghana	16.63	14.74
100	Namibia	16.44	14.42
101	Trinidad and Tobago	16.08	13.81
102	Bangladesh	16.01	13.69
103	Honduras	15.99	13.66
104	Botswana	15.85	13.42
105	Malawi	15.72	13.20
106	Mozambique	15.71	13.19
107	Uganda	15.69	13.15
108	Brunei Darussalam	15.63	13.05
109	El Salvador	15.17	12.27
110	Nepal	15.03	12.04
111	Nigeria	14.89	11.80
112	Algeria	14.07	10.42
113	Zambia	12.77	8.22
114	Rwanda	12.59	7.92
115	Yemen	7.90	0.00
	Bhutan	n/a	n/a
	Burundi	n/a	n/a
	Congo, Dem. Rep.	n/a	n/a
	Ethiopia	n/a	n/a
	Gambia	n/a	n/a
	Laos	n/a	n/a
	Lesotho	n/a	n/a
	Liberia	n/a	n/a
	Nicaragua	n/a	n/a
	Venezuela, Bolivarian Rep.	n/a	n/a

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
1	Philippines	55.10	100.00
1	Singapore	67.43	100.00
3	Malaysia	42.97	77.99
4	Laos	33.58	60.94
5	Kazakhstan	30.39	55.15
6	Ireland	29.09	52.79
7	Switzerland	27.08	49.15
8	Viet Nam	26.93	48.87
9	France	26.67	48.40
10	Korea, Rep.	26.58	48.24
11	China	25.24	45.80
12	Iceland	23.25	42.19
13	United Kingdom	21.83	39.62
14	Thailand	21.51	39.04
15	Malta	21.47	38.97
16	United States of America	19.96	36.22
17	Norway	19.28	34.99
18	Kyrgyzstan	18.49	33.55
19	Israel	18.38	33.35
20	Costa Rica	18.26	33.13
21	Brunei Darussalam	17.93	32.54
22	Netherlands	17.78	32.26
23	Ethiopia	17.24	31.29
24	Germany	16.91	30.68
25	Mongolia	16.32	29.61
26	Japan	16.22	29.43
27	Denmark	15.67	28.44
28	Austria	15.31	27.79
29	Mexico	15.29	27.74
30	Australia	14.78	26.82
31	Sweden	14.29	25.92
32	Hungary	14.04	25.47
33	Czech Republic	13.88	25.18
34	Brazil	13.45	24.40
35	Canada	12.93	23.47
36	Belgium	12.54	22.75
37	Latvia	12.51	22.70
38	Rwanda	12.28	22.28
39	Lithuania	11.75	21.32
40	Croatia	11.62	21.08
41	Mozambique	11.61	21.07
42	Greece	11.44	20.76
43	Russian Federation	10.72	19.45
44	Estonia	10.34	18.77
45	New Zealand	10.14	18.40
46	Slovakia	9.83	17.83
47	Colombia	9.83	17.83
48	Uruguay	9.71	17.61
49	Argentina	8.79	15.95
50	Romania	8.50	15.42
51	Poland	8.46	15.34
52	Finland	8.44	15.31
53	Ecuador	8.37	15.19
54	Bulgaria	7.96	14.44
55	Luxembourg	7.60	13.79
56	Italy	7.49	13.58
57	Cyprus	7.28	13.21
58	Ukraine	7.27	13.19
59	Paraguay	7.25	13.14
60	India	7.13	12.93
61	Chile	7.06	12.81
62	Spain	6.98	12.66
63	Slovenia	6.34	11.50
64	Tunisia	6.07	11.01
65	Armenia	5.94	10.77
66	Indonesia	5.79	10.50
67	Panama	5.73	10.39
68	Guatemala	5.45	9.88
69	South Africa	5.29	9.60
70	Portugal	5.29	9.59
71	Zambia	5.27	9.56
72	Zimbabwe	5.21	9.44
73	Mali	4.71	8.54
74	Yemen	4.70	8.52
75	El Salvador	4.62	8.37
76	Dominican Republic	4.38	7.94
77	Peru	4.25	7.71
78	Iran, Islamic Rep.	4.12	7.46
79	Georgia	3.90	7.07
80	Kenya	3.76	6.82
81	Cameroon	3.71	6.73
82	Morocco	3.67	6.66
83	Serbia	3.63	6.59
84	Burundi	3.49	6.33
85	Moldova, Rep.	3.10	5.63
86	Saudi Arabia	2.97	5.38
87	Oman	2.83	5.12
88	Bosnia and Herzegovina	2.61	4.73
89	Honduras	2.48	4.50
90	Lebanon	2.37	4.30
91	United Arab Emirates	2.32	4.21
92	Qatar	2.20	3.98
93	Namibia	2.19	3.98
94	Malawi	2.16	3.91
95	Azerbaijan	2.08	3.78
96	Senegal	2.08	3.77
97	Turkey	2.03	3.68
98	Tanzania, United Rep.	2.02	3.65
99	Nigeria	1.97	3.57
100	Jordan	1.92	3.48
101	Kuwait	1.91	3.46
102	Pakistan	1.91	3.46
103	Uganda	1.83	3.32
104	Ghana	1.51	2.73
105	Gambia	1.25	2.26
106	Venezuela, Bolivarian Rep.	1.13	2.05
107	Bahrain	1.05	1.90
108	Sri Lanka	0.84	1.52
109	Madagascar	0.65	1.17
110	Albania	0.65	1.17
111	Nepal	0.62	1.12
112	Nicaragua	0.49	0.88
113	Egypt	0.49	0.88
114	Cambodia	0.43	0.78
115	Botswana	0.40	0.72
116	Algeria	0.34	0.62
117	Bangladesh	0.30	0.54
118	Trinidad and Tobago	0.13	0.22
119	Mauritius	0.07	0.12
120	Bhutan	0.02	0.04
121	Lesotho	0.00	0.00
	Congo, Dem. Rep.	n/a	n/a
	Liberia	n/a	n/a
	Montenegro	n/a	n/a
	Tajikistan	n/a	n/a

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
1	Luxembourg	57.13	100.00
2	Chile	54.01	93.97
3	France	48.63	83.57
4	Lebanon	46.91	80.24
5	Denmark	46.34	79.14
6	Canada	43.18	73.03
7	Ireland	42.73	72.16
8	Cyprus	40.92	68.66
9	Namibia	40.08	67.04
10	Belgium	39.72	66.34
11	Qatar	37.94	62.90
12	United States of America	35.93	59.02
13	Austria	35.00	57.22
14	Slovenia	34.24	55.75
15	Tunisia	32.17	51.75
16	Philippines	31.84	51.11
17	Mexico	31.71	50.86
18	Turkey	30.80	49.10
19	Estonia	30.20	47.94
20	Romania	30.00	47.55
21	South Africa	29.66	46.90
22	Lithuania	29.55	46.68
23	Guatemala	29.51	46.61
24	Finland	29.40	46.39
25	Malaysia	29.33	46.26
26	Thailand	29.29	46.18
27	Slovakia	29.24	46.09
28	Sweden	29.05	45.72
29	Australia	28.51	44.67
30	Pakistan	28.49	44.64
31	Latvia	28.41	44.48
32	Italy	28.22	44.11
33	Malawi	28.21	44.09
34	Saudi Arabia	27.60	42.92
35	Czech Republic	27.51	42.74
36	United Kingdom	27.06	41.87
37	Israel	26.70	41.18
38	Greece	26.42	40.63
39	Korea, Rep.	26.35	40.50
40	Uruguay	26.25	40.31
41	India	25.60	39.05
42	China	25.51	38.87
43	Egypt	25.26	38.39
44	Spain	25.01	37.91
45	Switzerland	24.93	37.75
46	Japan	24.68	37.27
47	Jordan	23.90	35.76
48	Germany	23.74	35.45
49	Kazakhstan	23.54	35.07
50	Costa Rica	23.18	34.37
51	Netherlands	22.52	33.09
52	Portugal	21.00	30.16
53	Madagascar	20.89	29.94
54	Singapore	20.47	29.13
55	Hungary	20.40	29.00
56	Botswana	20.27	28.75
57	Georgia	20.10	28.42
58	Croatia	19.86	27.95
59	Morocco	18.68	25.67
60	United Arab Emirates	18.67	25.65
61	Nigeria	18.30	24.94
62	Peru	17.80	23.97
63	Ecuador	16.54	21.53
64	Iran, Islamic Rep.	16.15	20.78
65	Trinidad and Tobago	15.96	20.41
66	Cameroon	15.90	20.30
67	El Salvador	14.90	18.36
68	Colombia	14.87	18.31
69	Ghana	14.73	18.04
70	Argentina	13.98	16.59
71	Norway	13.97	16.57
72	Brazil	13.91	16.45
73	Viet Nam	13.86	16.35
74	Ethiopia	13.72	16.08
75	Venezuela, Bolivarian Rep.	13.44	15.54
76	Bulgaria	13.39	15.45
77	Poland	12.08	12.91
78	Indonesia	11.58	11.95
79	Algeria	11.48	11.75
80	Bosnia and Herzegovina	10.93	10.69
81	Panama	8.51	6.01
82	Senegal	8.21	5.43
83	Zambia	7.86	4.76
84	Uganda	7.56	4.18
85	Bangladesh	6.78	2.67
86	Russian Federation	5.40	0.00
84	Albania	19.76	12.87
85	Armenia	17.51	9.97
86	Azerbaijan	14.85	6.54
87	Bahrain	12.48	3.49
88	Bhutan	10.54	0.99
89	Brunei Darussalam	9.77	0.00
	Burundi	n/a	n/a
	Cambodia	n/a	n/a
	Congo, Dem. Rep.	n/a	n/a
	Dominican Republic	n/a	n/a
	Gambia	n/a	n/a
	Honduras	n/a	n/a
	Iceland	n/a	n/a
	Kenya	n/a	n/a
	Kuwait	n/a	n/a
	Kyrgyzstan	n/a	n/a
	Laos	n/a	n/a
	Lesotho	n/a	n/a
	Liberia	n/a	n/a
	Mali	n/a	n/a
	Malta	n/a	n/a
	Mauritius	n/a	n/a
	Moldova, Rep.	n/a	n/a
	Mongolia	n/a	n/a
	Montenegro	n/a	n/a
	Mozambique	n/a	n/a
	Nepal	n/a	n/a
	New Zealand	n/a	n/a
	Nicaragua	n/a	n/a
	Oman	n/a	n/a
	Paraguay	n/a	n/a
	Rwanda	n/a	n/a
	Serbia	n/a	n/a
	Sri Lanka	n/a	n/a
	Tajikistan	n/a	n/a
	Tanzania, United Rep.	n/a	n/a
	Ukraine	n/a	n/a
	Yemen	n/a	n/a
	Zimbabwe	n/a	n/a

SOURCE: Global Entrepreneurship Research Association, Global Entrepreneurship Monitor database (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
1	Estonia	20.76	100.00
2	Botswana	18.37	88.48
3	Malta	17.89	86.17
4	Cyprus	16.56	79.76
5	United Kingdom	15.74	75.81
6	Australia	15.51	74.70
7	Luxembourg	15.35	73.93
8	New Zealand	14.50	69.83
9	Iceland	12.14	58.46
10	Bulgaria	10.89	52.43
11	South Africa	10.22	49.20
12	Denmark	9.91	47.71
13	Mauritius	9.78	47.08
14	Chile	8.93	42.99
15	Singapore	8.62	41.49
16	Georgia	8.37	40.29
17	Norway	8.15	39.23
18	Sweden	8.09	38.94
19	Latvia	8.04	38.70
20	Ireland	6.71	32.29
21	Montenegro	6.70	32.24
22	Mongolia	6.31	30.36
23	Netherlands	6.07	29.20
24	Romania	5.61	26.99
25	Portugal	5.01	24.10
26	Croatia	4.96	23.86
27	Slovakia	4.70	22.60
28	Russian Federation	4.34	20.87
29	Switzerland	4.31	20.72
30	Czech Republic	3.98	19.13
31	Finland	3.95	18.99
32	Belgium	3.72	17.88
33	Peru	3.63	17.45
34	Israel	3.44	16.53
35	Hungary	3.38	16.24
36	Lithuania	3.33	16.00
37	Spain	3.23	15.52
38	Slovenia	3.13	15.04
39	Italy	2.65	12.72
40	United Arab Emirates	2.62	12.58
41	Korea, Rep.	2.58	12.39
42	Brunei Darussalam	2.48	11.90
43	Colombia	2.28	10.94
44	Malaysia	2.26	10.84
45	Kazakhstan	2.24	10.75
46	Oman	2.11	10.12
47	Costa Rica	2.10	10.07
48	Uruguay	2.07	9.93
49	Rwanda	1.95	9.35
50	France	1.84	8.82
51	Serbia	1.76	8.43
52	Moldova, Rep.	1.75	8.39
53	Armenia	1.74	8.34
54	Qatar	1.70	8.14
55	Tunisia	1.67	8.00
56	Poland	1.66	7.95
57	Morocco	1.65	7.90
58	Lesotho	1.55	7.42
59	Ukraine	1.54	7.37
60	Dominican Republic	1.48	7.08
61	Albania	1.35	6.46
62	Germany	1.30	6.22
63	Kyrgyzstan	1.27	6.07
64	Turkey	1.18	5.64
65	Bosnia and Herzegovina	1.13	5.40
66	Zambia	1.12	5.35
67	Namibia	1.09	5.20
68	Azerbaijan	1.03	4.92
69	Thailand	0.99	4.72
70	Nepal	0.98	4.67
71	Ghana	0.90	4.29
72	Kenya	0.84	4.00
72	Panama	0.84	4.00
74	Greece	0.77	3.66
75	Nigeria	0.76	3.61
76	Uganda	0.70	3.33
77	Austria	0.60	2.84
77	Jordan	0.60	2.84
79	Algeria	0.58	2.75
80	Guatemala	0.54	2.55
80	Mexico	0.54	2.55
82	El Salvador	0.53	2.51
83	Sri Lanka	0.51	2.41
84	Saudi Arabia	0.44	2.07
85	Argentina	0.43	2.02
86	Senegal	0.42	1.98
87	Indonesia	0.33	1.54
87	Philippines	0.33	1.54
89	Laos	0.30	1.40
90	Tajikistan	0.18	0.82
91	Japan	0.15	0.67
92	Paraguay	0.14	0.63
93	Brazil	0.13	0.58
94	India	0.11	0.48
95	Bangladesh	0.09	0.39
95	Bhutan	0.09	0.39
97	Malawi	0.08	0.34
98	Madagascar	0.07	0.29
99	Canada	0.06	0.24
99	Pakistan	0.06	0.24
101	Congo, Dem. Rep.	0.04	0.14
102	Ethiopia	0.03	0.10
103	Liberia	0.01	0.00
	Bahrain	n/a	n/a
	Burundi	n/a	n/a
	Cambodia	n/a	n/a
	Cameroon	n/a	n/a
	China	n/a	n/a
	Ecuador	n/a	n/a
	Egypt	n/a	n/a
	Gambia	n/a	n/a
	Honduras	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Kuwait	n/a	n/a
	Lebanon	n/a	n/a
	Mali	n/a	n/a
	Mozambique	n/a	n/a
	Nicaragua	n/a	n/a
	Tanzania, United Rep.	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	United States of America	n/a	n/a
	Venezuela, Bolivarian Rep.	n/a	n/a
	Viet Nam	n/a	n/a
	Yemen	n/a	n/a
	Zimbabwe	n/a	n/a

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
1	Switzerland	24.96	100.00
2	Denmark	23.35	93.55
3	Australia	20.76	83.18
4	Norway	20.31	81.36
5	Singapore	20.05	80.34
6	Sweden	19.80	79.34
7	Finland	19.13	76.66
8	Iceland	19.10	76.52
9	Netherlands	17.48	70.03
10	Slovenia	16.48	66.04
11	Canada	15.62	62.60
12	New Zealand	15.57	62.38
13	Czech Republic	15.07	60.38
14	United Kingdom	14.77	59.18
15	Belgium	14.42	57.75
16	Ireland	14.20	56.88
17	Austria	14.04	56.23
18	Israel	13.65	54.68
19	Luxembourg	13.64	54.66
20	Portugal	13.38	53.60
21	United States of America	12.56	50.29
22	Germany	12.47	49.95
23	Korea, Rep.	12.25	49.08
24	Italy	11.42	45.72
25	Spain	11.34	45.43
26	Estonia	11.26	45.11
27	France	10.34	41.43
28	Greece	9.97	39.92
29	Slovakia	9.85	39.45
30	Croatia	9.83	39.37
31	Poland	8.68	34.77
32	Cyprus	8.25	33.02
33	Lithuania	7.71	30.88
34	Japan	7.61	30.48
35	Serbia	7.19	28.80
36	Malta	6.89	27.56
37	Latvia	6.48	25.92
38	Malaysia	6.43	25.73
39	Hungary	6.35	25.40
40	Romania	5.20	20.82
41	Brunei Darussalam	5.06	20.24
42	Iran, Islamic Rep.	5.05	20.20
43	Qatar	4.97	19.87
44	Tunisia	4.57	18.26
45	Turkey	4.2	16.79
46	Montenegro	4.14	16.56
47	Russian Federation	4.09	16.37
48	Chile	3.74	14.94
49	Bulgaria	3.62	14.46
50	China	3.07	12.28
51	Saudi Arabia	2.80	11.20
52	Brazil	2.56	10.23
53	Uruguay	2.34	9.34
54	United Arab Emirates	2.32	9.26
55	Lebanon	2.30	9.17
56	South Africa	2.09	8.36
57	Argentina	1.95	7.79
58	Kuwait	1.79	7.12
59	Armenia	1.78	7.09
60	Oman	1.71	6.83
61	Jordan	1.70	6.79
62	Ukraine	1.64	6.55
63	Georgia	1.56	6.21
64	Bosnia and Herzegovina	1.45	5.77
65	Bahrain	1.41	5.62
66	Thailand	1.39	5.52
67	Trinidad and Tobago	1.35	5.38
68	Colombia	1.25	4.96
69	Mauritius	1.23	4.91
70	Morocco	1.14	4.52
71	Mexico	1.12	4.47
72	Egypt	1.11	4.40
73	Algeria	1.08	4.28
74	Botswana	0.99	3.92
75	Kazakhstan	0.87	3.44
76	Moldova, Rep.	0.83	3.30
77	India	0.82	3.26
78	Costa Rica	0.77	3.04
79	Albania	0.67	2.63
80	Ecuador	0.66	2.60
81	Bhutan	0.50	1.96
82	Azerbaijan	0.49	1.91
83	Sri Lanka	0.48	1.89
84	Pakistan	0.47	1.83
85	Namibia	0.43	1.66
86	Panama	0.39	1.52
87	Mongolia	0.37	1.42
88	Ghana	0.34	1.33
89	Peru	0.31	1.22
90	Viet Nam	0.31	1.20
91	Indonesia	0.29	1.13
92	Cameroon	0.28	1.08
93	Venezuela, Bolivarian Rep.	0.27	1.03
94	Senegal	0.22	0.85
95	Gambia	0.22	0.85
96	Nigeria	0.20	0.76
97	Kenya	0.20	0.76
98	Nepal	0.19	0.71
99	Zimbabwe	0.18	0.68
100	Kyrgyzstan	0.16	0.61
101	Bangladesh	0.15	0.58
102	Philippines	0.15	0.56
103	Paraguay	0.14	0.53
104	Uganda	0.13	0.50
105	Laos	0.12	0.46
106	Malawi	0.11	0.40
107	Ethiopia	0.11	0.39
108	Zambia	0.10	0.38
109	Lesotho	0.10	0.37
110	Rwanda	0.09	0.34
111	Tanzania, United Rep.	0.09	0.34
112	Cambodia	0.07	0.25
113	Nicaragua	0.06	0.19
114	Tajikistan	0.05	0.17
115	Guatemala	0.05	0.16
116	Mali	0.05	0.15
117	El Salvador	0.04	0.14
118	Madagascar	0.04	0.12
119	Yemen	0.04	0.12
120	Honduras	0.04	0.10
121	Liberia	0.04	0.10
122	Mozambique	0.03	0.10
123	Dominican Republic	0.03	0.07
124	Congo, Dem. Rep.	0.01	0.02
125	Burundi	0.01	0.00

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.[1] 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:[2]

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 multidimensional 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.[3] In our data set, there were three variables with outliers.[4] 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:[5]

$$\ln\left[(\max \times \text{factor} - 1) \times \frac{(\text{value} - \min)}{(\max - \min)} + 1\right]$$

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:[6]

$$-100 \times \frac{(\text{value} - \min)}{(\max - \min)}$$

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 GTCI.

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)

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)

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)

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

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)

1.3.4 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)

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

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 GROW

3.1 Formal Education

Enrolment

3.1.1 Vocational enrolment

Vocational enrolment (%) | 2017

Vocational enrolment refers to the total number of students enroled in vocational programmes in secondary education, expressed as a percentage of the total number of students enroled 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)

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)

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

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)

3.2.2 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)

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

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)

3.3.2 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

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)

3.3.4 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, compositing 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)

5.2 Employability

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

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

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)

5.2.3 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 GII, 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)

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).

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.

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 attracts, 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)

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)

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

Tata Communications (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.