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The Global Talent Competitiveness Index 2018

Diversity for Competitiveness



Bruno Lanvin and Paul Evans, Editors

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Preface

With this 2018 edition, the Global Talent Competitiveness Index (GTCI) report completes its fifth year. By pioneering the concept of talent competitiveness and anchoring it to an original model and a set of authoritative measures, our expectation five years ago was that the GTCI would attract growing attention to the challenges of talent attraction, development, and retention. This has proved correct. During this last year alone, more than 1,500 press articles from around the world reported GTCI findings, often with extensive reflection on the challenges highlighted by the report. The usefulness of its robust model in providing new insights has been corroborated by reactions from government and business leaders at presentations and conferences in places as diverse as Belgium, Botswana, Denmark, Estonia, France, Jamaica, Jordan, Luxembourg, the Netherlands, Singapore, South Africa, Spain, Switzerland, and the United Arab Emirates, to name only a few. Academic scholars are paying increasing attention to the country and city challenges that the GTCI illuminates, with various forthcoming scholarly books that build on GTCI measures and insights.

Entitled 'Talent and Technology', last year's report looked at how automation would influence the future of work. So it was natural for the GTCI to focus on *Diversity for Competitiveness*, since diversity plays such a critical role in linking talent policies to innovation strategies. Views of diversity have evolved significantly during the last few decades. In the ethos of standardisation that characterised the 20th century, diversity was problematic, a feature of society largely ignored; today it is increasingly recognised as a resource for innovation and problem solving that we are beginning to tap through collaboration between people with different personalities, knowledge sets, experiences, and perspectives.

How are organisations leveraging diversity? How are they building the more inclusive norms of organisational behaviour that appear to be necessary? How are educational systems around the world developing the skills needed in collaborative problem solving? How are cities capitalising on diversity? Which nations are leading the way in channelling diversity in productive ways? These are some of the questions behind this report. There are of course many more aspects of diversity that deserve special attention. Previous editions of the GTCI—notably the GTCI's 2015–16 report on international mobility and 'brain circulation'—have focused on some aspects of diversity, such as the openness of economies to talent from abroad. The concept of diversity is also intricately linked to that of inclusion. It is hence important to consider additional facets of diversity, including in particular gender, culture, and ethnic background. How will the

call for greater inclusiveness and collaboration open up opportunities for demographic groups that in the past have often been sidelined on the talent scene?

The GTCI's model went through some incremental changes this year, notably the introduction of new variables that provide indicators at the country level of collaboration across the boundaries of diversity. The broad coverage of countries was maintained, indeed increasing from 118 to 119 countries. The special section on Cities and Regions that was introduced last year has been greatly broadened to cover 90 cities across the world, in comparison with 46 last year. Here also the Global Cities Talent Competitiveness Index (GCTCI) model has been updated, making it more clearly distinct from the country-based GTCI one. Case studies have also been included in that section, describing how individual cities have chosen to deal with diversity and leverage it as a tool for competitiveness.

Collaboration between social partners in society is vital to confronting the immense challenges that we face in a world that is increasingly dependent on talent. The GTCI itself is a partnership, and we owe deep thanks to our founding partner, namely Singapore's Human Capital Leadership Institute (HCLI). Our formal collaboration has come successfully to its five-year end, although we value the informal exchanges that continue. Continuity is provided by our close partnership with the Adecco Group, and we are delighted to welcome a global high-technology organisation, Tata Communications, as our new partner. Our thanks go to the executives 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 in previous years, we hope that this report makes for good reading for those interested in talent-related issues. Your feedback is always appreciated!

Bruno Lanvin

Executive Director for Global Indices, INSEAD

Paul Evans

Academic Director of the Global Talent Competitiveness Index, the Shell Chaired Professor of Human Resources and Organisational Development, Emeritus, INSEAD

The Adecco Group | Foreword

Today's world economy stands out for its complexity, uncertainty, and breathtaking pace of technological change. Disruption has become the new normal. Keeping abreast of developments requires extraordinary understanding and agility. Both can be enhanced by greater diversity and inclusion. For this reason, together with INSEAD and Tata Communications, we are pleased to share the 2018 GTCI, which focuses on 'diversity and talent competitiveness'. This is another opportunity to share learning and best practices to improve the talent strategies of our countries, cities, and companies.

Previously, diversity principally signified compliance—achieving the numbers and demonstrating good corporate citizenship. Then it began to be promoted as a tool to match the different strata of societies in which companies operated to better understand and predict stakeholders' needs. Eventually, diversity has come to be understood as an essential enhancer of corporate productivity and performance. Recruiting the best talent is essential. But the evidence shows that diversity can actually trump talent. Cognitively diverse teams regularly outperform their counterparts comprising 'only' the highly gifted by significant margins. While the former may have the edge in routine tasks and 'business-as-usual' situations, examples show diverse groups' superiority when it comes to complex problem solving and innovation in conditions of ambiguity.

While such findings are relatively uncontroversial nowadays, the 2018 GTCI results show it is difficult to find an absolute champion of diversity and inclusion. Even top-ranking GTCI countries such as Switzerland, Singapore, and the United States can boast high results in some variables related to diversity and inclusion, but never an unequivocal position. Switzerland, for example, does not score as well as the top GTCI position would imply in variables related to gender equality. The Nordics score amazingly in all variables related to internal openness and social mobility, but struggle in external openness, and hence in attracting talent.

That is because ensuring diversity is challenging. Experience from personal relationships shows humans tend to prefer bonding with people like themselves—it is simply easier and less taxing to count on common language and traits. By contrast, diversity requires more commitment, with excesses in value diversity putting social cohesion at risk. But excellence stems from embracing diversity and overcoming the challenges. Achieving the superior performance that diversity can produce requires accompanying measures: most notably, a commitment to social skills and collective intelligence. Just think of all those times a team of ill-coordinated star soccer players has been beaten by a less sparkling, but more cohesive, rival.

The 2018 GTCI shows that such hurdles can be overcome by boosting openness—by shaping multicultural societies and by encouraging individuals to gain international experience. 'Brain circulation', which occurs in the context of open environments and international exposure, boosts diverse personal experience—and therefore cognitive diversity. Learning through exposure to different cultures and being challenged by different systems stimulates deeper and more complex thinking, problem solving, flexibility, and creativity.

How should we stimulate such traits? Starting early is crucial. Nurturing a culture of diversity and inclusion begins in the family and at school. Formal education is essential to building the skills needed for a more inclusive world, including appreciating diversity and collaborative skills. We must learn better how to interact effectively with people who are different; we must burnish our intercultural knowledge, and our empathy, openness, and respect for what is different. And we must refocus education on collaborative, challenge-oriented programmes.

Diversity does not work just by ticking boxes—indeed, that can backfire. What is essential is to invest in developing a culture of inclusion. People not only need to be different, they need to be fully involved. Agile, flexible organisations that are open to fast changes tend to foster cross-fertilisation across teams and individuals. That means moving from vertical, hierarchical organisational structures to flat collaborative ones. Accelerating speed to market demands the elimination of internal silos and the creation of small interdisciplinary teams in their stead.

Achieving such aims requires action from both governments and employers. Our political leaders must focus more on innovation in education policy and on stimulating openness. That also applies to administrative structures: just take the case of Zurich. Switzerland's business and finance capital is ranked 1st in this year's cities section. Zurich scored highly for openness, business-government relations, and international relations.

Employers, for their part, must set diversity and inclusion as priorities from the top. It starts with ensuring that companies have effective mechanisms to govern, monitor, and guarantee anti-discrimination across all levels of their operations, and continues with operationalising diversity. This means fostering cultures of inclusion, through training and by creating environments in which everyone feels respected and heard, beyond any purely superficial 'identity diversity.' The journey to excellence is long and challenging, but the promise of a shared future, overcoming the fractures of our age, is worth it.

Alain Dehaze

Chief Executive Officer, The Adecco Group

Tata Communications | Foreword

On behalf of Tata Communications, I would like to extend our warmest thanks for the opportunity to join INSEAD and the Adecco Group in supporting the Global Talent Competitiveness Index (GTCI) in this, our very first year of partnership. This annual report's scope, depth, and rigour reflect a philosophy with which we can readily identify.

As a technology business connecting our clients and their customers throughout the world, we thrive on diversity in all its forms. It is the lifeblood that flows through the teamwork, fresh ideas, and operational excellence on which they—and we—depend. So the theme of this year's GTCI report, 'Diversity for Competitiveness', is a perfect fit not only for Tata Communications, but also for the countless other enterprises and organisations that take a similarly broad world view of their ambitions.

In this, the theme adds richly to the archives of the GTCI report programme to make the index an indispensable reference and tool for any management team wishing to take stock of the global talent competitiveness picture and inform its future strategy. We look forward to further INSEAD/Adecco collaboration.

As individuals increasingly shape their experience of the world around their personal preferences and aspirations, it follows that this resource holds huge potential value for the world of work and business—especially when leveraged through the lens of powerful network technology and Big Data. The diversity and inclusion agenda is therefore wholly deserving of a place at the very heart of business strategy when it comes to designing organisational frameworks, developing the staff that populate them, and creating forward-facing working environments. The urgency to make this a priority is underlined at a time when the human-technology relationship is evolving exponentially—and is poised to take us into a future where speed-of-light change is the one true constant.

The idea that diversity delivers to the bottom line is one that is supported by recent research (see Chapter 3). Moving towards the goal of furthering a more diverse workplace, we have had to take a long hard look at ourselves to understand how we, as a global tech player, can tip the balance towards the kind of diversity that talented millennials not only prioritise and expect, but that also makes sound business sense.

Acknowledging that, for too long and for too many businesses, diversity has been a tough topic about which to engage the workforce, we took a top-down approach to our key gender initiative Winning Mix—starting with the entire 200-strong management team. By establishing its importance as the catalyst for our strategy, we paved the way for its dissemination among the many thousands of employees in the international teams they lead. A comprehensive programme covering all aspects of talent,

recruitment, training, and retention is now embedded across the business, constantly evolving and adapting, and in its third year of delivering results.

At the same time that we are reaching out to more women, we are also taking steps to broaden our talent pool in other directions. AI-driven technology is poised to match our job descriptions to diverse profiles internally and worldwide—programmed to support our 'non-quota' recruitment process with suitably qualified shortlists that take diversity fully into account. AI also has the potential to take diversity into exciting but hitherto little explored dimensions—a thought with which we concur in light of Professor Ken Goldberg's work on 'Multiplicity' (see Chapter 3). This positions the global community at the dawn of a positive new age when diverse groups of people and machines will work together to combine machine learning with human intuition—creatively expanding our collective capability and achievement.

We look forward to sharing—and learning—even more, as diversity in all its forms consolidates its position as the key driver of the digital business age.

Vinod Kumar

*Chief Executive Officer and Managing Director,
Tata Communications*

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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

Paul Evans (Academic Director)

Emeritus Professor of Organisational Behaviour and
Shell Chaired Professor of Human Resources and
Organisational Development, Emeritus

Eduardo Rodriguez-Montemayor (Lead Researcher)

Senior Research Fellow, Economics and
Political Science Department

Juan Pizarro (Researcher, Cities and Regions)

Virginie Bongeot Minet (Coordinator)

Editing Team

Hope Steele

Editor, Steele Editorial Services

Neil Weinberg

Principal, Neil Weinberg Design Group

Nathalie Vialle

Proofreader

Chapters

CHAPTER 1

DIVERSITY AS A LEVER FOR TALENT COMPETITIVENESS

Bruno Lanvin, Paul Evans, and Eduardo Rodriguez-Montemayor

INSEAD

It is time for parents to teach young people early on that in diversity there is beauty and there is strength.

— Maya Angelou (American poet)

世界多样性是人类社会的基本特征，也是我们今天看到的生动活泼的世界的关键条件

Diversity in the world is a basic characteristic of human society, and also the key condition for a lively and dynamic world as we see today.

—Hu Jintao

الكثير من الزهور المختلفة تشكل باقة

A lot of different flowers make a bouquet.

— Old proverb of Muslim origin

विविधता में एकता प्राप्त करने की हमारी क्षमता हमारी सभ्यता की सुन्दरता और परीक्षा होगी।

Our ability to reach unity in diversity will be the beauty and the test of our civilisation.

— Mahatma Gandhi

Comment voulez-vous gouverner un pays qui a deux cent quarante-six variétés de fromage?

How can you govern a country which has 246 varieties of cheese?

— Charles de Gaulle

Talent diversity has long been heralded as a key ingredient needed to build innovative teams and to equip companies and organisations with the ability to address the needs of markets and operations in multicultural environments. More recently, diversity was advocated as a way to enhance the performance and effectiveness of boards, as well as to influence national and regional strategies in a broad array of domains, from social policies to cultural branding. Today, rapid changes affecting the talent arena and world of work (explored in the GTCI's last edition on *Technology and Talent*) call for an operational and strategic

definition of diversity that governments, enterprises, and individuals can translate into higher levels of competitiveness.

Malcolm Forbes once defined diversity as *'the art of thinking independently together'*. Indeed, over the last few decades, many organisations, public and private, have learned that there is a difference between singing in unison (uniformity) and singing in harmony (diversity), and that this difference can be measured in terms of efficiency, competitiveness, and innovation. Yet a number of institutional, social, and cultural obstacles remain in the way of those who aim to stimulate and manage diversity—from

the level of countries and cities down to that of small teams and individuals.

This fifth edition of the *Global Talent Competitiveness Report* (GTCI) aims to inform the current debate around diversity, providing practical tools and approaches to leverage the full potential of diversity as a pillar of innovation, sustainability, and ultimately competitiveness. The overriding question that the GTCI 2018 tries to tackle is: how can diversity be generated, enhanced, and leveraged by governments, regions, cities, corporations, teams, and individuals to design and implement the talent strategies required in the uncertain future that lies ahead of us?

The various chapters in this report provide different lenses through which we can view and understand diversity. In this opening chapter, we deal with three key issues, namely: (1) how should one define diversity? (2) how can diversity be addressed, leveraged, and managed at various levels of action and decision making? and (3), more generally, what do the current GTCI data tell us about how talent competitiveness is evolving globally?

DEFINING DIVERSITY

There is no agreed definition of *diversity*.

Whether we turn to economics, sociology, or psychology, diversity is generally described as the opposite of uniformity. It is relatively easy to agree on a mathematical definition of diversity, which offers both absolute and relative measures of what diversity means within a specific group of individuals.¹ Such definitions have been used successfully in the field of bio-diversity, for example. However, when used in the socioeconomic field, the term *diversity* is generally viewed in the operational or political context of limiting or fighting the exclusion of one or several specific groups from a particular entity, process, or structure. Its definition (implicit or explicit) is then tightly linked to the group(s) in question. This is why policies and literature have focused on specific types of diversity, including cultural or linguistic diversity, gender diversity, and age and ethnic diversity, to name only a few.

The purpose of this report is different: it is to look at diversity as a component of talent competitiveness. How does diversity help nations, cities, and organisations to be more productive and innovative, and more competitive? And how do nations, cities, organisations, and individuals need to equip themselves to live and operate in diverse environments and to maximise the benefits of diversity?

So, without disputing its value, we shall not use a mathematical (absolute) definition of diversity. Instead we shall rely on a typology, grounded in research, that should make immediate sense to those who have the responsibility to work, innovate, manage, and above all lead in modern nations, cities, and organisations.

One way to establish an operational typology of diversity is to ask ourselves what kind of diversity is relevant to problem-solving and innovative tasks. Many kinds of differences get lumped together under the rubric of diversity: race, age, gender, functional differences in expertise and experience, and differences in attitudes, beliefs, and personality. Yet it is not always easy to tell what differences 'make a difference'. Guided by the

rich research in this domain that is discussed further in **Chapter 6**,² three types of diversity can be distinguished.

The first is cognitive diversity—diversity of knowledge, experience, and perspectives or ways of tackling problems. This is also called *acquired diversity* (see **Chapter 4**) because it encompasses not what you are born with but what you acquire at school and through experience. And as network theory reminds us, this should be extended to include the knowledge that people can acquire through social networking and distributed knowledge systems.

By and large, the abundant research generated by this theme over recent decades points to the same conclusion: cognitive diversity is associated with higher performance and creative innovation on problem-solving and predictive tasks.³ To use the phrase of one leading researcher on diversity, '*diversity trumps talent*'—that is, cognitively diverse teams will outperform teams of the most talented individuals by a sizeable margin.⁴ This is evident in the composition of top management teams in organisations, in integrated product development processes, in the use of multifunctional teams, and in project work.⁵ Cities and nations can stimulate innovation by ensuring an appropriate degree of openness to foreign talent with relevant skills and perspectives.

The problem with cognitive diversity is that it is hard to measure—and to determine *what* knowledge and *which* perspectives will stimulate creative problem solving on a given task. **It is much easier to measure a second type of diversity, namely identity diversity.** This includes the visible demographic categorisations that have traditionally been used to circumscribe diversity, such as gender, ethnic background, religious belief, sexual preference, nationality, and age. Although it has been firmly established that a group of people with diverse individual expertise (cognitive diversity) would be better than a homogeneous group at solving complex problems, it is less obvious that demographic diversity should give the same results. Yet the predominantly US research shows that demographically diverse groups do indeed outperform homogeneous groups on some occasions.⁶ For example, some studies have found that financial firms with more women managers perform better and are more profitable.⁷ The important point to be made here is that it is not being male or female, black or white, that leads to increased performance; it is the increased cognitive diversity (and possibly the greater collaboration shown by mixed gender teams, as discussed later in the chapter).⁸ There is a probability that bringing more women, for example, into senior leadership and board positions will lead to broader perspectives and more creative ways of tackling problems, as well as helping remove the unconscious biases that prevent women and other outgroups from being given challenging opportunities. A key issue associated with identity diversity is inclusion, because it is inclusion of diversity of thought and perspectives that opens doors to people who can contribute—regardless of gender, ethnic background, or culture of origin.⁹

The third type of diversity is preference (or value) diversity. This refers to the differences in fundamental interests and values that may exist among individuals, as well as among

organisations, cities, and nations. People with different values will have differing views of missions, goals, and the aim of a task, sometimes leading to deep conflict rather than productive discussion. Take the example of teams in biotech firms made up of scientists and executives.¹⁰ By virtue of their training, the scientists embrace experimentation, accept failure as part of the discovery process, and value the continued pursuit of breakthroughs, regardless of time horizon or potential for commercial applications. That mindset jars their MBA-trained peers, who seek predictability in results and prefer to kill projects that fail to meet expectations. Where value diversity is strong, a great deal of time and energy may be lost on unproductive and unresolved conflict, so organisations tend to recruit, socialise, and promote people with a certain degree of ‘cultural’ or value fit. However, this is a fine balancing act since it can easily lead to cloning or the elimination of cognitive diversity.

From an operational point of view, it is very important to acknowledge that, although there is agreement across the research and studies that diversity, notably cognitive diversity, is a key to innovation and complex problem solving, there is also agreement that **there is a price to all three types of diversity**. It is not easy to work in a diverse team or organisation. It requires a high level of social and collaborative skills, and it means finding ways to overcome the unconscious biases that we all hold. Diversity can fuel creative problem solving but, when managed imperfectly, it can also lead teams and organisations into unproductive, frustrating, and time-consuming conflicts. The importance of *collaborative inclusion* is discussed further in **Chapter 6** of the report.

FROM INDIVIDUALS TO NATIONS: LEVERAGING DIVERSITY AT FIVE LEVELS

Diversity has practical and operational value as a tool for competitiveness if it is considered at the different levels of decision making where it can make a difference. In line with the philosophy and purpose of the GTCI, five key levels of analysis are considered here: individuals, teams, organisations, cities, and nation states.

The Benefits of Diverse Personal Experiences

While the 20th century was characterised by standardisation—of schools, products, services—today we face the reality that every one of us is unique and different. We each have different genes, personalities, and families, and our different experiences accentuate this. As **Chapter 5** by the OECD indicates, the educational reform that has been underway across the world in recent years is focused on tapping into those differences rather than suppressing or ignoring them. The competences for a global and inclusive world build on individual diversity and collaboration and must be inculcated from early stages of education. The OECD’s Programme for International Student Assessment (PISA) is expanding in order to measure such global competences, in addition to the basic skills in maths, reading, and problem solving that it currently assesses. These competences give humans the edge in a future where technology is taking over work that is standardised and routine, as discussed in the GTCI 2017.

People develop through diverse and challenging personal experiences combined with integrative sense making of those experiences, and thereby they become cognitively more complex. This is illustrated by recent research on how international experience develops creativity and complex thinking.¹¹ Children from bicultural families display deeper information processing ability, greater perspective taking, and less inter-ethnic tension.¹² In-depth international experience, acquired through education abroad or via work assignments in other countries, not only brings cultural fluency but also nurtures the creative mindset, enhances problem-solving capabilities, and expands the networks that are needed to succeed in the global knowledge economy.¹³ This is a robust finding that has been replicated in different cultures and regions.¹⁴ By way of illustration, there are many creative individuals who did their best work while they were living abroad. Picasso, Handel, Hemingway, and Stravinsky all created their most well-regarded work while living in foreign countries. The movement of talented people between countries, known as ‘brain circulation’, leads to new knowledge and creative ideas—the GTCI 2015–16 provides some examples, including the leaders of creative industries such as fashion; that report also notes that a surprisingly high percentage of entrepreneurial inventors are immigrants or belong to ethnic minorities.

The Benefits of Diversity for Teams

The benefits of diversity are more visible and measurable at the level of teams than they are at the level of individuals—as are the costs. In fact, it is through teamwork that diversity of experience, expertise, and perspective pays off on complex tasks. If jobs were the focus of the 20th century, teams are what is important in the 21st century. As discussed in **Chapter 6**, diverse teams outsmart teams of more talented but similar individuals in terms of innovation and performance. The evidence is clear. But it is equally clear that diversity means conflict and communication problems: the greater the diversity, the higher the risk that this *social process loss*, as it is called, will undermine the potential of teams for performance, frequently leading the team to implode or explode. Hence the importance of collaborative and interpersonal skills, as mentioned earlier. Among the pioneering companies that are built on these insights about team diversity is Ideo, the award-winning design consultancy, complementing diversity of their project teams with perspective changing experiences outside and with process lessons to ensure innovation (at certain stages in the team process rigid norms are imposed on the teams).¹⁵

Cultural diversity is important for teams as well. Multicultural teams outperform culturally uniform teams on creative tasks, but only if members are able to communicate effectively and manage the team process—though women in countries like China may see gender inequality as less unfair than those in the United States.¹⁶

The Benefits of Diversity for Organisations

A growing number of organisations have realised that diversity is a resource that can enhance performance, rather than just

As a global leader in professional and educational services, our most valuable asset is our staff. Diversity in hiring and in promoting personnel is core to our success. We would not have grown to our present size and success in over 100 offices in all continents without insisting on hiring the most talented regardless of national origin, gender, or religion. We also have a strong legacy in the promotion and appointment of female professionals to high executive positions. We have created an environment in which all our personnel feel valued and encouraged to bring to us great ideas for improvement and growth.

— T. Abu-Ghazaleh,
GTCI Advisory Board Member

being a constraint imposed by anti-discrimination legislation. A member of the GTCI Advisory Board, Talal Abu-Ghazaleh—the founder and chairman of the Jordan-based TAG-Org group of 140 companies in intellectual property, accounting, and consultancy services—views diversity as core to success in a sector that depends on talent and innovation. A truly diverse and inclusive corporate culture is rapidly becoming a competitive advantage for attracting talent and building a sustainable high-performing workplace that is flexible and innovative. The world leader in human resource (HR) solutions, the Adecco Group, is a case in point, as seen in **Chapter 2**. Guided by its philosophy of ‘talent without labels’, Adecco goes beyond fairness in employing under-represented groups, embracing a holistic approach to thinking about diversity. It offers training and career development opportunities to everybody, guided by merit. As a global provider of workforce solutions, Adecco plays a critical role in building the cooperation between business, government, and civil society that is needed in the area of inclusion. In **Chapter 3**, Tata Communications offers another example of how to move diversity from box-ticking compliance to driving agility and performance capability, steered by appropriate metrics. Given its position in the fast-moving high-technology sector, Tata Communications looks at the unfolding future as it explores where the diversity agenda is heading in the age of artificial intelligence (AI).

How are organisations leveraging diversity for innovation and performance? Based on a review of the large body of research undertaken during the last 20 years and on the practice of leading corporations around the world, **Chapter 6** outlines four channels for leveraging diversity. The first is *injecting diversity* into the firm by avoiding hidden biases in recruiting and HR practice. Since the cognitive diversity that adds value is difficult to measure and evaluate, AI and data analytics hold the prospect

of cutting through such biases and stereotypes, focusing on the substantive cognitive competences that characterise high performers. The second channel is *educating and developing the skills to handle diversity*. This involves training people so that they are aware of the biases that influence their judgments and decisions concerning other people. More importantly, it also involves developing the collaborative skills that are vital in diverse teams. The third channel is *building inclusive norms of behaviour* so that all people, regardless of demographic qualities, have their voices heard without being coloured by others’ unconscious biases and stereotypes. Inclusion is an essential part of deep cultural change that is underway in organisations, and it is linked to a fourth channel focused on *organising work around agile project teams so as to harness that diversity*. In today’s globalised and fast-changing world, organisations have to adapt and innovate quickly.

Diversity goes hand in hand with inclusion. The latter is all about behavioural change, starting above all with leadership. This is the focus of **Chapter 4** by the New York-based Center for Talent Innovation. It highlights two inter-related practices to facilitate a culture of innovation: building diversity into leadership and fostering inclusive leadership behaviours. Their research emphasises the importance of six inclusive leadership behaviours such as making sure that everyone gets heard, and making it safe to propose novel ideas. High-performing organisations build confidence so that people can express views and act.

The Benefits of Diversity for Cities

Descartes, exiled in Amsterdam in the 1630s, described the city as ‘an inventory of the possible’, storing ‘all the commodities and curiosities one could wish for’. In his 2009 book *Vermeer’s Hat: The Seventeenth Century and the Dawn of the Global World*,¹⁷ Timothy Brook showed how much the prosperity of Amsterdam owed to the diversity created by exchanges with other parts of the world (China, Indonesia, and the Americas).

In today’s world, many cities are vying to become such talent hubs. In this quest, they are devoting increasing efforts to foster diversity by attracting individuals (and companies) with very different backgrounds and profiles. The benefits of migrations and ‘corridors of inventors’ have been described and analysed in the 2015–16 edition of the present report, focusing mainly on national economies. Similar findings have emerged from economic research over the last decade. For example, Ottaviano and Peri (2006), considering evidence from a sample of 226 US cities from 1980 to 2010, showed that linguistic, racial, and composite diversity *increased* the average income of working-age population in American cities. They also showed that such positive effects are generally higher at city level than at that of the nation.

Later in this report, the **Special Section on Cities and Regions** will look into such issues in greater detail, and provide a ranking of some 90 cities in terms of talent competitiveness.

The Benefits of Diversity for Nations

Nations thrive on the diversity of talents and skills that sustain the industries and clusters characterising a modern economy. As expected from our assessment, research shows that the educational diversity of the workforce is particularly beneficial for the

As a prime business location in Europe and worldwide, the City of Zurich considers diversity clearly as a strength. Diversity is essential to prosperity for any city: diversity of cultures, experiences, socioeconomic backgrounds, age and genders. We won't get anywhere by trying to solve our challenges with polarization and populism. By devising policies to include and empower all newcomers and residents, the City of Zurich is prepared to tackle the challenges of the future. The right answer is not isolation but openness.

**— Corine Mauch,
Mayor of Zurich**

Diversity is an important part of life in Singapore, and we believe that our unity in the face of diversity is a source of strength. Diversity can be a challenge, but in embracing it we are not only better off in social terms, but also more innovative and competitive.

**— Dr Janil Puthuchery,
Senior Minister of State
for Communications and
Information of Singapore**

economy, significantly increasing the productivity of firms and enhancing entrepreneurial behaviour.¹⁸ Furthermore, if there is a high degree of social mobility—talent that comes from different socioeconomic segments of society and from different cultural and ethnic backgrounds—then the richness of knowledge, perspectives, and networks pushes economic performance even higher via increased innovation. Diversity becomes a national resource.

Using GTCI data for the 119 countries, we ask two questions: (1) To what extent is the cognitive resource view on diversity shared across nations? (2) How widespread is the belief across nations in gender diversity and inclusion? Additionally, we comment on the external openness of the nations in the GTCI sample, discussed in the GTCI 2015–16: US data show that foreign talents are twice as likely to start a business (including tech startups) as domestic workers, and they patent at double the native rate (this is often referred to as 'ethnic patenting').¹⁹

It is cognitive diversity above all that adds value—and so it is useful to determine the extent to which different nations support the cognitive or resource perspective on diversity. It is difficult to assess systematically the extent to which diversity and inclusiveness constitute an important part of institutional norms across countries. Most of the studies focus on the Anglo-Saxon countries, particularly the United States, and the Nordic region,²⁰ and data that would allow a truly global perspective are lacking. However, as noted earlier and discussed in **Chapter 6**, exploiting diversity as a resource is mainly about collaboration between people with different knowledge and perspectives. Two indicators that are included in the GTCI 2018 provide a reasonable indication of the extent to which this resource perspective is shared within the country: (1) the degree of inter-functional collaboration in firms in the 119 countries covered in the report, and (2) the degree of collaboration between firms.²¹ Firms are unlikely to invest in such collaboration between functions and between enterprises if they do not see a concomittant resource value.

Collaboration can thus be used as an indication of the normative acceptance of the resource view of diversity. Figure 1a shows countries' performance on collaboration indicators.

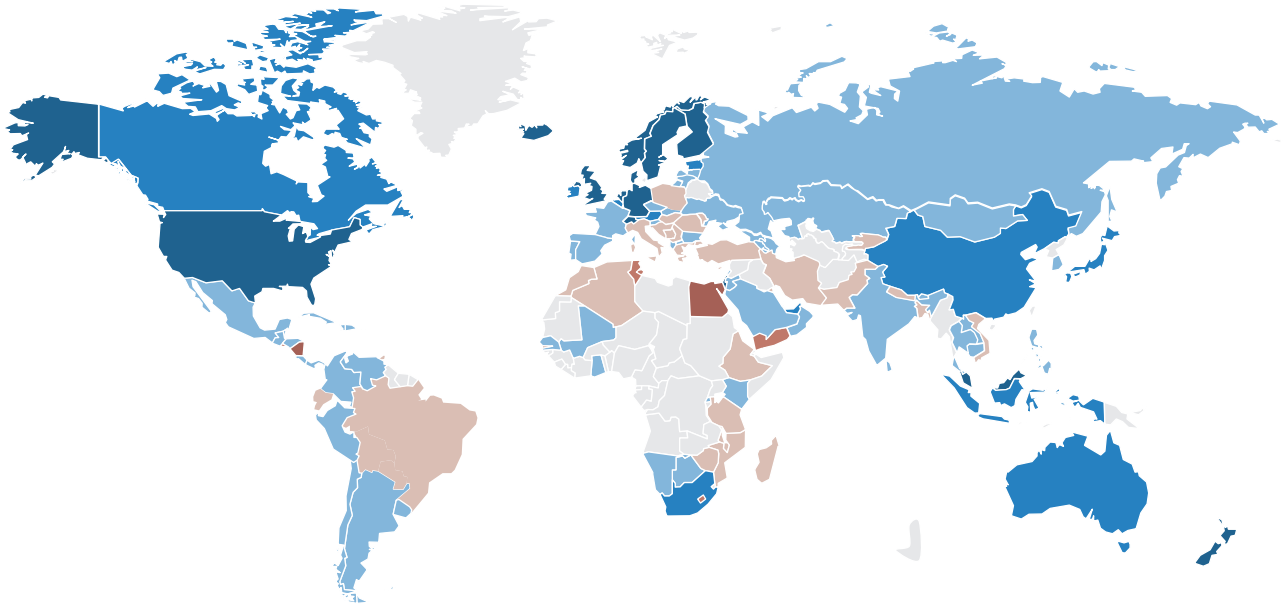
Turning to identity diversity, we focus on gender since half the human race is female. Research suggests that the institutional norms are important to legitimise changes that will result in greater gender diversity and inclusion—for example, the market valuation for gender diverse firms is higher in countries where there is regulatory and management support for diversity (such as the United States) than where this regulatory and management support is weak—as in Japan, South Korea, or Brazil.²² The GTCI includes a measure of the normative acceptance of gender diversity, namely the extent to which companies provide women with the same opportunities as men to rise to positions of leadership, as perceived by a panel of locally credible executives (see Figure 1b).²³

There is a strong correlation (0.67) between collaboration (acceptance of the resource view of diversity) and normative acceptance of gender diversity,²⁴ although a number of countries are strong on one but not the other:

- The GTCI sample has a relatively tight cluster of seven countries that are strongly committed to both gender diversity and collaboration/resource diversity. This cluster covers all the Nordic countries including Iceland, with Sweden as the country in the world that ranks highest on collaboration (one is reminded of its strongly inclusive consensus culture) and Norway, which ranks the highest on gender diversity. Singapore and the United Arab Emirates are also in this cluster.
- Not all countries with a strong collaborative culture are as committed to gender equality, however. The United States and Switzerland head this list of countries with a strong commitment to collaboration but weaker commitment to gender equality. This list also includes Malaysia, New Zealand, the United Kingdom, the three Benelux countries, Ireland, and Canada. These countries may subscribe to the view outlined in **Chapter 6** that collaboration

Figure 1a

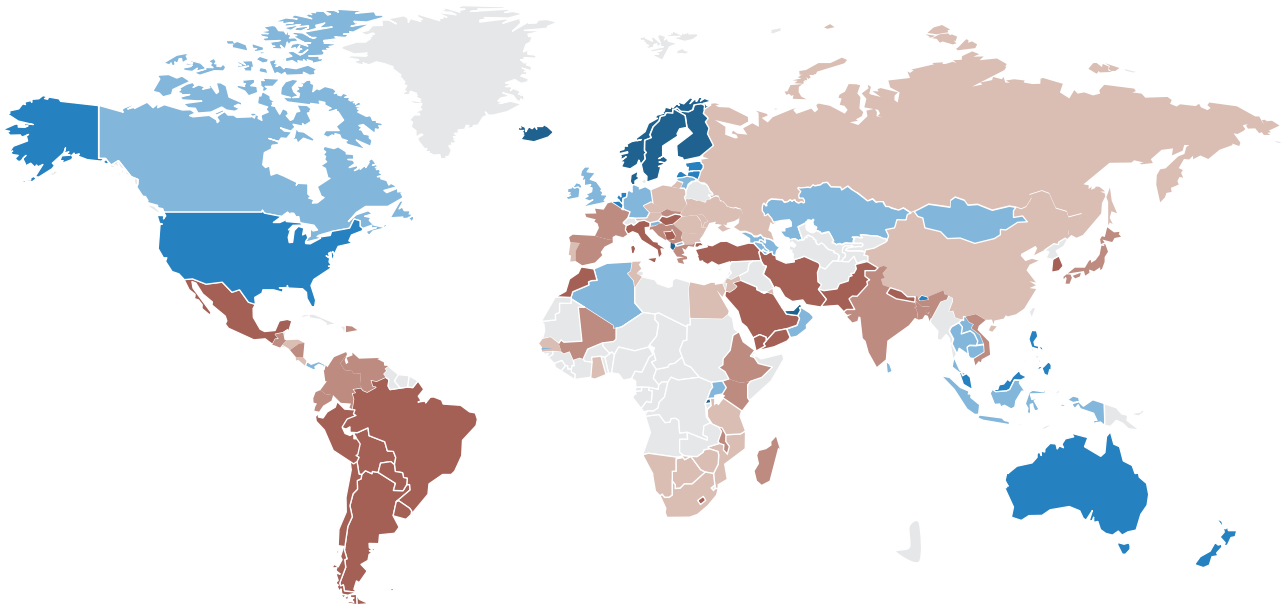
Collaboration (within and across organisations): Scores used in the GTCI



Note: Colours range from dark blue (best scores) to dark red (worst scores). Countries without data appear in grey.

Figure 1b

Leadership opportunities for women: Scores used in the GTCI



Note: Colours range from dark blue (best scores) to dark red (worst scores). Countries without data appear in grey.

HOW OTHMAN WOK LAID THE FOUNDATIONS FOR SINGAPORE'S MULTIRACIAL DIVERSITY

As Singapore's Minister for Communications and Information commented at the eulogy ceremony for Othman Wok, who died there in April 2017 at the age of 92, the ethos of multiracialism is vital today with extreme ideologies proliferating on many fronts.¹

Othman was celebrated as one of the founding fathers of Singapore, the Minister for Social Affairs in Lee Kuan Yew's first cabinet in 1965, which laid the foundations for social cohesion in a racially diverse country where today 74% of the population is Chinese, 13% Malay, 9% Indian, and 4% is of other nationalities.

When Singapore was still part of Malaysia, one of the most contentious issues between the two was whether the federal country should be multicultural, with all races enjoying equal rights, or a system based on ethnic politics and racial dominance. Lee wanted the former, and Malaysia's dominant Malay political party UMNO wanted the latter. As one of the Malay minority in Singapore, Othman actively joined Lee Kuan Yew, suffering abuse as a 'traitor' to his ethnic group and death threats against him. When Singapore became independent in 1965, multiracial equality became one of the foundations of the new state. Specifically, the government pledged to provide equal footing and status to every constituent race in Singapore, with the aim not only of recognising the differences in the society, but also of maintaining and strengthening these cultural identities. But to provide cohesion, there should be a superordinate identity characterised as 'Singaporean'.

Political representation, schooling, and housing were the vehicles for this policy. At all instances of political governance, there should be representatives of all four ethnic constituencies. In schools, English became the lingua franca—every student then and today learns English and their assigned mother tongue; schools became a vehicle for building common social values and collaboration. And in a country where 80% of the population lives in public housing, every block, precinct, and enclave has ethnic quotas. Singapore's Deputy Prime Minister, Tharman Shanmugaratnam, believes that the natural workings of a market or society will never produce social harmony or equal opportunity. He commented: *'The most intrusive social policy in Singapore has turned out to be the most important. . . . It turns out that when you ensure every neighborhood is mixed, people do everyday things together, become comfortable with each other, and most importantly, their kids go to the same schools. When the kids grow up together, they begin to share a future together.'*²

Notes

- 1 Remembering Othman Wok: A champion of multi-culturalism. *Straits Times*, 17 April 2017.
- 2 Zakaria, F. (2015). What America can learn from Singapore about racial integration. *Washington Post*, 25 June, available at https://www.washingtonpost.com/opinions/from-singapore-lessons-in-harmony-and-diversity/2015/06/25/86fcbfa2-1b72-11e5-93b7-5eddc056ad8a_story.html?utm_term=.0c5a6d91dda3

is imperative for innovation and competitiveness, and that promoting female talents is important not because they are women but because it expands the pool of cognitive diversity and collaborative capabilities.

- The commitment to collaboration is equally strong in Germany, Austria, and Israel, but much weaker on gender diversity.
- Japan and South Korea show moderately strong commitment to collaboration, but they are among the weakest countries in the GTCI sample of 119 on gender diversity. This contrasts with three moderately developed nations that show remarkable commitment to gender diversity but less to collaboration—Rwanda stands out in this regard (it almost equals Norway on gender equality), as well as Albania and the Philippines.

Summarising diversity at the level of nations, this means **openness**—openness above all to the necessity for collaboration, openness to gender and other forms of identity diversity, openness to providing opportunities for people regardless of their

socioeconomic background, and an appropriate degree of openness to talented immigrants. The Nordic countries, along with Singapore and indeed the United Arab Emirates (UAE) (which has rapidly moved up in the GTCI rankings), show the link between openness, talent competitiveness, and sustainable prosperity.

To capture the benefits of innovation, organisational leaders need to be committed to diversity and to build an inclusive culture. Similarly, nations need strong political will, as well as appropriate legal and regulatory instruments. Singapore has a deep political commitment to diversity (see the box on *'How Othman Wok laid the foundations for Singapore's multiracial diversity'*, including a recent quote by Singapore's Deputy Prime Minister). Although there is ample evidence that diversity benefits national economies, efforts to stimulate and support diversity are best seen in societies that were multicultural (and often multiethnic) from the start, as was the case for Singapore.²⁵ Indeed, fundamental disagreements over diversity policy were at the core of Singapore's breakaway from Malaysia, testifying to the need for vision, determination, and dedication on the part of political leaders.²⁶

KEY MESSAGES EMERGING FROM THE GTCI 2018

- **Message 1: Talent diversity still is a largely untapped resource for innovation. Organisations, cities, and nations are slowly learning how to leverage it.** Diversity was largely ignored during the industrial age of the 20th century when standardisation was a key objective in production and in education; diversity was then viewed at best as a constraint imposed by law and regulations. It should now be regarded as a core pillar of competitiveness in a rapidly growing global digital economy.²⁷
- **Message 2: It is above all cognitive diversity (diversity of knowledge, experience, and perspectives) that, through teamwork and collaboration, leads to innovation and outstanding performance.** Teams of diverse people outperform teams of talented but similar people. The GTCI assesses cognitive diversity across the world indirectly through measures of collaboration within and across organisations; it also measures attention to gender diversity.²⁸ It points towards the relatively slow pace at which progress is made in leveraging potential benefits from such diversities. Awareness and active strategies are required.
- **Message 3: Inclusion and diversity go hand in hand when it comes to diversity strategies.** The difference between the two can be summarised as *'diversity is being invited to the party, but inclusion is being asked to dance'*. To leverage diversity, organisations have to build more inclusive norms and cultures where voices will be heard without the filter of unconscious bias. More inclusive organisations will help remove the obstacles to identity diversity (gender, ethnicity, age, etc.). Organisations are also organising work around agile project teams to harness the benefits of diversity, but the payoff in terms of innovation and performance requires more inclusive norms.
- **Message 4: Formal educational systems (from kindergarten to tertiary education) have a crucial responsibility in building the competences (knowledge + skills + attitude) that are needed for a more inclusive world.**²⁹ These formal educational systems should be accompanied by more systematic and pervasive diversity training in organisations (focused on developing respect for identity differences such as gender, culture and ethnicity, as well as awareness of our unconscious biases) as well as vital training in collaborative skills.
- **Message 5: The capacity to leverage diversity requires bold and visionary leadership—at the level of organisations, cities, and nations.** By themselves, the natural forces of society will not lead to diversity and inclusiveness. To the contrary: in the absence of such leadership, similar people tend to cluster together in the shape of tribes, cliques, and cohorts.

- **Message 6: Cities will continue to change the global talent scene.** Municipal leadership and local engagement will be key in their success. The energy deployed by mayors and associated teams have characterised the efforts made by some of the high performers of the Global Cities Talent Competitiveness Index (GCTCI). Such leadership has often been visible enough to entice entire communities to combine forces to project a positive and attractive image of their respective cities. This will continue to be a key ingredient for the success of cities aiming to become global talent hubs.
- **Message 7: Cities are perfect labs to promote diversity.** The experience of cities of different sizes and historical backgrounds shows how much diversity can contribute to innovation. In many cities around the world, promoting diversity has led to significant advances, especially from the point of view of inclusion: concepts such as 'inclusive prosperity' or 'smart cities' need to be revisited from that particular angle. These concepts provide ample room for concertation with local stakeholders.

THE GTCI CONCEPTUAL FRAMEWORK

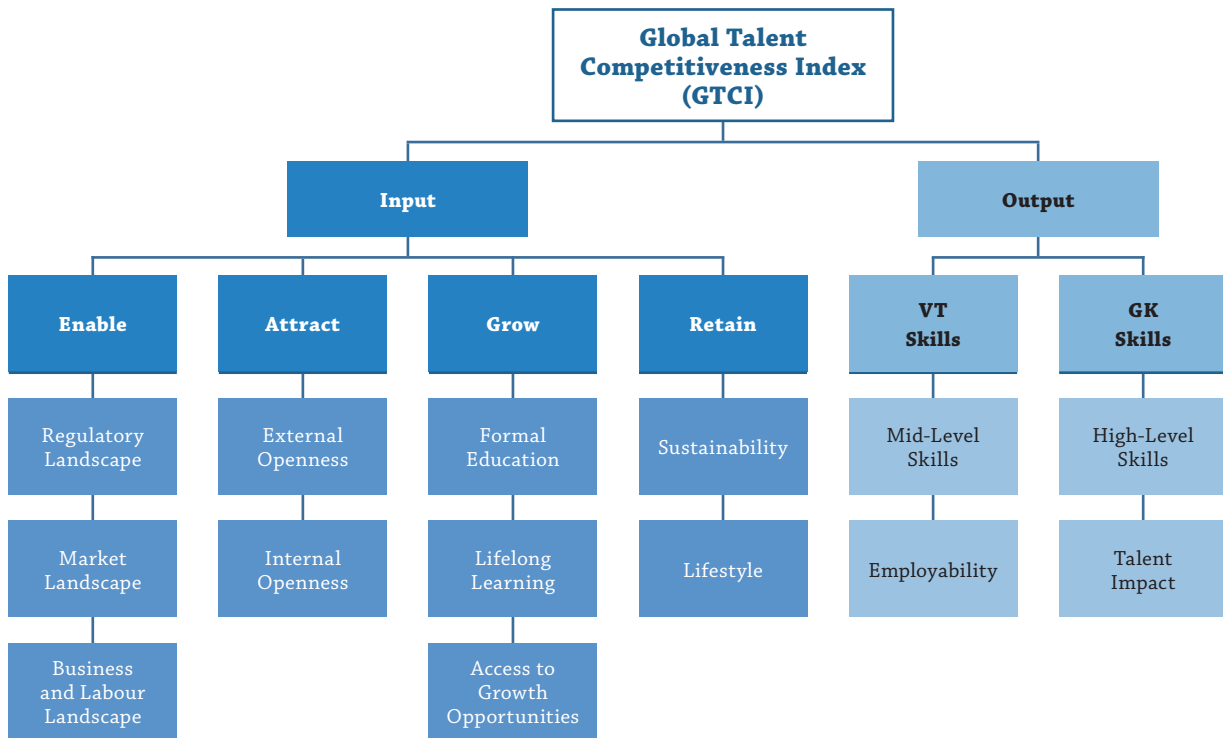
As underlined in the previous four editions of the GTCI, countries are competing globally to grow better talent; attract the talent they need; and retain those workers who contribute to competitiveness, innovation, and growth. Countries seek to put economic and social policies in place that will facilitate 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 (119 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 2
The GTCI 2018 model



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

enable them to: (1) assess the effectiveness of talent-related policies and practices, (2) identify priorities for action in relevant areas, and (3) 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 2) 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.

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 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.³⁰ Since the GTCI focuses on efforts made by countries, the model is largely fed by macro-economic 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 part of the **Enable** pillar. Together, Enable, Attract, Grow, and Retain constitute the four Input 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 2. 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 2018 edition with respect to the 2017 edition. In particular, the model now includes questions about the quality of collaboration within and across organisations in each country. Collaboration is becoming more and more important in the knowledge economy and it is the key to leveraging the diversity of skills and knowledge of the global talent pool. Moreover, the model has strengthened its components that have to do with the labour market by incorporating measurements of the quality of active labour market policies and improved measurements of ‘Employability’—the extent to which the available skills match the needs of the economy.

The total number of variables in this year’s model has increased from 65 to 68. Country coverage has increased from 118 to 119 countries, representing almost 98% of the world’s GDP and 89% of its population. The audit carried out by the Joint Research Centre (JRC) of the European Commission (see **Chapter 7**) has confirmed that the changes introduced in the model have improved its accuracy, while maintaining its solidity and robustness.³¹ Further details on 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 2018: MAIN FINDINGS

The top GTCI scores continue to be dominated by developed, high-income countries (see Table 1) and there is a high correlation between GDP per capita and GTCI scores (see Figure 3 on pages 16–17). The Statistical Annex to this chapter presents more detailed information on country performance for the different sub-pillars and variables. European countries continue to dominate the GTCI rankings, with 16 of them 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: Australia, New Zealand, Canada, the United Arab Emirates, Japan, Qatar, and Israel.

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 119 countries according to (1) five income groups and (2) seven regional groups.

Table 1
Global Talent Competitiveness Index 2018 rankings

| COUNTRY | SCORE | OVERALL RANK | INCOME GROUP | REGIONAL GROUP | REGIONAL GROUP RANK |
|--------------------------|-------|--------------|------------------|--|---------------------|
| Switzerland | 79.90 | 1 | High income | Europe | 1 |
| Singapore | 78.42 | 2 | High income | East, Southeastern Asia and Oceania | 1 |
| United States of America | 75.34 | 3 | High income | Northern America | 1 |
| Norway | 74.56 | 4 | High income | Europe | 2 |
| Sweden | 74.32 | 5 | High income | Europe | 3 |
| Finland | 73.95 | 6 | High income | Europe | 4 |
| Denmark | 73.79 | 7 | High income | Europe | 5 |
| United Kingdom | 73.11 | 8 | High income | Europe | 6 |
| Netherlands | 72.56 | 9 | High income | Europe | 7 |
| Luxembourg | 71.64 | 10 | High income | Europe | 8 |
| Australia | 71.61 | 11 | High income | East, Southeastern Asia and Oceania | 2 |
| New Zealand | 71.52 | 12 | High income | East, Southeastern Asia and Oceania | 3 |
| Ireland | 71.38 | 13 | High income | Europe | 9 |
| Iceland | 70.48 | 14 | High income | Europe | 10 |
| Canada | 69.63 | 15 | High income | Northern America | 2 |
| Belgium | 69.56 | 16 | High income | Europe | 11 |
| United Arab Emirates | 68.88 | 17 | High income | Northern Africa and Western Asia | 1 |
| Austria | 68.63 | 18 | High income | Europe | 12 |
| Germany | 67.77 | 19 | High income | Europe | 13 |
| Japan | 62.63 | 20 | High income | East, Southeastern Asia and Oceania | 4 |
| France | 62.61 | 21 | High income | Europe | 14 |
| Estonia | 61.93 | 22 | High income | Europe | 15 |
| Qatar | 61.90 | 23 | High income | Northern Africa and Western Asia | 2 |
| Israel | 61.79 | 24 | High income | Northern Africa and Western Asia | 3 |
| Czech Republic | 60.02 | 25 | High income | Europe | 16 |
| Malta | 58.77 | 26 | High income | Europe | 17 |
| Malaysia | 58.51 | 27 | Upper-mid income | East, Southeastern Asia and Oceania | 5 |
| Slovenia | 55.77 | 28 | High income | Europe | 18 |
| Portugal | 55.75 | 29 | High income | Europe | 19 |
| Korea, Rep. | 55.57 | 30 | High income | East, Southeastern Asia and Oceania | 6 |
| Spain | 54.91 | 31 | High income | Europe | 20 |
| Lithuania | 53.31 | 32 | High income | Europe | 21 |
| Chile | 52.95 | 33 | High income | Latin, Central America and the Caribbean | 1 |
| Latvia | 52.27 | 34 | High income | Europe | 22 |
| Costa Rica | 51.38 | 35 | Upper-mid income | Latin, Central America and the Caribbean | 2 |
| Italy | 50.55 | 36 | High income | Europe | 23 |
| Cyprus | 50.29 | 37 | High income | Northern Africa and Western Asia | 4 |
| Bahrain | 50.16 | 38 | High income | Northern Africa and Western Asia | 5 |
| Poland | 50.06 | 39 | High income | Europe | 24 |

(continued on next page)

Table 1 (continued)

Global Talent Competitiveness Index 2018 rankings

| COUNTRY | SCORE | OVERALL RANK | INCOME GROUP | REGIONAL GROUP | REGIONAL GROUP RANK |
|---------------------|-------|--------------|--------------------|--|---------------------|
| Slovakia | 50.02 | 40 | High income | Europe | 25 |
| Saudi Arabia | 49.61 | 41 | High income | Northern Africa and Western Asia | 6 |
| Greece | 48.21 | 42 | High income | Europe | 26 |
| China | 48.01 | 43 | Upper-midle income | East, Southeastern Asia and Oceania | 7 |
| Uruguay | 47.67 | 44 | High income | Latin, Central America and the Caribbean | 3 |
| Panama | 46.88 | 45 | Upper-midle income | Latin, Central America and the Caribbean | 4 |
| Mauritius | 46.79 | 46 | Upper-midle income | Sub-Saharan Africa | 1 |
| Bulgaria | 45.72 | 47 | Upper-midle income | Europe | 27 |
| Croatia | 45.42 | 48 | High income | Europe | 28 |
| Argentina | 44.92 | 49 | Upper-midle income | Latin, Central America and the Caribbean | 5 |
| Jordan | 44.70 | 50 | Upper-midle income | Northern Africa and Western Asia | 7 |
| Kazakhstan | 44.44 | 51 | Upper-midle income | Central and Southern Asia | 1 |
| Hungary | 44.25 | 52 | High income | Europe | 29 |
| Russian Federation | 44.22 | 53 | Upper-midle income | Europe | 30 |
| Philippines | 44.17 | 54 | Lower-midle income | East, Southeastern Asia and Oceania | 8 |
| Trinidad and Tobago | 44.02 | 55 | High income | Latin, Central America and the Caribbean | 6 |
| Oman | 43.93 | 56 | High income | Northern Africa and Western Asia | 8 |
| Azerbaijan | 43.63 | 57 | Upper-midle income | Northern Africa and Western Asia | 9 |
| Montenegro | 43.47 | 58 | Upper-midle income | Europe | 31 |
| Macedonia, FYR | 43.08 | 59 | Upper-midle income | Europe | 32 |
| Lebanon | 41.91 | 60 | Upper-midle income | Northern Africa and Western Asia | 10 |
| Ukraine | 41.50 | 61 | Lower-midle income | Europe | 33 |
| Botswana | 41.27 | 62 | Upper-midle income | Sub-Saharan Africa | 2 |
| South Africa | 41.22 | 63 | Upper-midle income | Sub-Saharan Africa | 3 |
| Romania | 41.13 | 64 | Upper-midle income | Europe | 34 |
| Kuwait | 40.85 | 65 | High income | Northern Africa and Western Asia | 11 |
| Armenia | 40.76 | 66 | Lower-midle income | Northern Africa and Western Asia | 12 |
| Colombia | 40.57 | 67 | Upper-midle income | Latin, Central America and the Caribbean | 7 |
| Turkey | 40.45 | 68 | Upper-midle income | Northern Africa and Western Asia | 13 |
| Serbia | 40.05 | 69 | Upper-midle income | Europe | 35 |
| Thailand | 39.96 | 70 | Upper-midle income | East, Southeastern Asia and Oceania | 9 |
| Mexico | 39.08 | 71 | Upper-midle income | Latin, Central America and the Caribbean | 8 |
| Georgia | 38.89 | 72 | Upper-midle income | Northern Africa and Western Asia | 14 |
| Brazil | 38.86 | 73 | Upper-midle income | Latin, Central America and the Caribbean | 9 |
| Peru | 38.51 | 74 | Upper-midle income | Latin, Central America and the Caribbean | 10 |
| Mongolia | 38.29 | 75 | Lower-midle income | East, Southeastern Asia and Oceania | 10 |
| Rwanda | 38.07 | 76 | Low income | Sub-Saharan Africa | 4 |
| Indonesia | 38.04 | 77 | Lower-midle income | East, Southeastern Asia and Oceania | 11 |
| Albania | 37.47 | 78 | Upper-midle income | Europe | 36 |
| Dominican Republic | 37.25 | 79 | Upper-midle income | Latin, Central America and the Caribbean | 11 |

(continued on next page)

Table 1 (continued)

Global Talent Competitiveness Index 2018 rankings

| COUNTRY | SCORE | OVERALL RANK | INCOME GROUP | REGIONAL GROUP | REGIONAL GROUP RANK |
|----------------------------|-------|--------------|--------------------|--|---------------------|
| Namibia | 37.00 | 80 | Upper-midle income | Sub-Saharan Africa | 5 |
| India | 36.78 | 81 | Lower-midle income | Central and Southern Asia | 2 |
| Sri Lanka | 36.75 | 82 | Lower-midle income | Central and Southern Asia | 3 |
| Tunisia | 36.40 | 83 | Lower-midle income | Northern Africa and Western Asia | 15 |
| Guatemala | 36.18 | 84 | Lower-midle income | Latin, Central America and the Caribbean | 12 |
| Ecuador | 36.03 | 85 | Upper-midle income | Latin, Central America and the Caribbean | 13 |
| Moldova, Rep. | 35.78 | 86 | Lower-midle income | Europe | 37 |
| Viet Nam | 35.55 | 87 | Lower-midle income | East, Southeastern Asia and Oceania | 12 |
| Kenya | 34.87 | 88 | Lower-midle income | Sub-Saharan Africa | 6 |
| Bosnia and Herzegovina | 34.15 | 89 | Upper-midle income | Europe | 38 |
| Ghana | 33.58 | 90 | Lower-midle income | Sub-Saharan Africa | 7 |
| Bhutan | 33.54 | 91 | Lower-midle income | Central and Southern Asia | 4 |
| Honduras | 33.26 | 92 | Lower-midle income | Latin, Central America and the Caribbean | 14 |
| Kyrgyzstan | 33.20 | 93 | Lower-midle income | Central and Southern Asia | 5 |
| Iran, Islamic Rep. | 32.57 | 94 | Upper-midle income | Central and Southern Asia | 6 |
| Lao PDR | 32.38 | 95 | Lower-midle income | East, Southeastern Asia and Oceania | 13 |
| Gambia | 32.00 | 96 | Low income | Sub-Saharan Africa | 8 |
| Senegal | 31.98 | 97 | Low income | Sub-Saharan Africa | 9 |
| Morocco | 31.86 | 98 | Lower-midle income | Northern Africa and Western Asia | 16 |
| Paraguay | 31.83 | 99 | Upper-midle income | Latin, Central America and the Caribbean | 15 |
| El Salvador | 29.56 | 100 | Lower-midle income | Latin, Central America and the Caribbean | 16 |
| Algeria | 29.45 | 101 | Upper-midle income | Northern Africa and Western Asia | 17 |
| Bolivia, Plurinational St. | 29.44 | 102 | Lower-midle income | Latin, Central America and the Caribbean | 17 |
| Uganda | 29.09 | 103 | Low income | Sub-Saharan Africa | 10 |
| Egypt | 28.42 | 104 | Lower-midle income | Northern Africa and Western Asia | 18 |
| Venezuela, Bolivarian Rep. | 28.13 | 105 | Upper-midle income | Latin, Central America and the Caribbean | 18 |
| Lesotho | 27.88 | 106 | Lower-midle income | Sub-Saharan Africa | 11 |
| Tanzania, United Rep. | 27.66 | 107 | Low income | Sub-Saharan Africa | 12 |
| Cambodia | 27.02 | 108 | Lower-midle income | East, Southeastern Asia and Oceania | 14 |
| Pakistan | 26.94 | 109 | Lower-midle income | Central and Southern Asia | 7 |
| Malawi | 26.24 | 110 | Low income | Sub-Saharan Africa | 13 |
| Nicaragua | 26.10 | 111 | Lower-midle income | Latin, Central America and the Caribbean | 19 |
| Ethiopia | 25.34 | 112 | Low income | Sub-Saharan Africa | 14 |
| Mali | 24.66 | 113 | Low income | Sub-Saharan Africa | 15 |
| Bangladesh | 24.50 | 114 | Lower-midle income | Central and Southern Asia | 8 |
| Zimbabwe | 24.33 | 115 | Low income | Sub-Saharan Africa | 16 |
| Nepal | 24.05 | 116 | Low income | Central and Southern Asia | 9 |
| Mozambique | 22.85 | 117 | Low income | Sub-Saharan Africa | 17 |
| Madagascar | 22.76 | 118 | Low income | Sub-Saharan Africa | 18 |
| Yemen | 16.10 | 119 | Lower-midle income | Northern Africa and Western Asia | 19 |

Figure 3 (continued)
GTCI scores versus GDP per capita: ISO-2 country codes

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

ENDNOTES

- 1 In mathematical terms, one of the most commonly used measures of diversity is the 'index of fractionalisation'. This index is simply the probability that two randomly selected individuals in a community belong to different groups. It accounts for the two main dimensions of diversity—that is, 'richness' (number of groups) and 'evenness' (balanced distribution of individuals across groups). For example, to evaluate diversity in terms of geographical origins if 'cultural diversity' happens to be what is of interest, one can use the variable *CoB* (Country of Birth of a person) to define the cultural identity of each group in a particular country, city, or organisation. The diversity index would then be defined as:

$$divct = 1 - \sum Mi = 1 (CoBci)2t$$

where (*CoBci*) is the share of people born in country *i* among the residents of city *c* (or workers in organization *j*, etc.) in year *t*. This index is a measure of both the cultural richness of a country, city, or organisation (i.e., the number of groups) and its cultural diversity (i.e., the evenness of groups' sizes). It reaches its minimum value 0 when all individuals were born in the same country, and its maximum value 1 when no two individuals were born in the same country. Intuitively, when all individuals belong to the same group, the probability that two randomly selected individuals belong to different groups is 0, whereas it equals 1 when all individuals belong to different groups. On the other hand, for a given number of groups *M* (i.e., controlling for richness), the index reaches its maximum at $(1 - 1/M)$ when individuals are uniformly distributed across groups (making diversity closely akin to what physicists know as entropy).

- 2 A key reference for building a typology of diversity is Page (2007a, 2007b). Other relevant references are discussed in Chapter 6.
- 3 See, for instance, Wanous & Youtz (1986).
- 4 See Page (2007b).
- 5 Team research has repeatedly demonstrated the saliency of functional background diversity to map differences in expertise and experience of team members (Bunderson & Sutcliffe, 2002; Bunderson, 2003).
- 6 One influential study of a US national sample of for-profit businesses showed that racial and gender diversity is clearly associated with increased sales revenues, more customers, and greater relative profits (Herring, 2009).
- 7 See Rock & Grant (2016). See also a recent example featured in the *Financial Times*: <https://www.ft.com/content/28236564-b5a1-11e7-8007-554f9eaa90ba?mhq5j=e6>
- 8 See Page (2007b) and Pelled (1996).
- 9 INSEAD's Herminia Ibarra points out that gender or identity diversity can be polarising while the notion of diversity of thought and opinion is something that everybody can buy into. See Ibarra (2014).
- 10 See Toegel & Barsoux (2016).
- 11 See Leung et al. (2008); Galinsky et al. (2015).
- 12 See Galinsky et al. (2015), who also provide multiple references.
- 13 There are already measurable returns to the 'career capital' of internationally mobile professionals, particularly for certain occupations. These returns seem to always be present in the managerial and professional categories, occupations that particularly value creativity and innovation (see the evidence presented by Pozo, 2014).
- 14 In different experiments, some carried out by INSEAD scholars, people who have in-depth international experience are, statistically, more likely to solve certain problems than people who have never lived abroad (or even people who travel widely).
- 15 For the Ideo story, see Kelley (2001).
- 16 Stahl et al. (2010) show this in a meta-analysis of 108 studies, also emphasizing significant moderator effects. See also Tadmor et al. (2012). See Kinias & Kim (2012) for research on cultural differences about how justifiable gender inequality is.
- 17 Brook (2009).
- 18 See Marino et al. (2012, 2016); Garnero et al. (2014).

- 19 Hunt and Gauthier-Loiselle (2010). Note that this is entirely accounted for by foreign workers disproportionately holding degrees in science and engineering.
- 20 See Jonsen et al. (2011).
- 21 Both these collaboration variables are measured by executive perceptions, based on the World Economic Forum's Executive Opinion Survey carried out in the context of the *Global Competitiveness Report*.
- 22 Zhang (2017). See also Kinias & Kim (2012), who show that Chinese women in Hong Kong saw gender inequality as less unjust than European American women did.
- 23 This indicator is derived from the World Economic Forum's Executive Opinion Survey, conducted annually on a global basis and used by the GTCI under the pillar Attract (in the Internal Openness sub-pillar).
- 24 As seen in Chapter 6, inclusive norms pave the way for leveraging diversity as a resource.
- 25 Singapore had a multiracial and multicultural society long before its independence in 1965, with ethnic Chinese, Indians, and indigenous Malays making up the majority of the population.
- 26 One might argue that there may be support for the importance of inclusiveness as a concept that embraces both the resource/cognitive view on diversity and the identity view. Singapore would be a good example of a country with a strong orientation to inclusiveness since its talent policies focus on all demographic segments—from young to old; from vocationally trained to highly educated; and across gender, nationality, and race.
- 27 Diversity is a particularly vital resource in an age of innovation and transformation where machines are taking over routine work—see the GTCI 2017 (Lanvin & Evans, 2016).
- 28 The Nordic countries, along with Singapore and the UAE, show the strongest awareness of the importance of both cognitive and gender diversity. Other countries, such as the United States and Switzerland (also Malaysia, the United Kingdom, the Benelux countries, Ireland, Germany, and Israel) are sensitive to cognitive diversity but pay less attention to gender diversity. Japan and South Korea are among the countries with the least concern for gender diversity, while the Philippines, Rwanda, and Albania are the reverse (open to gender diversity but less to the values of collaboration).
- 29 For example, PISA today assesses students' abilities in collaborative problem solving, in addition to maths, literacy, and individual problem solving (see Schleicher, 2017).
- 30 See Cappelli & Keller (2014); Stahl et al. (2012).
- 31 The method and results of this audit are the subject of Chapter 7 in this report.

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Statistical Annex to Chapter 1

OVERVIEW

The statistics in this annex analyse country performance in the GTCI 2018 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 1 presents the dispersion of GTCI scores by income group and region. Regarding 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). Regarding regions, the performance of countries in East, Southeastern Asia and Oceania is very heterogeneous, as shown by the dispersion of scores between the 25th and 75th percentiles (shown by the wide bars). Europe also shows a large heterogeneity, including large performance differences between the top (Switzerland) and the bottom (Albania).

European countries continue to lead the GTCI rankings: 16 of them are in the top 25, as last year. Switzerland maintains its

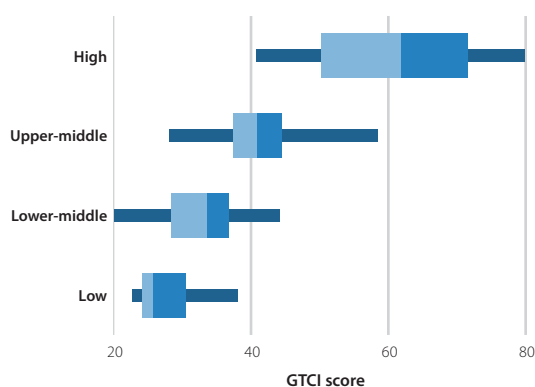
position at the top, and this year the index sees two non-European countries make up the top 10—Singapore (2nd) and the United States of America (3rd). If we consider the top 25, seven additional non-European countries make the grade: Australia (11th), New Zealand (12th), Canada (15th), the United Arab Emirates (17th), Japan (20th), Qatar (23rd), and Israel (24th).

The non-European leaders of the GTCI rankings can be broadly classified into two groups: economies that have long benefitted from global talent (the United States, Canada, Australia), and economies that have a clear focus on becoming 'talent hubs' (Singapore, the United Arab Emirates, and Qatar).

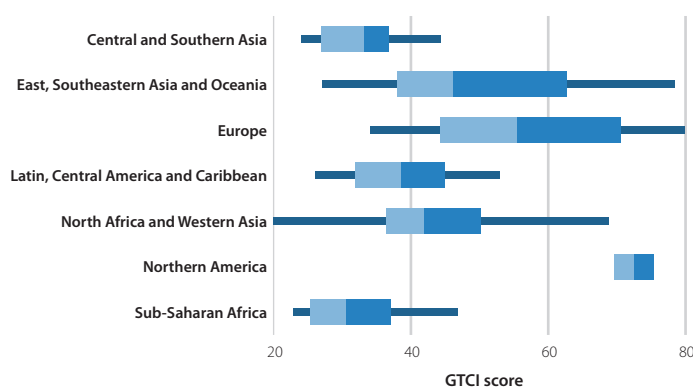
The large differences in GTCI scores across countries are driven by differences in performance in particular pillars. Countries differ substantially in the Retain pillar whereas they are more similar in the Grow pillar (see Figure 2). In other words, the performance of countries in retaining talent differs much more than their capacity in growing them.

The heatmap of Figure 3 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 119 countries belong. The 30 countries that make up the top 25% of the overall

Figure 1
Country dispersion of GTCI scores
By income group

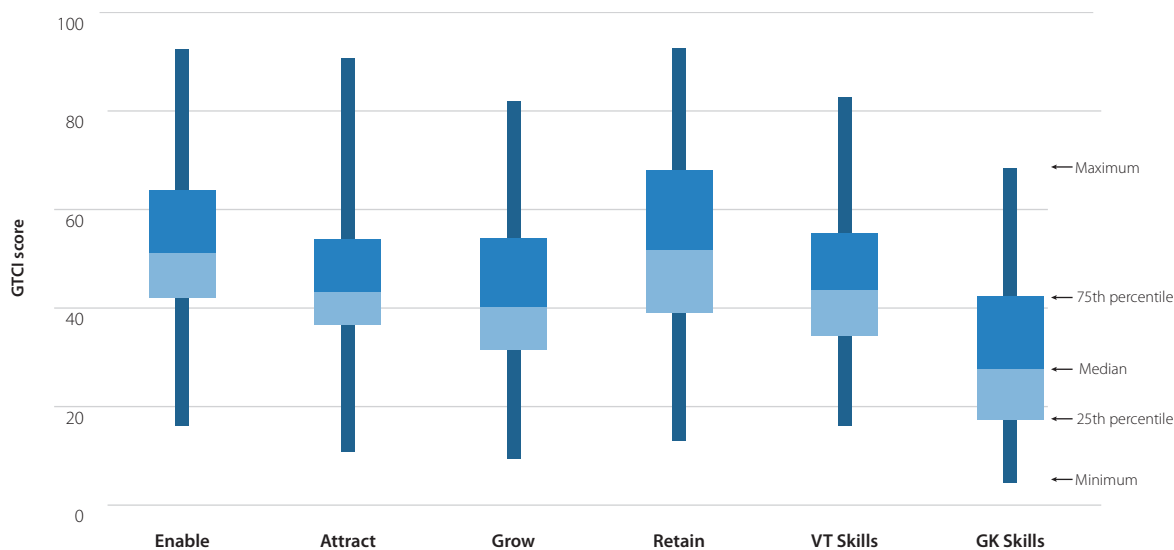


By region



Note: The five vertical lines for each sub-group represent, from left to right, the minimum, the 25th percentile, the median, the 75th percentile, and the maximum scores (the figure for Northern America has only two lines because it only contains two countries: Canada and the United States).

Figure 2

Dispersion of country scores for each pillar

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

GTCI scores (the fourth quartile) are shown in the darkest shade and clearly dominate many of the pillars, particularly Enable (with the exception of Slovenia, which ranks 41st in this pillar, and Portugal, at 31st).

TOP 15 COUNTRIES IN THE GTCI 2018

In general, countries within the top 15 overall GTCI scores show a strong performance in each of the six pillars of the GTCI model. Some high-performing countries just outside the top 15 lead in some pillars. Germany (19th overall) is one of the leaders in Vocational and Technical Skills, and Austria (18th) also consistently ranks highly in this domain. The United Arab Emirates (19th) and Qatar (21st) are strong magnets of talent, as shown by their high rankings in the Attract pillar. Estonia (22nd) is a top performer in Global Knowledge Skills, as is Israel (24th).

Switzerland and Singapore continue to occupy the first two positions in the overall GTCI, as in previous editions. Switzerland excels at retaining domestically developed talent, particularly by offering an ideal economic environment in terms of its Regulatory, Market, and Business and Labour Landscapes. Singapore is the leader in the Enable pillar, which facilitates the city-state in becoming the best performer in attracting talent from abroad.

Although sometimes switching positions, the group of countries that make up the top 15 is quite stable. Germany has slipped a few positions outside this group, while Iceland makes it into the top 15 this year. The group of countries that form the top 25 is virtually unchanged. Since few methodological changes were made to the GTCI model with respect to the 2017 edition, the changes in ranking from last year to this can be considered reliable, particularly in the first quartile of countries—for lower positions in the GTCI ranking, one should take into account the countries that were dropped this year as a result of lack of available data as well as those countries that were newly included.

Switzerland (1st) is at the top overall by virtue of its strong performance across all six pillars of the GTCI model. Switzerland performs consistently well across the Enable (2nd), Retain (1st), and Vocational and Technical Skills (3rd) pillars and their constituent sub-pillars. Performance in the Attract pillar (5th) is strong in terms of the External Openness sub-pillar (5th), with the country showing an excellent capacity to attract and retain global talent. The Internal Openness sub-pillar (13th) shows a relatively poorer performance, however—there is good social mobility (2nd), but gender equality variables such as Female graduates (86th) and Leadership opportunities for women (21st) lag behind.

Singapore (2nd) is the top performer across the Enable and Attract pillars, with uniformly high scores across their underlying sub-pillars—only the variable Tolerance of immigrants shows a relatively poorer performance. Dimensions for which Singapore has room for improvement include Access to Growth Opportunities (16th), Innovation output (it is 17th in the main innovation indicator), and more Social protection for labour (it is currently 36th in this domain).

The United States (3rd) continues to stand out as a top performer in the Grow pillar (2nd) as a consequence of its high ranking in Formal Education (2nd), its leading network of universities, and also its unrivalled Access to Growth Opportunities (1st). This allows it to have an outstanding pool of Global Knowledge Skills (2nd). Although the United States is not among the countries with a large stock of migrants, at least as a percentage of the total population, it remains a highly attractive country to immigrants, as noted in the GTCI 2015–16, since it is one of the best performers in terms of Brain gain (5th). Yet the Attract pillar is not among the best (currently 18th), showing room for improvement in the variables related to social inclusion—including tolerance of minorities and immigrants and also the degree of social mobility for talent coming from diverse segments of society. The performance in the VT Skills pillar must be interpreted

with caution.² The United States shows a good performance in terms of Employability (13th) but more reliable data are needed regarding the availability of vocational skills and technicians that the economy needs.

Norway (4th) is one of the top countries in retaining its talent (2nd in Retain), which is driven by wide access to social protection and benefits (it is 2nd in Sustainability) and also by a high-quality Lifestyle (4th). Domestic talent is already strong as a consequence of a strong Grow pillar (5th), which in turn is the result of good performance in all its constituent sub-pillars: 12th in Formal Education, 6th in Lifelong Learning, and 4th in Access to Growth Opportunities. One area that has room for improvement is attracting foreign talent (12th in Attract), which is not on par with leading developed countries despite good Internal Openness (4th)—which posts a strong performance in variables related to Social Inclusion. Greater access to foreign talent could also boost Norway's performance in Global Knowledge Skills (17th).

Sweden (5th) performs consistently well across all six pillars, belonging to the top 15 of each of them. In particular, Sweden excels at retaining talent (4th in the Retain pillar). With strong Formal Education and, above all, excellent access to Lifelong Learning (7th), the country can count on a well-balanced pool of both Vocational and Technical Skills (11th) and Global Knowledge Skills (8th). Even though Sweden is not one of the top attractors of talent in terms of External Openness (22nd) despite its Lifestyle advantages (3rd), it is a top country in terms of Internal Openness (2nd) with an exemplary Tolerance of minorities. One of the dimensions that shows room for improvement is the Business and Labour Landscape sub-pillar (19th)—particularly in its Labour Market component.

Finland (6th) is the best in the world in Formal Education (1st). The country ranks highly in the Grow pillar (4th) as a consequence—and because the sub-pillars of Lifelong Learning and Access to Growth Opportunities are also in the top 15. Although the pool of Global Knowledge Skills (14th) can still be improved, the educational system is one of the world's best at matching the skills of people with the needs of the economy (it is ranked 2nd in the Employability sub-pillar). The Enable pillar (9th) is also solid, led by a very strong Regulatory Landscape (4th). Although Finland exhibits robust Internal Openness (3rd), with high Tolerance of minorities and strong Social mobility, External Openness (35th) is not among the best and the country can still do much more to attract global talent.

Denmark (7th) is a top performer in the Enable pillar (3rd) and is also within the top 10 in Grow (8th), Retain (6th), and Vocational and Technical Skills (10th). The enabling environment is supported by Ease of doing business (3rd) and low Corruption (1st). The strong Regulatory and Market Landscapes (9th and 8th, respectively) are complemented by an exemplary Labour and Business Landscape (3rd) that has flexible labour markets but without neglecting social protection. Attract belongs to the top 15 but there is still room to lure foreign talent, given the excellent economic environment of the country. Formal Education (5th) is among the best in the world, as is Access to Growth Opportunities (6th). Danish people can count on excellent Personal rights and empowerment in the workplace.

The United Kingdom (8th) ranks consistently around the top 10 in all pillars except Vocational and Technical Skills (25th), which contrasts markedly with the pool of Global Knowledge Skills (3rd). The United Kingdom has been an attractor of talent with its good External Openness (6th), and it uses these skills to achieve top marks in Talent Impact (3rd)—in terms of entrepreneurship and innovation outcomes in a business-friendly Market Landscape (7th). It remains to be determined whether Brexit alters this good performance. This performance is complemented by flexible labour markets and strong sustainability in retaining talent. Internal Openness (18th), by contrast, has room for improvement—particularly in the indicators related to gender equality, which is still lagging behind.

The Netherlands (9th) is the world's top country in the Grow pillar (1st). This is the result of a strong combination of Formal Education (3rd), Lifelong Learning (4th), and Access to Growth Opportunities (3rd). Despite this top performance in developing domestic talent that matches very well the needs of the economy (it ranks 6th in Employability), the Netherlands does not rank higher because it is lagging slightly behind in attracting foreign talent (17th in Attract) and in its pool of Global Knowledge Skills (16th). In any case, Talent Impact is high (14th), driven by a top Innovation output (2nd) taking place in a strong Market Landscape (9th). Another dimension in which the Netherlands can still improve is the Business and Labour Landscape (23rd)—particularly in terms of the Labour Market (where, as mentioned above, Denmark is a European model).

Luxembourg (10th) owes a great part of its position within the top 10 of the GTCI to its excellent performance in Attract (2nd), the result of combining strong External Openness (3rd) with good Internal Openness (6th). The country attracts foreign businesses and also talent—it is 8th in Brain gain and also has a large stock of International students. Foreign talent is received in an environment of strong Social Inclusion (it is 2nd in Tolerance of immigrants and 1st in closing the Gender earnings gap). 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). There are many areas that need improvement, however. Formal Education (51st) does not figure at the top, particularly in terms of universities (as a small country, its universities do not appear in the global ranking of the best). The country has good Social protection (3rd) and Active labour market policies (3rd) but can still improve in ensuring the Employability (32nd) of domestic talent in the private sector.

Australia (11th) is one of the top countries in the Attract pillar (7th), the result of combining good External Openness (8th) with good Internal Openness (10th)—the country shows a high Tolerance of immigrants (5th) and a large degree of Social mobility (6th) for talent coming from different segments of society (including migrants). Australia also has one of the best pools of Global Knowledge Skills (6th), which translates into effective Talent Impact (7th). Formal Education (4th) is among the best in the world, although Lifelong Learning (16th) has room for improvement; Vocational and Technical Skills (24th) could also improve.

New Zealand (12th) ranks among the top 10 in the Enable (4th), Attract (6th), and Global Knowledge Skills (7th) pillars. The

Figure 3

Heatmap: Rankings on GTCI overall and by pillar

| COUNTRY | GTCI RANKING | ENABLE | ATTRACT | GROW | RETAIN | VT SKILLS ⁵ | GK SKILLS |
|--|--------------|--------|---------|------|--------|------------------------|-----------|
| Countries ABOVE the median in the overall GTCI score | | | | | | | |
| Switzerland | 1 | 2 | 5 | 3 | 1 | 3 | 9 |
| Singapore | 2 | 1 | 1 | 10 | 25 | 8 | 1 |
| United States of America | 3 | 8 | 18 | 2 | 14 | 2 | 2 |
| Norway | 4 | 10 | 12 | 5 | 2 | 6 | 17 |
| Sweden | 5 | 5 | 11 | 6 | 4 | 11 | 8 |
| Finland | 6 | 9 | 16 | 4 | 5 | 5 | 14 |
| Denmark | 7 | 3 | 13 | 8 | 6 | 10 | 13 |
| United Kingdom | 8 | 6 | 8 | 7 | 11 | 25 | 3 |
| Netherlands | 9 | 12 | 17 | 1 | 9 | 9 | 16 |
| Luxembourg | 10 | 18 | 2 | 19 | 8 | 17 | 18 |
| Australia | 11 | 17 | 7 | 11 | 12 | 24 | 6 |
| New Zealand | 12 | 4 | 6 | 13 | 21 | 20 | 7 |
| Ireland | 13 | 13 | 9 | 12 | 15 | 14 | 12 |
| Iceland | 14 | 19 | 19 | 15 | 7 | 13 | 5 |
| Canada | 15 | 14 | 10 | 14 | 18 | 22 | 11 |
| Belgium | 16 | 21 | 15 | 9 | 13 | 12 | 20 |
| United Arab Emirates | 17 | 11 | 3 | 21 | 28 | 1 | 43 |
| Austria | 18 | 16 | 21 | 16 | 3 | 7 | 27 |
| Germany | 19 | 15 | 22 | 18 | 10 | 4 | 30 |
| Japan | 20 | 7 | 54 | 20 | 20 | 18 | 23 |
| France | 21 | 29 | 25 | 17 | 16 | 15 | 21 |
| Estonia | 22 | 23 | 27 | 22 | 27 | 27 | 10 |
| Qatar | 23 | 20 | 4 | 23 | 38 | 16 | 62 |
| Israel | 24 | 24 | 50 | 26 | 24 | 23 | 4 |
| Czech Republic | 25 | 26 | 29 | 27 | 17 | 19 | 33 |
| Malta | 26 | 27 | 26 | 33 | 22 | 33 | 19 |
| Malaysia | 27 | 22 | 23 | 32 | 34 | 21 | 39 |
| Slovenia | 28 | 41 | 47 | 30 | 26 | 26 | 25 |
| Portugal | 29 | 31 | 30 | 35 | 19 | 40 | 35 |
| Korea, Rep. | 30 | 25 | 81 | 25 | 40 | 35 | 15 |
| Spain | 31 | 38 | 34 | 28 | 23 | 45 | 32 |
| Lithuania | 32 | 28 | 45 | 36 | 30 | 52 | 28 |
| Chile | 33 | 32 | 42 | 24 | 39 | 38 | 45 |
| Latvia | 34 | 34 | 46 | 42 | 36 | 36 | 28 |
| Costa Rica | 35 | 39 | 24 | 31 | 42 | 39 | 64 |
| Italy | 36 | 52 | 83 | 36 | 32 | 28 | 37 |
| Cyprus | 37 | 47 | 38 | 67 | 47 | 32 | 24 |
| Bahrain | 38 | 30 | 14 | 40 | 54 | 47 | 79 |
| Poland | 39 | 36 | 61 | 43 | 43 | 29 | 44 |
| Slovakia | 40 | 40 | 51 | 44 | 35 | 31 | 51 |
| Saudi Arabia | 41 | 35 | 44 | 53 | 33 | 37 | 60 |
| Greece | 42 | 75 | 74 | 47 | 29 | 49 | 31 |
| China | 43 | 43 | 76 | 29 | 64 | 66 | 22 |
| Uruguay | 44 | 49 | 28 | 39 | 31 | 75 | 70 |
| Panama | 45 | 60 | 20 | 73 | 50 | 65 | 53 |
| Mauritius | 46 | 33 | 33 | 64 | 37 | 46 | 91 |
| Bulgaria | 47 | 53 | 71 | 57 | 46 | 57 | 38 |
| Croatia | 48 | 71 | 92 | 46 | 45 | 42 | 46 |
| Argentina | 49 | 92 | 68 | 34 | 51 | 48 | 56 |
| Jordan | 50 | 51 | 39 | 82 | 53 | 54 | 57 |
| Kazakhstan | 51 | 58 | 58 | 79 | 48 | 53 | 52 |
| Hungary | 52 | 56 | 77 | 80 | 41 | 50 | 49 |
| Russia | 53 | 83 | 106 | 50 | 55 | 51 | 26 |
| Philippines | 54 | 59 | 56 | 41 | 68 | 74 | 36 |
| Trinidad and Tobago | 55 | 64 | 43 | 60 | 60 | 43 | 69 |
| Oman | 56 | 42 | 32 | 84 | 49 | 55 | 93 |
| Azerbaijan | 57 | 54 | 53 | 92 | 44 | 34 | 75 |
| Montenegro | 58 | 74 | 70 | 72 | 63 | 30 | 48 |
| Macedonia, FYR | 59 | 45 | 80 | 58 | 56 | 60 | 67 |
| Lebanon | 60 | 87 | 79 | 62 | 91 | 41 | 34 |

(continued on next page)

Figure 3 (continued)

Heatmap: Rankings on GTCI overall and by pillar

| COUNTRY | GTCI RANKING | ENABLE | ATTRACT | GROW | RETAIN | VT SKILLS ⁵ | GK SKILLS |
|--|--------------|--------|---------|------|--------|------------------------|-----------|
| Countries BELOW the median in the overall GTCI score | | | | | | | |
| Ukraine | 61 | 99 | 98 | 66 | 58 | 44 | 42 |
| Botswana | 62 | 46 | 36 | 48 | 90 | 82 | 77 |
| South Africa | 63 | 62 | 40 | 38 | 97 | 67 | 76 |
| Romania | 64 | 67 | 75 | 77 | 57 | 76 | 58 |
| Kuwait | 65 | 65 | 41 | 90 | 52 | 68 | 87 |
| Armenia | 66 | 72 | 63 | 106 | 65 | 56 | 41 |
| Colombia | 67 | 57 | 72 | 45 | 82 | 64 | 71 |
| Turkey | 68 | 61 | 108 | 63 | 59 | 85 | 47 |
| Serbia | 69 | 89 | 102 | 70 | 67 | 58 | 40 |
| Thailand | 70 | 48 | 55 | 69 | 71 | 89 | 68 |
| Mexico | 71 | 69 | 82 | 49 | 77 | 81 | 72 |
| Georgia | 72 | 50 | 85 | 97 | 62 | 72 | 65 |
| Brazil | 73 | 79 | 86 | 56 | 61 | 88 | 74 |
| Peru | 74 | 82 | 63 | 68 | 81 | 62 | 78 |
| Mongolia | 75 | 84 | 65 | 81 | 84 | 91 | 50 |
| Rwanda | 76 | 37 | 37 | 75 | 92 | 96 | 102 |
| Indonesia | 77 | 70 | 84 | 61 | 88 | 58 | 89 |
| Albania | 78 | 68 | 59 | 71 | 74 | 70 | 100 |
| Dominican Republic | 79 | 66 | 52 | 85 | 87 | 84 | 83 |
| Namibia | 80 | 55 | 31 | 78 | 95 | 109 | 86 |
| India | 81 | 78 | 98 | 54 | 99 | 71 | 63 |
| Sri Lanka | 82 | 63 | 88 | 87 | 78 | 69 | 90 |
| Tunisia | 83 | 103 | 96 | 94 | 66 | 80 | 54 |
| Guatemala | 84 | 73 | 67 | 55 | 94 | 94 | 85 |
| Ecuador | 85 | 95 | 93 | 51 | 76 | 77 | 94 |
| Moldova | 86 | 96 | 95 | 89 | 69 | 79 | 66 |
| Viet Nam | 87 | 77 | 87 | 91 | 86 | 100 | 61 |
| Kenya | 88 | 81 | 57 | 76 | 109 | 73 | 92 |
| Bosnia and Herzegovina | 89 | 97 | 111 | 83 | 70 | 61 | 95 |
| Ghana | 90 | 76 | 48 | 74 | 108 | 95 | 99 |
| Bhutan | 91 | 44 | 90 | 99 | 85 | 97 | 114 |
| Honduras | 92 | 100 | 78 | 64 | 93 | 86 | 101 |
| Kyrgyzstan | 93 | 104 | 102 | 98 | 73 | 63 | 96 |
| Iran | 94 | 107 | 118 | 95 | 79 | 78 | 55 |
| Lao PDR | 95 | 80 | 62 | 107 | 75 | 99 | 116 |
| Gambia | 96 | 85 | 35 | 102 | 104 | 90 | 118 |
| Senegal | 97 | 91 | 49 | 88 | 102 | 98 | 106 |
| Morocco | 98 | 93 | 100 | 103 | 83 | 106 | 81 |
| Paraguay | 99 | 102 | 69 | 93 | 89 | 105 | 97 |
| El Salvador | 100 | 90 | 107 | 86 | 100 | 104 | 110 |
| Algeria | 101 | 112 | 113 | 116 | 72 | 83 | 88 |
| Bolivia | 102 | 117 | 110 | 59 | 105 | 93 | 84 |
| Uganda | 103 | 86 | 66 | 104 | 110 | 111 | 108 |
| Egypt | 104 | 108 | 115 | 118 | 80 | 116 | 59 |
| Venezuela | 105 | 119 | 117 | 52 | 96 | 86 | 80 |
| Lesotho | 106 | 94 | 91 | 96 | 112 | 101 | 119 |
| Tanzania | 107 | 105 | 60 | 100 | 113 | 112 | 111 |
| Cambodia | 108 | 88 | 97 | 111 | 103 | 113 | 113 |
| Pakistan | 109 | 114 | 116 | 108 | 107 | 92 | 73 |
| Malawi | 110 | 106 | 104 | 101 | 111 | 115 | 98 |
| Nicaragua | 111 | 97 | 94 | 110 | 98 | 117 | 115 |
| Ethiopia | 112 | 110 | 105 | 112 | 100 | 114 | 103 |
| Mali | 113 | 109 | 101 | 109 | 114 | 108 | 117 |
| Bangladesh | 114 | 101 | 112 | 114 | 115 | 110 | 104 |
| Zimbabwe | 115 | 113 | 109 | 105 | 116 | 102 | 105 |
| Nepal | 116 | 115 | 114 | 115 | 106 | 103 | 109 |
| Mozambique | 117 | 111 | 73 | 117 | 118 | 118 | 107 |
| Madagascar | 118 | 116 | 89 | 113 | 119 | 107 | 112 |
| Yemen | 119 | 118 | 119 | 119 | 117 | 119 | 82 |

Note: The darkest blue means the country belongs to the 4th quartile (i.e., to the top 25% of best performers in the given pillar); the other three shades of blue represent (from darker to lighter) countries in the 3rd, 2nd, and 1st quartile. The data coloured tan must be interpreted with caution. We have reason to doubt the reliability of one of the indicators used for computation. GK Skills = Global Knowledge Skills; VT Skills = Vocational and Technical Skills.

Table 1
Countries with highest GTCI scores by income and regional groups

| COMPARISON GROUP | TOP 3 OF THE GROUP |
|--------------------------------------|---------------------------------------|
| By region | |
| Central and Southern Asia | Kazakhstan, India, Sri Lanka |
| East, Southeastern Asia and Oceania | Singapore, Australia, New Zealand |
| Europe | Switzerland, Norway, Sweden |
| Latin, Central America and Caribbean | Chile, Costa Rica, Uruguay |
| Northern America | United States, Canada |
| North Africa and Western Asia | United Arab Emirates, Qatar, Israel |
| Sub-Saharan Africa | Mauritius, Botswana, South Africa |
| By income group | |
| High-income countries | Switzerland, Singapore, United States |
| Upper-middle-income countries | Malaysia, Costa Rica, China |
| Lower-middle-income countries | Philippines, Ukraine, Armenia |
| Low-income countries | Rwanda, Gambia, Senegal |

country performs consistently well in the Enable sub-pillars: particularly the Regulatory Landscape (2nd) and the Business and Labour Landscape (6th). Although the country is ranked 1st in Ease of doing business, there is room for improvement in other variables related to the Market Landscape, such as Cluster development (45th) and R&D expenditure (33rd). The educational system is strong (New Zealand ranks in the top 20 in both Formal Education and Lifelong Learning), but it is mainly its strong showing in Access to Growth Opportunities (8th) that leads to its high ranking in the Grow pillar (13th).

Ireland (13th) is a top 15 performer in all pillars, although only in the Attract pillar—in 9th place—does it break into the top 10. Good talent attraction is the result of balancing good performance in both External and Internal Openness (ranked 10th and 12th, respectively). Ireland is one of the best attractors of foreign businesses and thus it also experiences a Brain gain (7th). Such talents come to an environment of high Social Inclusion, including a high Tolerance of immigrants (4th). The country's pools of Vocational and Technical Skills and Global Knowledge Skills are well balanced. In the Grow pillar, Ireland presents a good performance in Lifelong Learning (12th) and Access to Growth Opportunities (9th), but it still has room to improve in Formal Education (22nd).

Iceland (14th) demonstrates a strong performance in Global Knowledge Skills (5th), with a good pool of higher competences and the ability to innovate. Iceland achieves this without neglecting the pool of Vocational and Technical Skills (13th), whose performance is driven by very good Employability (7th) of the skills available in the country. Although the country has a desirable Lifestyle (7th), which translates into a strong Retain pillar score (7th), it still has room for improvement in attracting talent—it ranks 19th in the Attract pillar. The consistently strong

Regulatory, Market, and Business and Labour Landscapes ensure a solid ranking in the Enable pillar (19th).

Canada (15th) is one of the top 10 performers for luring foreign talent (it ranks 10th in the Attract pillar), which is achieved as a result of a good balance between External Openness (11th) and Internal Openness (11th). The country is the 2nd most tolerant of immigrants in the world and, as a consequence, it is experiencing a large Brain gain (9th). The share of tertiary-educated population is high and Employability is good (16th), which means that Canada is developing and attracting the skills needed by the economy. The country has many world-renowned universities, although it can still improve its production of Vocational and Technical Skills (22nd).

ANALYSIS BY INCOME AND REGIONAL GROUPS

The GTCI top performers are all high-income countries. As shown in Table 1, the GTCI leaders overall (Switzerland, Singapore, the United States) also lead the group of high-income countries. Malaysia leads the group of upper-middle-income countries and the Philippines the lower-middle-income group. The regions that have no countries within the highest quartile in the overall GTCI index (i.e., the top 30 countries) are Central and Southern Asia; Latin, Central America and the Caribbean; and Sub-Saharan Africa. The case of Chile deserves particular attention: it has the highest ranking within its region and for years it topped the group of upper-middle-income countries. Starting in 2016 Chile was classified as a high-income country.

Income Groups

Bearing in mind the strong positive correlation between GTCI scores and GDP per capita, analysing the relative positions of economies within their respective income groups brings additional insights. A cursory glance at the pillar-specific performance by income groups (see Figure 4) again highlights the observation that differences are more significant on the Output side (most noticeably for the Global Knowledge Skills pillar) than on the Input side. This is perhaps not surprising. High-income countries rely more on innovation, entrepreneurship, and collaborative partnerships for growth—a reliance that is reflected in knowledge workers with professional, managerial, and global leadership skills—than do lower-income countries.

Unsurprisingly, the high-income group dominates the GTCI rankings again this year, with a virtual stranglehold on the top 25th percentile of the list (i.e., the fourth quartile, comprising the 30 countries in the heatmap shown in Figure 3), ranging from Switzerland (1st) all the way down to the Republic of Korea (South Korea, 30th). Switzerland is the most consistent high performer, never once dropping out of the top 10, regardless of the pillar in question.

The high-income countries that are not part of the top 50 are **Hungary** (52nd), **Trinidad and Tobago** (55th), **Oman** (56th), and **Kuwait** (65th). **Uruguay** has improved positions by breaking into the top 50 (it is currently ranked 44th). Oman and Kuwait are particularly affected by weak Grow pillars, which mainly translate into a poor pool of Global Knowledge Skills. Countries that were classified in the high-income group in previous years and that

Figure 4
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.

have dropped to the upper-middle-income group are **Argentina** (49th), the Russian Federation (Russia, 53rd), and the **Bolivarian Republic of Venezuela** (Venezuela, 105th), all of which continue performing below their potential—although Argentina has improved since last year's GTCI. These three countries are particularly affected by a relatively poor performance in the Enable pillar—showing weaker Regulatory and Market Landscapes. This is especially the case for Venezuela, which comes in last of all 119 countries in this domain.

Table 2a–2d (pages 28–30) tabulates the better-performing (top 10) countries in each pillar by income group. Most economies display a good balance between the Input and Output sub-indices. One pillar where not all developed countries are consistently good is the Global Knowledge Skills pillar (see the heatmap in Figure 3). Anglo-Saxon countries have performed well in this domain: the United States (2nd in Global Knowledge Skills), the United Kingdom (3rd), Australia (6th), and New Zealand (7th); Ireland and Canada also perform well. This is in part explained by the structural shift of their economies towards knowledge jobs and services. Yet some gaps are left in the area of Technical and Vocational Skills (for instance, the United Kingdom ranks 25th in this area, while Australia ranks 24th). In terms of Vocational and Technical Skills, Switzerland (3rd in this pillar), **Germany** (4th), and Austria (7th) continue leading the way. Finland and Norway are also top performers. The **United Arab Emirates (UAE)** needs a special mention here because it is ranked 1st in Vocational and Technical Skills but, given its less up-to-date data, its position is less reliable than that of other countries—the UAE's data for some of the key variables relevant for this pillar were older than the threshold imposed by the GTCI and the lack of available data affected the ranking (in this case upward).

We look now at the best performers of the upper-middle-income group and the lower-middle-income group, both of

which are seeking to advance into the corresponding next income group. These two countries—Malaysia and the Philippines—are the same as last year; Malaysia has advanced in the GTCI rankings this year, but the Philippines has dropped back two spots.

Malaysia (27th) is the top-ranked country in the group of upper-middle-income countries, and it belongs to the fourth quartile of top-performing countries (see Figure 3). It is ranked above many high-income countries such as **Slovenia** (28th), **Portugal** (29th), and South Korea (30th). Malaysia performs particularly well in the Enable (22nd) and the Vocational and Technical Skills (21st) pillars, in both of which it is in the top quartile. Furthermore, after **Panama** (60th overall; 20th in Attract), it is the upper-middle-income country that attracts the most foreign talent (23rd in Attract). However, although Malaysia has experienced a significant Brain gain (10th in this area) and the sub-pillar of External Openness (18th) is solid, it can still improve its Tolerance of immigrants—and also of minorities. The attraction of talent is explained in part by the country's excellent performance in variables related to management practices and growth opportunities: Employee development (9th), Relationship of pay to productivity (5th), and, above all, Collaboration across organisations (where Malaysia is 1st in the world). **Costa Rica** (35th) is the next in the rankings of upper-middle-income countries, coming in above high-income countries such as Italy (36th), Poland (39th), Slovakia (40th), and Saudi Arabia (41st).

The Philippines (54th) is the top-ranked lower-middle-income country, coming in above three high-income countries (Trinidad and Tobago at 55th, Oman at 56th, and Kuwait at 65th) and also several upper-middle-income countries—notably Turkey (68th) and Thailand (70th). Its greatest strength is its good pool of Global Knowledge Skills (36th). The Philippines' performance in the VT Skills pillar must be interpreted with

Table 2a

Best performers by income group: High-income countries (46 countries)

| GTCI | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|------------------------------|------------------------------|---------------------------|------------------------------|-----------------|---------------------------------|------------------------------|
| Switzerland (1) | Singapore (2) | Singapore (2) | Netherlands (9) | Switzerland (1) | United Arab Emirates (17) | Singapore (2) |
| Singapore (2) | Switzerland (1) | Luxembourg (10) | United States of America (3) | Norway (4) | United States (3) | United States of America (3) |
| United States of America (3) | Denmark (7) | United Arab Emirates (17) | Switzerland (1) | Austria (18) | Switzerland (1) | United Kingdom (8) |
| Norway (4) | New Zealand (12) | Qatar (23) | Finland (6) | Sweden (5) | Germany (19) | Israel (24) |
| Sweden (5) | Sweden (5) | Switzerland (1) | Norway (4) | Finland (6) | Finland (6) | Iceland (14) |
| Finland (6) | United Kingdom (8) | New Zealand (12) | Sweden (5) | Denmark (7) | Norway (4) | Australia (11) |
| Denmark (7) | Japan (20) | Australia (11) | United Kingdom (8) | Iceland (14) | Austria (18) | New Zealand (12) |
| United Kingdom (8) | United States of America (3) | United Kingdom (8) | Denmark (7) | Luxembourg (10) | Singapore (2) | Sweden (5) |
| Netherlands (9) | Finland (6) | Ireland (13) | Belgium (16) | Netherlands (9) | Netherlands (9) | Switzerland (1) |
| Luxembourg (10) | Norway (4) | Canada (15) | Singapore (2) | Germany (19) | Denmark (7) | Estonia (22) |

Note: Numbers in parentheses are overall GTCI ranks. The performance of the United Arab Emirates and the United States on the VT Skills pillar must be interpreted with caution (see Endnote 2).

caution (see Endnote 2). The next lower-middle-income country in the rankings is **Ukraine** (61st), which performs better than many upper-middle-income countries such as South Africa (63rd), Colombia (67th), and Mexico (71st).

Although in recent years we have witnessed a cooling off in the growth of emerging markets, the **BRICS** cannot be ignored in the global talent race. It is **China** (43rd) that leads the pack. China is ranked in the top quartile in the Grow (29th) and Global Knowledge Skills (22nd) pillars. Formal Education in particular posts a good performance, as reflected in the reading, maths, and science competences of Chinese students (PISA scores) and in the rise of Chinese universities in international rankings. China is also using these skills to produce innovations, and thus the sub-pillar for Talent Impact (2nd) exhibits an excellent performance. The areas that need improvement have to do with personal rights, tolerance of both immigrants and minorities, and also variables linked to lifestyle. China is followed by **Russia** (53rd), which has a strong pool of Global Knowledge Skills (26th in this domain) but has other areas that need important improvements. The country has a solid system of Formal Education (29th). But its biggest challenge continues to be the attraction of talent (Russia is ranked 106th in the Attract pillar), where both External and Internal Openness show a poor performance (98th and 102nd, respectively). In addition to improving the latter, a more friendly business and regulatory environment will help attract global talent. **South Africa** is ranked 63rd. Although the system of Formal Education is not exemplary (ranked 76th), the private sector does facilitate Lifelong Learning (24th) and Access to Growth Opportunities (28th). The country also seems open to attracting global talent (it ranks 45th in External Openness and 39th in Internal Openness); yet its greatest challenge is in retaining talent, which is particularly affected by its unattractive

Lifestyle (where it ranks 114th in terms of Personal Safety). **Brazil** (73rd) shows its greatest strength in the Grow pillar (ranked 56th in this domain); it has some renowned universities in particular. Yet its performance in the other pillars rarely reaches the 70th position (the pillars are mainly located in the second quartile of lower scores) and Brazil is outperformed by many other upper-middle-income countries as well as by some lower-middle-income ones. The Brazilian labour market in particular needs attention, since Labour-employer cooperation is low and Active labour market policies are absent or ineffective. **India** (81st) is the laggard of this group. Formal Education (67th) and Lifelong Learning (37th) are keeping pace—and thus the pool of Global Knowledge Skills (63rd) is solid compared with other emerging markets. Where the country has plenty of room for improvement is in minimising brain drain while achieving a brain gain by luring back some of its talented diaspora members (it ranks 98th in the Attract pillar) and in retaining its own talent (99th in Retain)—particularly in the context of high emigration rates of high-skilled people (India is at serious risk of worsening its brain drain despite the connection with the diasporas working in the information technology sector).

The low-income countries in the GTCI sample come in last, ranging from the 76th position held by **Rwanda** (the best performer of this income group) to the 118th position of **Madagascar**. There are 12 countries of the GTCI sample that are classified as low-income countries (many low-income countries do not have enough data available to be included in the GTCI computations) and the majority are located in Sub-Saharan Africa (the only exception is Nepal).

Table 2b

Best performers by income group: Upper-middle-income countries (34 countries)

| GTCI | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|-------------------------|-----------------|-------------------------|-------------------------|-------------------------|---------------------------------|-------------------------|
| Malaysia (27) | Malaysia (27) | Panama (45) | China (43) | Malaysia (27) | Malaysia (27) | China (43) |
| Costa Rica (35) | Mauritius (46) | Malaysia (27) | Costa Rica (35) | Mauritius (46) | Montenegro (58) | Russian Federation (53) |
| China (43) | Costa Rica (35) | Costa Rica (35) | Malaysia (27) | Costa Rica (35) | Azerbaijan (57) | Lebanon (60) |
| Panama (45) | China (43) | Namibia (80) | Argentina (49) | Azerbaijan (57) | Costa Rica (35) | Bulgaria (47) |
| Mauritius (46) | Macedonia (59) | Mauritius (46) | South Africa (63) | Bulgaria (47) | Lebanon (60) | Malaysia (27) |
| Bulgaria (47) | Botswana (62) | Botswana (62) | Colombia (67) | Kazakhstan (51) | Mauritius (46) | Serbia (69) |
| Argentina (49) | Thailand (70) | Jordan (50) | Botswana (62) | Panama (45) | Argentina (49) | Turkey (68) |
| Jordan (50) | Georgia (72) | South Africa (63) | Mexico (71) | Argentina (49) | Russian Federation (53) | Montenegro (58) |
| Kazakhstan (51) | Jordan (50) | Dominican Republic (79) | Russian Federation (53) | Jordan (50) | Kazakhstan (51) | Kazakhstan (51) |
| Russian Federation (53) | Bulgaria (47) | Azerbaijan (57) | Ecuador (85) | Russian Federation (53) | Jordan (50) | Panama (45) |

Note: Numbers in parentheses are overall GTCI ranks.

Table 2c

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

| GTCI | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--------------------|------------------|------------------|----------------------------------|--------------------|---------------------------------|-------------------------|
| Philippines (54) | Bhutan (91) | Ghana (90) | Philippines (54) | Ukraine (61) | Ukraine (61) | Philippines (54) |
| Ukraine (61) | Philippines (54) | Philippines (54) | India (81) | Armenia (66) | Armenia (66) | Armenia (66) |
| Armenia (66) | Sri Lanka (82) | Kenya (88) | Guatemala (84) | Tunisia (83) | Indonesia (77) | Ukraine (61) |
| Mongolia (75) | Indonesia (77) | Lao PDR (95) | Bolivia, Plurinational St. (102) | Philippines (54) | Kyrgyzstan (93) | Mongolia (75) |
| Indonesia (77) | Armenia (66) | Armenia (66) | Indonesia (77) | Moldova, Rep. (86) | Sri Lanka (82) | Tunisia (83) |
| India (81) | Guatemala (84) | Mongolia (75) | Honduras (92) | Kyrgyzstan (93) | India (81) | Egypt (104) |
| Sri Lanka (82) | Ghana (90) | Guatemala (84) | Ukraine (61) | Lao PDR (95) | Kenya (88) | Viet Nam (87) |
| Tunisia (83) | Viet Nam (87) | Honduras (92) | Ghana (90) | Sri Lanka (82) | Philippines (54) | India (81) |
| Guatemala (84) | India (81) | Indonesia (77) | Kenya (88) | Egypt (104) | Moldova, Rep. (86) | Moldova, Rep. (86) |
| Moldova, Rep. (86) | Lao PDR (95) | Viet Nam (87) | Mongolia (75) | Morocco (98) | Tunisia (83) | Pakistan (109) |

Note: Numbers in parentheses are overall GTCI ranks.

Regional Groups

Regions are composed of very heterogeneous countries. For example, Sub-Saharan Africa includes eleven low-income countries, with Rwanda (76th) as the highest-ranked among them; three lower-middle-income countries; and four upper-middle-income countries, which occupy the highest rankings in the region. Northern America, on the other hand, includes only high-income countries (the United States and Canada), which show

smaller differences in terms of development and GDP per capita. Figure 5 shows how regions perform across the various pillars of the GTCI model. Table 3 on page 32 then lists the top 10 performers by regional group.

Below are some highlights for the top-ranked countries in each region:

Central and Southern Asia (9 countries): Despite this group only having nine countries represented in the GTCI, it has

Table 2d

Best performers by income group: Low-income countries (12 countries)

| GTCI | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------|-----------------------------|
| Rwanda (76) | Rwanda (76) | Gambia (96) | Rwanda (76) | Rwanda (76) | Gambia (96) | Malawi (110) |
| Gambia (96) | Gambia (96) | Rwanda (76) | Senegal (97) | Ethiopia (112) | Rwanda (76) | Rwanda (76) |
| Senegal (97) | Uganda (103) | Senegal (97) | Tanzania, United Rep. (107) | Senegal (97) | Senegal (97) | Ethiopia (112) |
| Uganda (103) | Senegal (97) | Tanzania, United Rep. (107) | Malawi (110) | Gambia (96) | Zimbabwe (115) | Zimbabwe (115) |
| Tanzania, United Rep. (107) | Tanzania, United Rep. (107) | Uganda (103) | Gambia (96) | Nepal (116) | Nepal (116) | Senegal (97) |
| Malawi (110) | Malawi (110) | Mozambique (117) | Uganda (103) | Uganda (103) | Madagascar (118) | Mozambique (117) |
| Ethiopia (112) | Mali (113) | Madagascar (118) | Zimbabwe (115) | Malawi (110) | Mali (113) | Uganda (103) |
| Mali (113) | Ethiopia (112) | Mali (113) | Mali (113) | Tanzania, United Rep. (107) | Uganda (103) | Nepal (116) |
| Zimbabwe (115) | Mozambique (117) | Malawi (110) | Ethiopia (112) | Mali (113) | Tanzania, United Rep. (107) | Tanzania, United Rep. (107) |
| Nepal (116) | Zimbabwe (115) | Ethiopia (112) | Madagascar (118) | Zimbabwe (115) | Ethiopia (112) | Madagascar (118) |

Note: Numbers in parentheses are overall GTCI ranks. The performance of the United Arab Emirates and the United States on the VT Skills pillar must be interpreted with caution (see Endnote 2).

the largest potential pool of human capital of all the regions: more than 1.7 billion people live in Central and Southern Asia, with India leading the way with a population of over 1.25 billion. Unfortunately, the region's talent performance is not good. Kazakhstan (51st) is one of two upper-middle-income countries (the other is the **Islamic Republic of Iran** (94th)). Kazakhstan ranks above the median of performance in the GTCI sample (mainly supported by its relatively good Enable pillar, ranked 58th) but is an outlier: 2nd place is taken by India (81st) and 3rd by **Sri Lanka** (82nd), which are well below the regional median in terms of ranking. **Kazakhstan** is able to attract foreign businesses and some talent, fuelled by its oil industry and an eagerness to diversify its economy (Attract pillar: 58th). Yet the country is lagging behind in the Grow pillar (79th)—particularly because Lifelong Learning and Access to Growth Opportunities are immature. Without doubt, an improvement in India would have the greatest impact in terms of the pool of talent not only in this region but also globally. As discussed in the BRICS section, India has been able to create a stable pool of Global Knowledge Skills but it has suffered in the Retain pillar (99th). Although diasporas have been engaged successfully in some industries, a great deal of talent continues to leave the country, and thus India still experiences a brain drain.

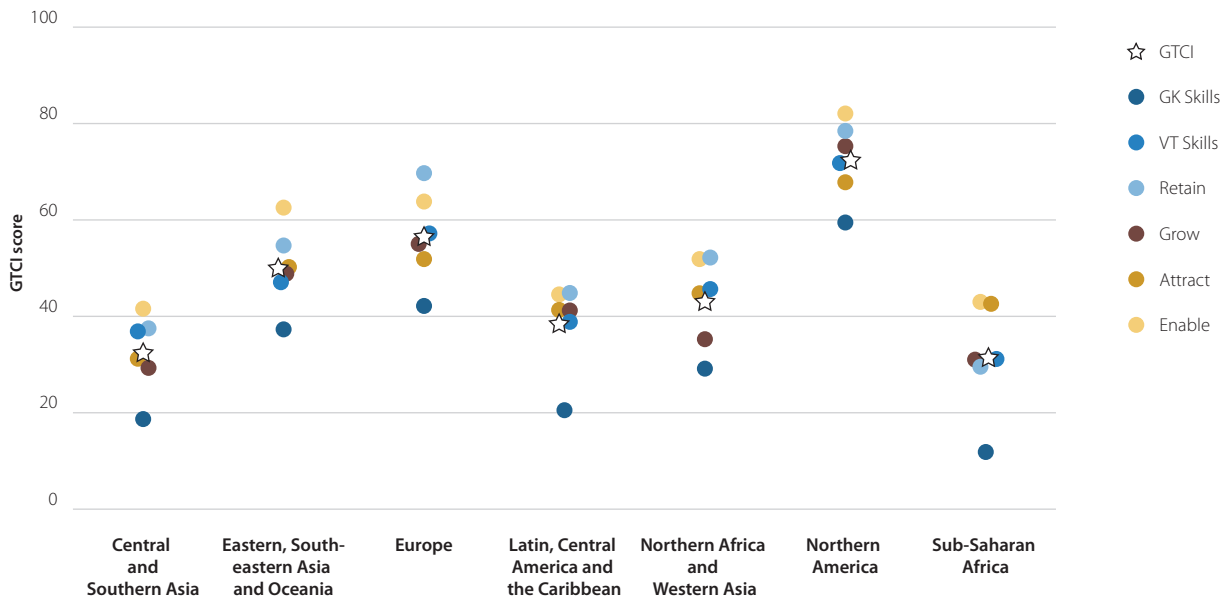
Eastern, Southeastern Asia and Oceania (14 countries):

Singapore (2nd) is the flag bearer of performance in the region. Next comes Australia (11th) and New Zealand (12th); the performance of these three countries has been described above. This region shows wide variety in terms of performance. **Japan** (20th) has a solid overall performance, although its talent competitiveness is held back by a low performance in the Attract pillar (54th); Japan is far behind the top three countries of this

region, and even middle-income countries such as Malaysia attract more foreign talent. **Indonesia** (77th) has a long way to go to catch up on all the pillars, yet the country has strong Employability (29th in this area) of its domestic population—and it is increasingly perceived by business leaders as being attractive to high-skilled people, scoring relatively high on potential Brain gain (even though the stock of migrants in the country is still small). **Thailand** (70th) also needs to catch up across the different pillars, but it does boast a relatively better performance in the Enable pillar (48th)—particularly driven by the Market Landscape and the Business and Labour Landscape, both of which perform well relative to the performance of emerging markets. Although **South Korea** (30th) makes it into the top quartile of this year's rankings, it is the lowest-ranking high-income country in the region. Despite being a top country in dimensions such as Tertiary enrolment (2nd) and ICT Infrastructure (1st), as well as an excellent Market Landscape ranking (3rd), the country has major room for improvement in the Attract pillar (81st).

Europe (38 countries): Eight European countries are within the top 10 high performers group in this year's GTCI (all described above)—the only non-Europeans in this group are Singapore and the United States. Ireland and Iceland join in the top 15 this year. Yet performance in this region is largely heterogeneous. In general, smaller European countries tend to perform better than larger ones: for example, the Benelux countries (Belgium, the Netherlands, and Luxembourg) all rank higher than larger European economies such as Germany and France. **France** (21st) exhibits a solid Grow pillar (17th), given the quality of its higher education institutions. The country lags behind particularly in the Enable pillar (29th)—its Business and Labour Landscape has room for improvement, especially in terms of labour

Figure 5
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.

market flexibility. Among other big economies, **Italy** (36th) has the lowest overall performance, ranking lower than several Eastern European countries. Although the country has excellent clusters (it is a world-class performer here), Italy's showing is affected by the Regulatory Landscape (56th) and, above all, the Business and Labour Landscape (103rd)—Labour-employer cooperation exhibits a lower performance than many less-developed nations. Italy has ample room for improvement in its External Openness, especially in attracting talent from abroad.

Latin, Central America and the Caribbean (19 countries): **Chile** (33rd) is the top performer of the region, particularly given its strong Grow pillar (24th). Although its stock of migrant population is still rather low, Chile is increasingly considered a country that is attractive to foreign talent. This is especially the case given recent policies intended to attract foreign entrepreneurs. Such success is likely to continue given the good business environment prevalent in the country (Enable pillar: 32nd). The economy is supported by a solid pool of Global Knowledge Skills (45th) and is able to retain a large share of its talent, given its good Lifestyle by regional standards. Costa Rica (35th) and Panama (45th) stand out for their strong Attract pillars (24th and 20th, respectively). These countries have become hubs in Central America. **Uruguay** (44th), as the other large high-income country in the region after Chile, is another country with a strong Attract pillar (28th), in addition to its relatively good Grow pillar (39th). None of the other countries in the region exhibit an impressive performance or even a performance corresponding to their level of development. Brazil and Mexico, the two largest economies of the region, are below the median in terms of GTCI score. Brazil has been discussed above (in the BRICS section). **Mexico** (71st) has a relatively good Grow pillar (49th), with improving Access to Growth Opportunities and Lifelong Learning. But the country

faces a big challenge in retaining its talent (it ranks 77th in this pillar)—a challenge that is more likely to be met once Mexico improves in Lifestyle (80th in this sub-pillar), particularly by offering more security to its citizens.

Northern Africa and Western Asia (19 countries): The United Arab Emirates (UAE, 17th), **Qatar** (23rd), and **Israel** (24th) are all part of the high-performing 25th percentile of countries (i.e., the top quartile comprising 30 countries). The two Gulf Cooperation Council (GCC) nations perform relatively better in the Input pillars. They are good at attracting foreign workers (Qatar comes in at 4th and the UAE at 3rd in the Attract pillar) and at creating the proper context for the operation of businesses by having a solid Enable pillar (Qatar is 20th here; the UAE is 11th). Israel performs better in the Output pillars and, in particular, it is a top country in terms of Global Knowledge Skills (4th)—a dimension where the GCC countries lag behind. Aside from Yemen (at the bottom of the rankings at 119th), the Northern African countries of the GTCI sample have the lowest overall GTCI score in the region (**Tunisia** is 83rd; **Morocco**, 98th; **Algeria**, 101st; **Egypt**, 104th). Two countries have particular potential to host creative talent. **Turkey** (68th) is relatively solid in terms of Global Knowledge Skills (47th) and also has a relatively strong Enable pillar (61st)—at least compared with other middle-income countries. Its main weakness is that it does not attract foreign talent (its Attract pillar ranks a low 108th). **Jordan** (50th) can be highlighted as a place to which corporations may gravitate, with a relatively high score for Global Knowledge Skills (57th). Unlike Turkey, Jordan does increasingly attract foreign talent (it has become a technology and start-up hub for its region and it ranks 39th in the Attract pillar). **Saudi Arabia** (41st) performs even better than some European countries—such as Greece (42nd) and Bulgaria (47th)—but it still lags behind the regional leaders.

Northern America (2 countries): Both North American economies—the United States (3rd) and Canada (15th)—feature in the top 15 high performers of this year’s GTCI. The countries are fairly evenly matched in the Enable pillar (Canada at 14th; the United States at 8th), with good Regulatory and Market Landscapes—Canada performs better in the Regulatory Landscape (Canada: 8th; the United States: 21st) whereas the United States outperforms Canada in the Market Landscape (Canada: 23rd; the United States: 1st). Although Canada is slightly better at attracting talent (10th versus 18th in the Attract pillar), particularly given its high tolerance of immigrants and minorities, the United States ranks slightly higher in the Retain pillar. Given the leading position of the United States in the Grow pillar (2nd, compared with

14th for Canada), it has been able to create a stronger pool of Global Knowledge Skills (2nd, compared with 11th in Canada).

Sub-Saharan Africa (18 countries): Four upper-middle-income countries of this group dominate the five top places of the region: **Mauritius** (46th), **Botswana** (62nd), **South Africa** (63rd), and **Namibia** (80th). The other country in the top five of the region is Rwanda (76th). Only Mauritius is above the median GTCI score, supported by a solid Enable pillar (33rd in the rankings); the Regulatory Landscape of the country is particularly good (24th). This edition of the GTCI has improved country coverage in this region, which often shows data limitations: big economies such as Nigeria are still not covered.

Table 3

Ten best performers by regional group

| GTCI | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--|------------------|------------------|------------------|------------------|---------------------------------|-------------------------|
| Central and Southern Asia (9 countries) | | | | | | |
| Kazakhstan (51) | Bhutan (91) | Kazakhstan (51) | India (81) | Kazakhstan (51) | Kazakhstan (51) | Kazakhstan (51) |
| India (81) | Kazakhstan (51) | Sri Lanka (82) | Kazakhstan (51) | Kyrgyzstan (93) | Kyrgyzstan (93) | Iran (94) |
| Sri Lanka (82) | Sri Lanka (82) | Bhutan (91) | Sri Lanka (82) | Sri Lanka (82) | Sri Lanka (82) | India (81) |
| Bhutan (91) | India (81) | India (81) | Iran (94) | Iran (94) | India (81) | Pakistan (109) |
| Kyrgyzstan (93) | Bangladesh (114) | Kyrgyzstan (93) | Kyrgyzstan (93) | Bhutan (91) | Iran (94) | Sri Lanka (82) |
| Iran (94) | Kyrgyzstan (93) | Bangladesh (114) | Bhutan (91) | India (81) | Pakistan (109) | Kyrgyzstan (93) |
| Pakistan (109) | Iran (94) | Nepal (116) | Pakistan (109) | Nepal (116) | Bhutan (91) | Bangladesh (114) |
| Bangladesh (114) | Pakistan (109) | Pakistan (109) | Bangladesh (114) | Pakistan (109) | Nepal (116) | Nepal (116) |
| Nepal (116) | Nepal (116) | Iran (94) | Nepal (116) | Bangladesh (114) | Bangladesh (114) | Bhutan (91) |
| Eastern, Southeastern Asia and Oceania (14 countries) | | | | | | |
| Singapore (2) | Singapore (2) | Singapore (2) | Singapore (2) | Australia (11) | Singapore (2) | Singapore (2) |
| Australia (11) | New Zealand (12) | New Zealand (12) | Australia (11) | Japan (20) | Japan (20) | Australia (11) |
| New Zealand (12) | Japan (20) | Australia (11) | New Zealand (12) | New Zealand (12) | New Zealand (12) | New Zealand (12) |
| Japan (20) | Australia (11) | Malaysia (27) | Japan (20) | Singapore (2) | Malaysia (27) | South Korea (30) |
| Malaysia (27) | Malaysia (27) | Japan (20) | South Korea (30) | Malaysia (27) | Australia (11) | China (43) |
| South Korea (30) | South Korea (30) | Thailand (70) | China (43) | South Korea (30) | South Korea (30) | Japan (20) |
| China (43) | China (43) | Philippines (54) | Malaysia (27) | China (43) | Indonesia (77) | Philippines (54) |
| Philippines (54) | Thailand (70) | Laos (95) | Philippines (54) | Philippines (54) | China (43) | Malaysia (27) |
| Thailand (70) | Philippines (54) | Mongolia (75) | Indonesia (77) | Thailand (70) | Philippines (54) | Mongolia (75) |
| Mongolia (75) | Indonesia (77) | China (43) | Thailand (70) | Laos (95) | Thailand (70) | Vietnam (87) |

(continued on next page)

Table 3 (continued)

Ten best performers by regional group

| GTCI | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------------|---------------------------|
| Europe (38 countries) | | | | | | |
| Switzerland (1) | Switzerland (1) | Luxembourg (10) | Netherlands (9) | Switzerland (1) | Switzerland (1) | United Kingdom (8) |
| Norway (4) | Denmark (7) | Switzerland (1) | Switzerland (1) | Norway (4) | Germany (19) | Iceland (14) |
| Sweden (5) | Sweden (5) | United Kingdom (8) | Finland (6) | Austria (18) | Finland (6) | Sweden (5) |
| Finland (6) | United Kingdom (8) | Ireland (13) | Norway (4) | Sweden (5) | Norway (4) | Switzerland (1) |
| Denmark (7) | Finland (6) | Sweden (5) | Sweden (5) | Finland (6) | Austria (18) | Estonia (22) |
| United Kingdom (8) | Norway (4) | Norway (4) | United Kingdom (8) | Denmark (7) | Netherlands (9) | Ireland (13) |
| Netherlands (9) | Netherlands (9) | Denmark (7) | Denmark (7) | Iceland (14) | Denmark (7) | Denmark (7) |
| Luxembourg (10) | Ireland (13) | Belgium (16) | Belgium (16) | Luxembourg (10) | Sweden (5) | Finland (6) |
| Ireland (13) | Germany (19) | Finland (6) | Ireland (13) | Netherlands (9) | Belgium (16) | Netherlands (9) |
| Iceland (14) | Austria (18) | Netherlands (9) | Iceland (14) | Germany (19) | Iceland (14) | Norway (4) |
| Latin, Central America and the Caribbean (19 countries) | | | | | | |
| Chile (33) | Chile (33) | Panama (45) | Chile (33) | Uruguay (44) | Chile (33) | Chile (33) |
| Costa Rica (35) | Costa Rica (35) | Costa Rica (35) | Costa Rica (35) | Chile (33) | Costa Rica (35) | Panama (45) |
| Uruguay (44) | Uruguay (44) | Uruguay (44) | Argentina (49) | Costa Rica (35) | Trinidad and Tobago (55) | Argentina (49) |
| Panama (45) | Colombia (67) | Chile (33) | Uruguay (44) | Panama (45) | Argentina (49) | Costa Rica (35) |
| Argentina (49) | Panama (45) | Trinidad and Tobago (55) | Colombia (67) | Argentina (49) | Peru (74) | Trinidad and Tobago (55) |
| Trinidad and Tobago (55) | Trinidad and Tobago (55) | Dominican Republic (79) | Mexico (71) | Trinidad and Tobago (55) | Colombia (67) | Uruguay (44) |
| Colombia (67) | Dominican Republic (79) | Peru (74) | Ecuador (85) | Brazil (73) | Panama (45) | Colombia (67) |
| Mexico (71) | Mexico (71) | Guatemala (84) | Venezuela (105) | Ecuador (85) | Uruguay (44) | Mexico (71) |
| Brazil (73) | Guatemala (84) | Argentina (49) | Guatemala (84) | Mexico (71) | Ecuador (85) | Brazil (73) |
| Peru (74) | Brazil (73) | Paraguay (99) | Brazil (73) | Peru (74) | Mexico (71) | Peru (74) |
| Northern Africa and Western Asia (19 countries) | | | | | | |
| United Arab Emirates (17) | United Arab Emirates (17) | United Arab Emirates (17) | United Arab Emirates (17) | Israel (24) | United Arab Emirates (17) | Israel (24) |
| Qatar (23) | Qatar (23) | Qatar (23) | Qatar (23) | United Arab Emirates (17) | Qatar (23) | Cyprus (37) |
| Israel (24) | Israel (24) | Bahrain (38) | Israel (24) | Saudi Arabia (41) | Israel (24) | Lebanon (60) |
| Cyprus (37) | Bahrain (38) | Oman (56) | Bahrain (38) | Qatar (23) | Cyprus (37) | Armenia (66) |
| Bahrain (38) | Saudi Arabia (41) | Cyprus (37) | Saudi Arabia (41) | Azerbaijan (57) | Azerbaijan (57) | United Arab Emirates (17) |
| Saudi Arabia (41) | Oman (56) | Jordan (50) | Lebanon (60) | Cyprus (37) | Saudi Arabia (41) | Turkey (68) |
| Jordan (50) | Cyprus (37) | Kuwait (65) | Turkey (68) | Oman (56) | Lebanon (60) | Tunisia (83) |
| Oman (56) | Georgia (72) | Saudi Arabia (41) | Cyprus (37) | Kuwait (65) | Bahrain (38) | Jordan (50) |
| Azerbaijan (57) | Jordan (50) | Israel (24) | Jordan (50) | Jordan (50) | Jordan (50) | Egypt (104) |
| Lebanon (60) | Azerbaijan (57) | Azerbaijan (57) | Oman (56) | Bahrain (38) | Oman (56) | Saudi Arabia (41) |

(continued on next page)

Table 3 (continued)

Ten best performers by regional group

| GTCI | ENABLE | ATTRACT | GROW | RETAIN | VOCATIONAL AND TECHNICAL SKILLS | GLOBAL KNOWLEDGE SKILLS |
|--|-------------------|-------------------|-------------------|-------------------|---------------------------------|-------------------------|
| North 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 (18 countries) | | | | | | |
| Mauritius (46) | Mauritius (46) | Namibia (80) | South Africa (63) | Mauritius (46) | Mauritius (46) | South Africa (63) |
| Botswana (62) | Rwanda (76) | Mauritius (46) | Botswana (62) | Botswana (62) | South Africa (63) | Botswana (62) |
| South Africa (63) | Botswana (62) | Gambia (96) | Mauritius (46) | Rwanda (76) | Kenya (88) | Namibia (80) |
| Rwanda (76) | Namibia (80) | Botswana (62) | Ghana (90) | Namibia (80) | Botswana (62) | Mauritius (46) |
| Namibia (80) | South Africa (63) | Rwanda (76) | Rwanda (76) | South Africa (63) | Gambia (96) | Kenya (88) |
| Kenya (88) | Ghana (90) | South Africa (63) | Kenya (88) | Ethiopia (112) | Ghana (90) | Malawi (110) |
| Ghana (90) | Kenya (88) | Ghana (90) | Namibia (80) | Senegal (97) | Rwanda (76) | Ghana (90) |
| Gambia (96) | Gambia (96) | Senegal (97) | Senegal (97) | Gambia (96) | Senegal (97) | Rwanda (76) |
| Senegal (97) | Uganda (103) | Kenya (88) | Lesotho (106) | Ghana (90) | Lesotho (106) | Ethiopia (112) |
| Uganda (103) | Senegal (97) | Tanzania (107) | Tanzania (107) | Kenya (88) | Zimbabwe (115) | Zimbabwe (115) |

ENDNOTES

- 1 Countries are grouped according to the World Bank Income Classifications. Economies are divided based on their 2015 gross national income (GNI) per capita, calculated using the World Bank Atlas method (see <https://blogs.worldbank.org/opendata/new-country-classifications-2016>). The groups are: low income; lower-middle income; upper-middle income; and high income. Regional groups are based on the United Nations Regional Classifications: Central and Southern Asia; Eastern, Southeastern Asia and Oceania; Europe; Latin, Central America and the Caribbean; Northern Africa and Western Asia; Northern America; and Sub-Saharan Africa.
- 2 The scores and ranks on the VT Skills pillar must be interpreted with caution. As a result of a restructuring of the source database of one of the indicators (workforce with secondary education), the VT results for a few countries, particularly the sub-pillar of Mid-level skills, have changed significantly with respect to the GTCI 2017 and may not be reliable. Data sources will be harmonized in the next edition of the GTCI.
- 3 See Endnote 2.

CHAPTER 2

How Diversity Unleashes the Power of Work

Alain Dehaze

The Adecco Group

The clothing group Diesel has won notoriety for its original, often provocative, advertising designed to stimulate unconventional thinking among its audience. One very recent commercial was entitled 'Go with the Flaws', playing on atypical traits in people's appearance and personality, disruptively suggesting that what may be perceived superficially as blemishes can in fact be seen as the beauty of diversity.

By implying differences should be celebrated, not criticised, the company's video, set against Edith Piaf's most famous soundtrack, unwittingly makes a wider point about the value of diversity—not just in selling jeans and shirts but in society as a whole, where difference should be regarded as a quality, not an obstacle.

At a time when the global economy is characterised by spiralling uncertainty and fast and unpredictable change, flexibility and continuous learning have become essential to survive and compete. To adapt and thrive in such a highly dynamic environment, organisations need to think and work in as diverse a way as possible. A truly diverse and inclusive corporate culture becomes

a competitive advantage to attract talent and create a more sustainable, creative, high-performing, and engaging workplace. Diversity and inclusion strategies are, in a nutshell, essential to enhancing talent competitiveness.

This picture does not reflect the reality yet: in the United Kingdom, for example, over one in five of 2,000 public and private sector employees surveyed admitted to having taken action to hide their age, disability, social background, or sexuality—either in the workplace or when applying for a job—with age as the most likely culprit (6.4%), followed by disability (5.6%).¹

The Adecco Group views diversity and inclusion as pillars in striving to be among the most engaging, inspiring, and healthy places to work. This focus on diversity goes beyond just seeking fairness in employing under-represented or legally protected groups: the full power of diversity involves true 'diversity of thought, experiences and perspectives'.²

Such a holistic approach to diversity can improve decision making because diversity prompts more careful and creative information processing than in homogeneous groups. It boosts

new insights, as generating an idea quickly can require connecting multiple tasks and inputs. It can, moreover, improve an organisation's ability to attract talent through a learning culture where people feel accepted, are comfortable contributing ideas, and seek to learn from each other: the 'one right way' approach is replaced by leaders stimulating an inclusive culture.

Diversity is all the more important when seen in the context of the unprecedented skills gaps confronting many countries. Nurturing creative ways of thinking and staffing becomes essential. That means removing barriers to diversity in the workplace, urging managers and incentivising training and a concerted effort by policymakers and organisations to create the conditions for diversity to thrive.

What then is the role of employers to address the diversity gap? Changing policies and practices within a single company is a good start. But companies must work together, and partner with government and civil society to truly move the dial. Workforce solutions providers play a critical part in this equation. Providing more than 1 million people around the world with career opportunities, guidance, and insights, the Adecco Group has the reach and influence to drive durable change. Its approach tackles the problem from multiple angles, and hinges on changing mindsets and behaviours, not only policies.

DIVERSITY FROM TOP TO BOTTOM

Setting the right tone from the top of an organisation is essential, but not sufficient. Organisations also need to 'operationalise' diversity and inclusion by embedding such concepts into everyday business practice. That means, for example, redefining the way managers hire, run teams, assign targets, and promote and remunerate individuals.

In the hiring process, beyond fighting bias, recruiters must think proactively about the differences in culture, mindset, and leadership styles in their teams. They must challenge confirmation biases all the way to the top. A premium must be put on having the right mix to foster creativity, open debate, and avoid falling into self-affirming group thinking.

Research reveals correlation between high cognitive diversity and high performance—that is, different types of brains and personalities.^{3,4} Studies also report that diversity and inclusion stimulate innovation and entrepreneurship.⁵ That all suggests existing and entrenched competency-based interview processes should be enhanced by questions helping to single out cognitively diverse candidates who can add value beyond the formal job requirements.⁶

In career succession, alongside traditional factors considered in decisions about internal promotions (performance, potential, learning agility, leadership skills, etc.), diversity thinking, experience, and perspectives should also play a role. That ensures a culture of inclusion empowering staff, boosting collaboration, increasing engagement, and inspiring innovation.

GOING BEYOND THE BASICS

While diversity of thought, experience, and perspective is a genuine enabler that enhances performance, it is also important to look at diversity in terms of specifically defined groups. Women,

for example, today account for an average of just 16% of executive teams in the United States, 12% in the United Kingdom, and a mere 6% in Brazil—wholly under-represented at the top of corporations globally.

A 2015 study by Adecco Group UK and Ireland, entitled *The Gender Agenda: STEMing the gap*,⁷ found women comprised nearly half of Britain's workforce, but only 13% had jobs in science, technology, engineering, or maths (STEM)-related fields. Raising such inadequate levels can succeed only through cooperation between government, parents, and teachers. Family and school role models play a vital role. And it is crucial for STEM employers to invest in developing a more inclusive culture where women feel supported.

Ethnicity is another weakness. In the United Kingdom, 78% of senior leadership teams do not reflect the country's racial mix. In Brazil, the corresponding figure is 91% and an astonishing 97% in the United States.⁸ Yet ethnically diverse companies are 35% more likely to outperform and gender diverse companies are 15% more likely to do so.⁹

Diversity is all the more important when seen in the context of the unprecedented skills gaps confronting many countries. Nurturing creative ways of thinking and staffing becomes essential.

Diversity and inclusion, however, are not just about making up the numbers. They must be managed properly for optimum results. Obligatory diversity training and hiring tests can go wrong, exacerbating existing prejudices. Companies should look instead to models based on 'learning-and-effectiveness' that focus on integration and involve learning and adapting as staff members progress. Such techniques grant equal opportunity to all, but recognise and value individuals' differences.¹⁰

WALKING THE TALK

The Adecco Group strives to create a workplace where every employee feels valued, regardless of age, gender, ethnicity, social background, or physical attributes. In an indication of its achievements, the Adecco Group in 2017 came in second worldwide in the annual Great Place to Work® survey and also came in second in the European ranking.

Such recognition is grounded on a culture of inclusion—one of the most frequently cited reasons why employees judged the Adecco Group to be their employer of choice. Large numbers commented that their opinions were respected and valued, regardless of seniority, origin, or gender. Staff members also drew attention to what they saw as a strong culture of trust and empowerment, stemming directly from top management.

How are such strong and positive opinions formed and nurtured? Training and career development opportunities open to everybody play a major part. So do a culture of meritocracy

Figure 1

The power of sport: Driving inclusion

The IOC and IPC Athlete Career programmes, in collaboration with the Adecco Group, have placed in employment, trained, and supported over 35,000 athletes and para-athletes since 2005.

By giving job opportunities to former athletes, employers gain unique profiles and skills for their business while increasing diversity in the workplace.

and the ability to take motivated, high-potential candidates from entry-level positions to leadership roles. In 2017, the National Association of Female Executives named Adecco North America as one of the top companies for executive women. The personal story of Joyce Russell, president of Adecco Staffing USA, is instructive. She started with the company 26 years ago as a branch manager. Today she manages a workforce that is 70% female, including all four of the senior vice presidents.

The same 'branch-to-top-management' path has been trodden by many others. Andrea Malacrida, Country Manager of Italy, is one example. So is Enrique Sanchez, regional head of Iberia and Latin America, who in 2017 received 'The Best Workplace Executive special award'.¹¹ Adecco Group Spain has ranked in the top three Great Places to Work for the past three years and the Adecco Group Italy in the top 10. Proving that engagement and diversity sustain performance, the company's revenues in Spain and Italy have consistently grown in double digits during 2017.

Developing transparent and meritocratic corporate structures requires innovative thinking. One example is C-Connect, a scheme launched in 2017 across the Adecco Group. The project was designed to reinforce links and engagement between group executive committee members and less senior staff. Groups of six to eight employees can engage with an executive committee member in very open and frank dialogue to identify opportunities, address day-to-day challenges, and strengthen personal connections.

Look at the Young

We at the Adecco Group also strive to give special emphasis to integrating young people—a concern reinforced by the acute levels of youth unemployment after the financial crisis. Among our own youth-orientated initiatives is Adecco Way to Work™,

which creates a bridge between the world of education and the world of work. Since 2015 the programme has offered almost 20,000 internships and apprenticeships around the world.

The related 'CEO for One Month' programme provides young people the opportunity to apply to shadow the Adecco Group chief executive in their home country for a month. One successful candidate is then selected to become the Group's 'CEO for One Month', gaining an irreplaceable opportunity to work alongside me at our Group headquarters.

Through mentorship and reverse mentorship in action, we all come to benefit deeply from the exchange of perspectives with these dynamic, brilliant minds. In fact, during their internships, the young 'CEOs' are challenged to design innovation projects that will revolutionise the world of work. It is a great way for us to innovate and gain exposure to different ways of thinking. A number of these young people go on to join the Adecco Group and even put their ideas into practice. Ernesto Lamaina, who leads the ADIA start-up within the Adecco Group,¹² came on board after his 'CEO for One Month' internship in Italy. Harnessing young talent like this provides the ability to think differently and approach problems in a fresh way.

As a leading member of the Global Apprenticeship Network, the Adecco Group is also spearheading work by an international alliance of leading companies to champion the apprenticeship model worldwide as an alternative pathway to work.

Talent without Labels

The path to inclusion starts with a single-minded focus on skills: on what each candidate or employee can do, rather than what he or she cannot undertake. The Adecco Group embraces such convictions through global programmes, national foundations, and local initiatives, helping people to gain better access to the

jobs and prospects they deserve. Such an approach not only helps candidates, it also enhances the companies' clients' talent pipelines, innovation ability, and competitiveness.

The Adecco Group has adopted the broad slogan of 'Talent without Labels' to define its approach. In Spain, Talent without Labels is applied both internally and with customers to eradicate prejudices and stereotypes. Its components include a new Signing Manifesto and novel recruitment and selection processes, such as the 'blind CV' (which prioritises information connected to skills, competences, and achievements, while changing the personal data in contact data and placing them at the end of the CV), as an innovative way of presenting a candidate's résumé. In 2016 in Spain this led to hiring more than 21,000 people aged under 25, more than 12,000 over 50, and more than 6,000 at risk of exclusion.

... faster integration could reduce refugees' fiscal impact, lead to long-term GDP growth, and correct labour market imbalances.

The same approach applies to the integration of people with disabilities in the labour market. More than 1 billion people in the world suffer from some kind of disability. That represents 15–20% of the global population—the largest single minority group. Such individuals span all age ranges, ethnicities, gender, socioeconomic levels, and sexual orientations.

Every day brings evidence of prejudice, discrimination, and limited accessibility for such individuals' efforts to integrate into the labour force. In Badenoch & Clark's 2017 survey, almost half of those with a disability have said they have either left a job, or not applied for a role or promotion, as a result of workplace bias, in comparison with just 20% of those who do not have a disability.

The Adecco Group aspires to reflect the composition of the societies in which it operates. It places around 10,500 people with a disability every year. Most are in Europe, through its Foundations in Spain and Italy and through its normal business operations in France and Belgium. Between 2004 and 2015, the total amounted to more than 72,000 people with a disability being placed in jobs ranging from receptionist to graphic designer.

In more than half its markets, the Adecco Group runs programmes to integrate people with disabilities in the workforce, including training. Adecco North America, for example, works through its Veteran's scheme. In Japan, Adecco Soleil promotes 'barrier-free' employment. To that end, it has placed 47 teleworkers in 18 locations around the country, with daily contact ensured via texts and video chats. Indeed, with advances in hyper connectivity, technology, and flexible working, physical disabilities no longer have to be the barriers they once were.

The Power of Sport

Sport can be a source of immense, but often sadly untapped, potential. Competitive games can be catalysts for change—and therefore integration—thanks to the inspiration and excitement they engender in athletes and audience alike. Through

the International Olympic Committee (IOC) and International Paralympic Committee (IPC) Athlete Career Programmes (ACP) in cooperation with the Adecco Group, companies are offered access to a pool of world-class talent. Former elite Olympic and Paralympic athletes can transfer the unique skills and traits—such as discipline, determination, and endurance—they have acquired during their sports careers into the labour market. And companies gain access to world-class employees who have accumulated extraordinary traits and abilities, along with the determination to excel in whatever they do.

Seeing para-athletes in action drives home the message of 'Champions for Life'—people who have overcome extraordinary challenges through their passion, determination, and goal-setting skills: attributes invariably valued by employers. Para-athletes personify the concept of 'Talent without Labels': if they can reach such heights on the field, no one can dispute their ability in the workplace, let alone their role in encouraging and inspiring others.

Through the IOC and the IPC ACP, more than 35,000 athletes' lives have been touched and transformed (Figure 1).

The Potential of Refugees

Employing refugees can help to address labour force imbalances. In the European Union, however, it takes a refugee between 15 and 19 years to reach average employment levels. That is despite the fact that 70% of first-time asylum seekers are of working age, and most of them want to work. The greatest barriers are regulatory complexities, long waiting periods, lack of evidence of individual qualifications, and inadequate language skills.

The Adecco Group raises awareness of the potential and the pitfalls, shares best practices, and makes policy recommendations. In 2017, the Adecco Group joined the European Commission's Employers for Integration initiative and became the 150th member to join the UNHCR #WithRefugees Coalition.

The Adecco Group's recommendations have been encapsulated in a white paper launched on World Refugee Day 2017 entitled 'The Labour Market Integration of Refugees'.¹³ Prepared with researchers from the Reallabor Asyl, an initiative of Heidelberg University and the Centre for European Economic Research, the report highlights the contribution refugees can make. It reveals that faster integration could reduce refugees' fiscal impact, lead to long-term GDP growth, and correct labour market imbalances. The paper presents best practices from 18 European employers and offers recommendations for companies and policymakers.

The Adecco Group also matches employers with refugee and asylum networks and helps make their skills transparent. In Italy, the Adecco Foundation works with local nongovernmental organisations to offer language courses, vocational training, internships, and information on the educational system. In Germany, the Adecco Group implemented an easy-access electronic recruitment system and hotline for refugees searching for a job. In France, the project Horizon is a multi-stakeholder initiative promoting social and labour market inclusion of refugees. By 2018, 5,000 refugees in these three countries alone will be supported and placed in job opportunities (Figure 2).

Figure 2

Refugees can fill labour market gaps and bring cultural diversity to the workplace**CONCLUSION AND RECOMMENDATIONS**

Companies are making far greater efforts to embrace diversity, but much remains to be done. It is now more a matter of stepping up and doing integration the 'right way'. With talent and diversity becoming increasingly valuable for business performance, there is a competitive advantage for companies seeking to get ahead. Diversity and inclusion are, it is evident, incontestable ways of improving talent competitiveness.

That means implementing effective integration and inclusion policies that not only flatter the headline numbers, but also achieve palpable results for all concerned. To that end, we recommend mechanisms to guarantee anti-discrimination practices and comprehensive talent strategies, ensuring companies better reflect the demographic footprint of their respective country, city, or region. That requires meticulous planning ahead of hiring decisions to see how given candidates may not only meet specific job requirements, but contribute to diversity too. Organisations would also benefit from expanding the definition of diversity beyond demographic and social identities, as we have seen that one of the biggest sources of bias at companies is a lack of diversity of thought.

More broadly, we would argue that flexibility, engagement, learning, and openness make it easier for companies to embrace the full range of talent diversity, while also reshaping their organisations to better reflect the societies in which they operate.

Workforce solutions providers such as the Adecco Group have a major role here, given their prominence in recruitment and career development. We can help train leadership to understand and leverage the values of diverse teams to enhance competitiveness. We can help candidates overcome barriers to enter the workforce and reach career goals. And we can assist employers in promoting diversity and managing inclusion to the benefit of all.

ENDNOTES

- 1 Badenoch & Clark (2017).
- 2 Diaz-Uda et al. (2013).
- 3 *Cognitive diversity* has been defined as differences in perspective or information processing styles: how individuals think about and engage with new, uncertain, and complex situations. While cognitive diversity is not predicted by factors such as gender, ethnicity, or age, it is reasonable to think that a diverse environment is more likely to foster cognitive diversity.
- 4 See Reynolds & Lewis (2017); Stiles (2017).
- 5 See Ali (2017).
- 6 Stiles (2017).
- 7 Adecco Group UK & Ireland (2015).
- 8 Hunt et al. (2015); Mercer (2016).
- 9 Hunt et al. (2015).
- 10 Thomas & Ely (1996).
- 11 In Spanish, this is 'Premio especial al Mejor Directivo Best Workplace 2017'. See <http://www.equipostrytalento.com/noticias/2017/03/31/great-place-to-work-entrega-los-premios-a-las-mejores-empresas-para-trabajar-en-espana-en-2017> for details.
- 12 Adia is a mobile-first, cloud-based end-to-end platform that enables employers to easily request temporary staff for hourly or daily assignments. It targets hospitality and events and candidate profiles for the SME segment. Adia's algorithm matches jobs to workers based on skills, level of experience, and proximity to the place of work as well as the job seeker's real-time availability. See <https://adia.com/ch-en/> for further details.
- 13 The Adecco Group (2017).

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CHAPTER 3

Discovering New Benefits of Diversity in the Artificial Intelligence Age

Vinod Kumar

Tata Communications

The Forbes contributor Glenn Llopis made an apposite observation when he said that diversity and inclusion (D&I) is *'becoming less about the business defining the individual and much more about the individual defining the business.'*¹ Understanding this shift—and how enterprises can make the most of it—underlines how D&I is a critical current driver of talent competitiveness that is both a challenge and an opportunity for large multi-national groups.

Tata Communications provides connectivity and collaboration solutions to help drive its clients' diverse business activities throughout every corner of the world. From data centres and cloud services to low-latency fibre rings linking the world's financial capitals, the very nature of its advanced solutions depends on integrating and leveraging diversity at physical, technological, as well as human levels. For this type of enterprise, a culture that is diverse, inclusive, collaborative, and heavily interconnected is an organisational must-have.

An enterprise's business objective should be infused into every aspect of how it operates internally. Tata Communications is no exception. It follows that creating conscious, aware leaders

who value and recognise the positive impacts of diversity is a fundamental principle across all its business units. This is the starting point that drives a strong outreach—both internally and externally—to widen the funnel, thus bringing in a healthily diverse mix of the very best talent at all levels. At the same time, the company is equally dedicated to creating a supportive and encouraging environment through inclusive policies designed to retain that talent.

This approach to diversity means that individual capability development is prioritised—to encourage employees to recognise their potential and successfully create careers for themselves within the organisation. At its heart is concentrated exposure to learning and development opportunities that capitalise on the value of collective experience, knowledge, and insights. A company thrives when its employees can collaborate and innovate in teams working face to face, as well as remotely across national and international geographies.

Promoting a positive diversity agenda is supported by widespread evidence. For example, PwC's 2015 report, entitled

The female millennial: A new era of talent,² underscores how important the diversity picture overall is for both genders. The report highlights the fact that 86% of female and 74% of male millennials said an employer's policy on diversity, equality, and workforce inclusion was important to them when deciding whether or not to work for an organisation. Critically, a 2015 McKinsey survey of 366 public companies shows that those in the top quartile for gender diversity specifically were 15% more likely to deliver returns above the industry mean.³

If the high-tech, high-speed, always-on world Tata Communications makes possible for its clients—and, in turn, for their end-user customers—is a natural fit for a culture that embraces diversity in all its forms, how has the journey to nourish that culture been so far? What has been learned in the move from an era where diversity moves from box-ticking compliance towards an elemental component that drives agility and performance capability?

And, of special significance for a business that is always looking towards what lies beyond the horizon—with tech running through its very DNA—where might the diversity agenda take us next as we move rapidly further into the age of artificial intelligence (AI)?

THE JOURNEY TO DATE

Any opportunity to explore the impact and potential of diversity in an information technology (IT)/tech context has, of course, to focus on one of the biggest challenges of all facing the sector: that of gender imbalance. Despite a progressive Tata group heritage that saw female employees eligible for maternity benefits decades before these benefits became law in India, this is a challenge from which no enterprise—including Tata—is immune.

Recognising that big improvements to address the gender gap would be critical for the next step in its evolution, Tata Communications launched its Winning Mix initiative in October 2014. Its aim was to make the most of the proven added value that the presence of more women brings to group performance.

Many studies confirm the importance of human diversity for collaboration specifically. Among them is Woolley et al.'s 2010 study⁴—a celebrated example that provides particularly compelling evidence of the benefits of gender diversity. This study shows a direct relationship between the proportion of females to males in a group and that group's performance in problem solving and innovation. Research in Spain also supporting the idea that companies with gender diversity are more innovative further justifies the business case.⁵

However, although 60% of global college graduates are female, recent figures for women in IT-related jobs continue to cause concern about on-going gender imbalance. For example, the National Center for Women in Information Technology reported that, although some 25% of the US professional computing workforce was female in 2015, women in high tech industries were twice as likely to quit their jobs as those working in other sectors.⁶

SHIFTING THE BALANCE WITH WINNING MIX

Tata Communications realised it was behind the curve in 2014, with a workforce of only 17% women across all core business units including sales. So the company embarked on a new programme—Winning Mix—to improve its position, with an aspirational target of 30%/70% female/male employees. This is the generally accepted tipping point at which gender rebalancing can take on its own positive momentum.

Central to the programme's launch was in-depth work facilitated by global bias experts Cook Ross. This started with a Conscious and Inclusive Workshop for Tata Communication's 200-strong leadership team, which revealed unconscious gender biases that existed in the company even at the highest levels. These leaders then cascaded the Winning Mix message down through the organisation, reaching wider employee audiences through online games designed to highlight those biases. An example of such a bias is the idea that a role involving frequent overnight travel may not suit a woman for family reasons.

The Winning Mix takes a holistic approach to gender diversity and inclusion and was underpinned from the start by a robust oversight structure—the company's Diversity Council—and comprehensive, company-wide communication campaigns. These included invitations for all employees to participate in discussions on diversity and inclusion, and to share best practices through the interactive Winning Mix forum on Tata Communications' intranet, along with specific employee campaigns. The initiative is now hard-wired into talent acquisition guidelines and human resources policies.

Although the programme has a long way to go and faced some early challenges of understanding across the business, Tata Communications' gender rebalancing is moving in the right direction towards the 30:70 target. In 2017, nearly 33% of new hires were women and the cross-company figure rose to 21%—with ambitious plans to strengthen Winning Mix further. These plans include:

- extending the company's pioneering family care leave policy to the primary carer rather than solely to women (a gender-agnostic approach that positively signals the value the company attaches to family care for both women and men);
- gaining a deeper understanding of employee perceptions through externally conducted exit interviews;
- promoting a cross-organisation inclusivity guide; and
- raising further awareness of external recognition, such as the company's inclusion in the 'Best Companies in India 2016' study conducted by the AVTAR talent strategy consultancy and the multi-platform publisher Working Mother.

Although Tata Communications has made great strides forward, its D&I strategy is still a work in progress. The time it would take to move the needle on gender diversity was certainly underestimated. Equally, the company acknowledges that it has some way to go in fully embracing non-gender diversity. To help Tata Communications stay true to its D&I aspirations, it has embarked on a range of international and cross-functional collaboration initiatives. These are designed not only to speed up the transfer of knowledge and experience between geographies and teams, but also to help negate bias and challenge assumptions in decision making.

DIGGING DEEPER INTO THE TALENT POOL

If Tata Communications' role as a global player in connectivity, cloud, and related IT services makes diversity an imperative, then using its own technology to extend and tune its gene pool by drawing from talent worldwide is a logical next step.

One new tool, currently at the prototype stage, uses cognitive AI and analytics to match a job description to relevant employee profiles and the thousands of CVs received each year, as well as those on LinkedIn and other large global databases. This tool will be programmed to generate an appropriately diverse shortlist of candidates—even though the company does not operate any kind of quota system at the selection stage.

Another programme in development employs smart CV masking to ensure that no cultural or gender identification is visible to the recruiter. Meanwhile, as automation begins to make some roles redundant, the company is also looking at ways that employees can re-shape their careers by matching their profiles with those of other similarly qualified and experienced people across global databases. This way they can learn of other possible career 'next steps'.

Other projects that bring added long-reach value to Tata Communications' diversity mix include Project Marketplace, where anyone across the Tata group can post a project and create virtual global teams to solve a problem. With up to 80 new teams created in its first year, the company is now looking to open up Project Marketplace still further to include external freelance talent.

TOWARDS A NEW DIVERSITY

Looking ahead, however, it is the potential offered by AI for leveraging diversity that looks a particularly promising area, as recently outlined by Tata Communications' CEO Summit speaker Professor Ken Goldberg of the University of California, Berkeley, in the *Wall Street Journal* and in his follow-on paper.⁷ Tata Communications shares his positive view that 'Multiplicity'—the combination of machine learning, crowd sourcing, and cloud computing—can bring diverse groups of machines and humans together synergistically to solve problems and innovate, in contrast to the AI-dominated future world that some fear.⁸

It is clear that diversity is a powerful tool that needs to be carefully enhanced and managed by businesses and organisations as they strive for greater competitiveness, innovation and productivity. Ultimately, this will optimise the talent mix in ways we may never yet have imagined.

ENDNOTES

- 1 Llopis (2016).
- 2 PwC (2015).
- 3 Hunt et al. (2015).
- 4 Woolley et al. (2010).
- 5 Díaz-García et al. (2013).
- 6 Ashcraft et al. (2016).
- 7 Goldberg (2017a, b).
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CHAPTER 4

Diversity's Positive Impact on Innovation and Outcomes

Sylvia Ann Hewlett, Ripa Rashid, and Laura Sherbin

Center for Talent Innovation and Hewlett Consulting Partners LLC

Corporate leaders have long recognised that diverse talent supports innovation, but many organisations fail to fully realise this innovative potential. Diverse talent often have difficulty winning endorsement for their ideas. Many may also be hesitant to speak up and offer their suggestions.

Studies by the Center for Talent Innovation (CTI), a non-profit research organisation focused on global talent and inclusiveness, provide data on these problems and suggest the following two-pronged approach for companies seeking to reap the benefits of diversity through inclusion:

- Build inclusive team cultures, in which team leaders exhibit three of six specific behaviours.
- Foster diversity (both *inherent* and *acquired*, as defined below) in top company leaders.

Inclusive leaders unlock the innovative potential of their teams. With multi-dimensional diversity in senior management,

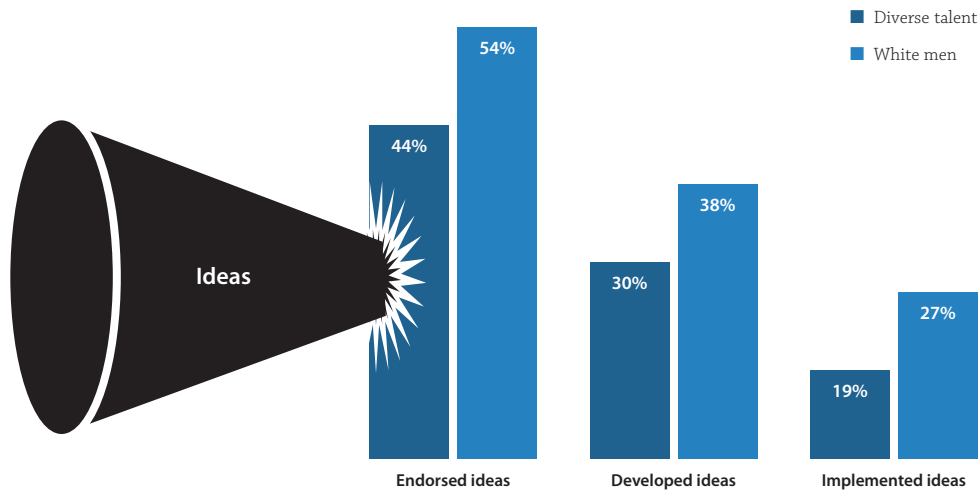
employees are more likely to say they have team leaders who demonstrate inclusive behaviours—and that their companies are growing market share and capturing new markets.

Companies interested in fully leveraging diverse employees should therefore consider a 'package deal': when leadership is both diverse and inclusive, companies can have robust support in place for innovation.

This chapter begins with famous examples of how the lack of diverse viewpoints in leadership can hinder organisations. It then presents CTI research that quantifies some of the benefits that inherent employee diversity brings to a company, and how this value often goes unrealised.

The chapter proceeds with an analysis of proprietary data on how six specific inclusive leadership behaviours at the team level can create an environment that is more conducive to innovation. Additional data on how having inclusive leaders correlates with greater employee engagement and retention are then presented. The chapter concludes by explaining another kind of diversity: acquired. When acquired diversity is present in

Figure 1

Ideas from diverse talent: Stuck in the pipeline

Note: Fifty-six percent of respondents said leaders at their companies do not value ideas for which they personally do not see a need.

senior management, it supports inclusive leadership behaviours. Data on the market benefits that two-dimensional (inherent and acquired) diversity in senior leadership can offer companies are then presented.

Unless otherwise noted in the text or endnotes, the data in this chapter come from a nationally representative survey that CTI conducted in the United States of 1,800 college-educated respondents, ages 21 to 62, working full time in white-collar occupations at companies with more than 50 employees. Forty case studies, Insights In-Depth® sessions (a proprietary web-based tool used to facilitate online focus groups) with over 100 participants from CTI's Task Force organisations, and more than 60 one-on-one interviews helped CTI analyse and interpret the survey findings.

THE DANGER OF NON-DIVERSE LEADERSHIP

A lack of diverse viewpoints can have harmful consequences, as a famous example illustrates: the International Monetary Fund (IMF) failed to predict the enormity of 2008's global financial crisis, and was hampered in its ability to respond. Why did the IMF, which had in its ranks some of the world's most brilliant and experienced economists, stumble in its task of protecting global financial stability?

In a report from 2011, the IMF openly blamed the failure on 'a high degree of groupthink'. IMF leadership, the report explained, suffered from its own homogeneity. The organisation's leaders, mostly men from developed economies with similar educational backgrounds and résumés, ruled out the possibility that a global crisis might start in advanced financial systems. Members from less developed economies who dissented saw their opinions dismissed, the report said.¹

Evidence of the dangers of non-diversity also abounds in the corporate space. To take two examples from the Middle East: Eurostar's offering of a computer tablet for women (called

the 'ePadFemme') and Mattel's attempt to market a Muslim Barbie named 'Leila' both failed to win consumers. Middle Eastern women did not appreciate a pink tablet that steered them to recipes and pregnancy tips,² while families preferred a doll designed in Syria that represented Muslim values.³ Viewpoints put forth by women in Eurostar and Muslims in Mattel might have avoided these costly mistakes.

These examples offer a key insight: a lack of diversity in leadership can hinder an organisation's ability to respond well to a novel situation where innovative thinking is required. Even when diverse viewpoints are present in an organisation (as was the case in the IMF, which included members from less-developed economies), those viewpoints have little impact if a homogeneous leadership team fails to consider them.

FAILING TO FULLY REALISE THE DIVERSITY DIVIDEND

Evidence exists that companies with diverse workforces outperform financially,⁴ and CTI research has identified at least one explanation for this 'diversity dividend'. Inherently diverse employees—with *inherent diversity* referring to an individual's gender, race/ethnicity, age, religious background, socioeconomic background, sexual orientation, disability status, and nationality—can be founts of insights that can help new products match the market. For example, a recent immigrant from Latin America to the United States who speaks Spanish may understand her fellow immigrants' needs and aspirations better than someone from a different background would. Learning Spanish in school generally does not provide the same cultural nuance or empathy as lived experience, or membership in a given community. Someone with that recent immigration experience, thus, could better design a product, service, or marketing campaign that responds to those needs.

Inherent diversity is powerful. CTI research has found that when teams have one or more members who represent the gender, ethnicity, culture, generation, or sexual orientation of the team's target end user, the entire team is at least 144% more likely to say that they understand that end user. A team that understands its target user may be more likely to perceive issues unique to that user, and to home in on solutions that address those issues. As a result, that team may be more likely to come up with ideas for unmet market needs.

Ideas to serve new markets, however, are merely a first step towards the creation of value. To fully innovate, organisations must develop these ideas and deploy them in the marketplace. That process requires decision makers' buy-in and endorsement. In many larger companies, this endorsement must come from powerful leaders scattered throughout divisions and ranks.

CTI research indicates that, when it comes to the ability to recognise the importance of a new idea or concept, leaders are hampered by their own blind spots. The CTI survey revealed that 56% of respondents say that leaders at their companies do not value ideas for which they personally do not see a need. A mostly male leadership, for example, may not show any interest in innovative ideas for better breast pumps, even if many women could speak to a possible market demand.⁵

Leadership's blind spot for ideas that do not fill their personal needs is a serious problem in the United States, where women make up 47.8% of the workforce but only 29.7% of senior management.⁶ Racial and ethnic minorities make up 37.7% of the US workforce, but only 14.0% of senior management.⁷ At the very top, the under-representation is even greater. At Fortune 500 companies, women comprise just 4.8% of CEOs; racial and ethnic minorities comprise 5% of CEOs.⁸

CTI's data indicate that the wisdom of the crowd can be easily lost: women and people of colour are less likely to have their ideas realised (see Figure 1). In the survey, only 44% of women and people of colour reported having an idea endorsed, compared with 54% of white men. Thirty percent said an idea of theirs had been developed, compared with 38% of white men. And only 19% said an idea had been implemented, compared with 27% of white men.

MAXIMISING INNOVATIVE POTENTIAL

To discover how companies can assure employees that their innovative ideas are valued, CTI started at the team level. After all, a manager can be the first barrier to an innovative idea being shared or adopted. CTI conducted focus groups and created a list of common behaviours that team leaders employ to generate innovation. Survey respondents were then asked which of these behaviours their team leaders displayed, as well as whether they agreed with the following three statements that indicate that a team's innovative potential is maximised:

- My ideas are heard and recognised.
- I feel welcome and included within my team.
- I feel free to express my views and opinions.

CTI looked to see which of the leadership behaviours gave the highest boost to a team's innovative potential, and concluded that these would be considered 'inclusive leadership behaviours'. The top six behaviours were:

- ensuring that everyone gets heard,
- giving actionable feedback,
- making it safe to risk proposing novel ideas,
- taking advice and implementing feedback,
- empowering team members to make decisions, and
- sharing credit for team success.

Inclusive leaders were defined as those who exhibit at least three of these six inclusive behaviours. These are leaders who, the interviewees said, enable them to speak up and contribute innovative ideas to their companies.

'I had a great manager once', a healthcare marketing executive told us. *'She said if you didn't have a chance to speak up during a meeting but you had something to contribute, we should speak to her later or send an email. And she made clear that she meant it. She occasionally would announce to the team that she'd received an email with a great idea from so-and-so. It made everyone eager to contribute, that they knew they'd be listened to.'*

There is a second reason that fostering inclusive leadership should be a high priority for companies: with inclusive leaders, team members are far less likely to perceive bias.

DIVERSITY AND EMPLOYEE PERCEPTIONS OF BIAS

CTI's most recent research has also been able to measure an additional way in which inclusive leaders help inherently diverse employees thrive: inclusive leaders reduce the experience of bias in the workplace, an area of great interest for many companies.

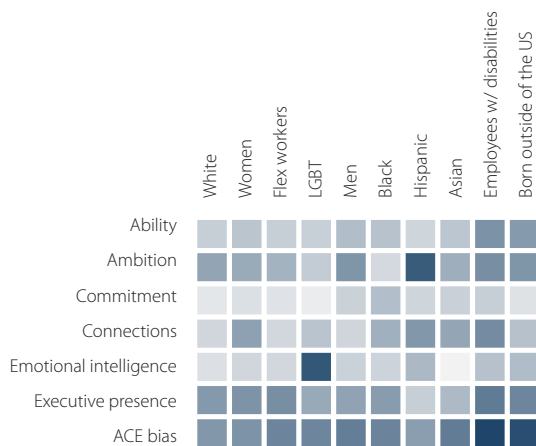
A nationally representative survey that CTI undertook in the United States of 3,570 white-collar, college-educated employees found that, in large companies, people of colour, those born abroad, and people with disabilities are especially likely to perceive bias around assessments of their potential. For example, 11.2% of Asians, 13.9% of employees with disabilities, and 19.7% of employees born in Latin America perceive this kind of bias, compared with 9.2% of the overall sample.⁹

To measure whether employees perceive bias, CTI first identified six key areas on which their potential is assessed (termed the *ACE model*): ability, ambition, commitment, connections, emotional intelligence, and executive presence. Employees were then asked how they assess their own potential on each of these six ACE elements, how they believe their superiors assess them on these elements, and what kind of feedback they have received on these elements.

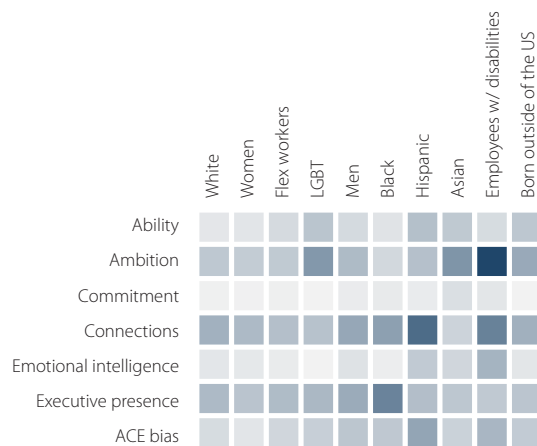
When respondents reported that their superiors' assessment was lower than their self-assessment, CTI researchers deduced that these respondents perceive negative bias around assessments of their potential in this area. When they perceived negative bias in two or more areas, this result was defined as *ACE bias*, since (see below) it has significant correlations.

Figure 2
Bias perceived by employees in large companies

2a: Employees without inclusive leaders



2b: Employees with inclusive leaders



Note: ACE bias means the rate of bias perception in two or more ACE areas. The darkest blue indicates a rate of more than 15%; the lightest white indicates a rate of 0%, and intermediate shades indicate intermediate rates of ACE bias perception. With inclusive team leaders, employees at large companies are 87% less likely to perceive ACE bias and 39% more likely to be engaged.

CTI organised the results into a heatmap (Figure 2) that shows the rate at which different talent cohorts perceive bias in each of the six key areas. The symbols in the left-most column represent (from top to bottom) ability, ambition, commitment, connections, emotional intelligence, executive presence, and overall ACE bias (rate of bias perceived in two or more areas). The boxes represent the level of bias reported, with white indicating 0% in that cohort perceiving bias, dark blue indicating over 15% in that cohort perceiving bias, and intermediate shades indicating intermediate rates of bias perception. The heatmap in Figure 2a shows bias perception levels for employees at large companies who do not have inclusive team leaders. The heatmap in Figure 2b shows bias perception levels for employees at large companies who have inclusive team leaders.

As the heatmaps in Figure 2 show, with inclusive team leaders, employees are less likely to perceive bias. When employees at large companies have inclusive team leaders, they are on average 87% less likely to perceive ACE bias around assessments of their potential than employees on teams without inclusive leaders.¹⁰

For example, at large companies, 20.5% of foreign-born employees perceive bias on two or more ACE elements when their team leaders are not inclusive. But when their team leaders are inclusive, only 3.0% of foreign-born employees perceive ACE bias. Among employees with disabilities at large companies, 21.2% perceive this ACE bias around assessments of potential when their team leaders are not inclusive. When they have inclusive team leaders, only 4.6% of them do.¹¹

This reduction is important, since a perception of ACE bias correlates both with poorer career outcomes for individuals and with behaviours that may prove damaging to their employers.

Compared with colleagues at large companies who do not perceive ACE bias, over the last year those who do perceive it are

32% less likely to have received a raise, 45% less likely to have had their job responsibilities increased, and 25% less likely to have received a promotion.¹²

Those who perceive bias are also more likely to be disengaged, to leave their companies, and to engage in sabotage.

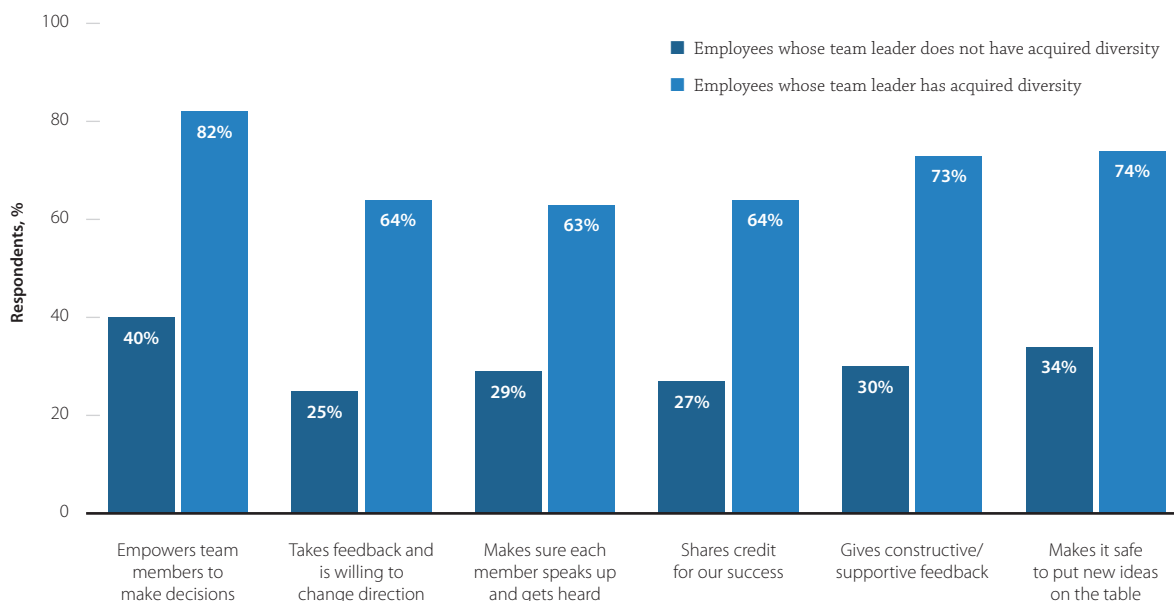
Compared with employees at large companies who do not perceive ACE bias, employees who do are nearly three times as likely (20% versus 7%) to report that they are not engaged at work and 2.6 times as likely (34% versus 13%) to say that they have withheld ideas or solutions from their companies over the previous six months. They are also more than three times as likely (31% versus 10%) to plan to leave their employers within the year, and 60% more likely (48% versus 30%) to have looked for a job while on the job in the past six months. Finally, they engage more frequently in sabotage: they are five times as likely (5% versus 1%) to have discussed their companies negatively on social media and 4.5 times as likely (9% versus 2%) to have intentionally failed to follow through on an important assignment in the past six months.¹³

Inclusive behaviours may be taught, and leadership training likely has a role to play in many organisations, alongside building inclusivity into performance reviews and/or bonus structures for team leaders. But there is another way that leaders can support inclusive leadership: through attention to two kinds of diversity in top leadership.

ACQUIRED DIVERSITY

As companies look to fully leverage inherent diversity at their companies, there is yet another piece to the puzzle beyond inclusive leadership. After all, the ideas an inclusive team leader elicits can wither on the vine if they are not endorsed by top leaders. CTI's research has found that varied backgrounds and experiences can give leaders an appreciation for difference,

Figure 3

Team leadership behaviours: Leaders with and without acquired diversity

Note: All leadership behaviours are as reported by team members.

whether that difference is rooted in gender, age, culture, socio-economic background, nationality, disability status, or sexual orientation. The kind of experience that leads to this appreciation for difference is called *acquired diversity*.

Consider a European who has worked many years in Nigeria. While there, this European has likely developed cultural fluency: a keen sense of the economy and the people, including their needs and aspirations. To take another example, someone who has grown up with a gay sibling may know well the LGBT community's challenges and sensibilities.

Acquired diversity includes not just cultural fluency, but also generational savvy, gender smarts, social media skills, cross-functional knowledge, a global mind set, military experience, and language skills. The CTI survey showed that when team leaders, according to their direct reports, have three or more of these acquired diversity characteristics, they are more than twice as likely (see Figure 3) as team leaders without any acquired diversity to demonstrate each of the six inclusive leadership behaviours.

When acquired diversity joins with inherent diversity at the senior management level, CTI data also indicate a significant rise in inclusive leadership at the team level—and in innovation and market growth.

TWO-DIMENSIONAL DIVERSITY, INNOVATION, AND MARKET GROWTH

To examine how both kinds of diversity can work together in senior leadership, CTI's research looked at what is termed *two-dimensional (2D) diversity*: when company leadership displays at least three inherent and three acquired diversity characteristics.

Only 22% of CTI survey respondents worked for companies with 2D diversity in senior leadership, but many of these firms have a big leg up on the competition. For a start, 2D diversity

in senior leadership correlates strongly with inclusive leadership behaviours at the team level (see Figure 4).

Common markers of innovation also correlate with 2D diversity. Employees at firms with 2D diversity in senior leadership are 95% more likely to say 'We're not afraid to fail', 90% more likely to say 'We take risks', 72% more likely to say 'Nobody's afraid to challenge the status quo', 68% more likely to say 'We embrace the input of members whose background or expertise differs from our own', 63% more likely to say 'We're passionate to succeed', and 60% more likely to say 'We prioritise team success over personal gain'.

Leadership with 2D diversity is also far more likely to reward innovative behaviour: organisations with 2D diversity in leadership are more than four times as likely to reward proposing radical changes to existing models and incentivising employee creativity, for example (see Figure 5).

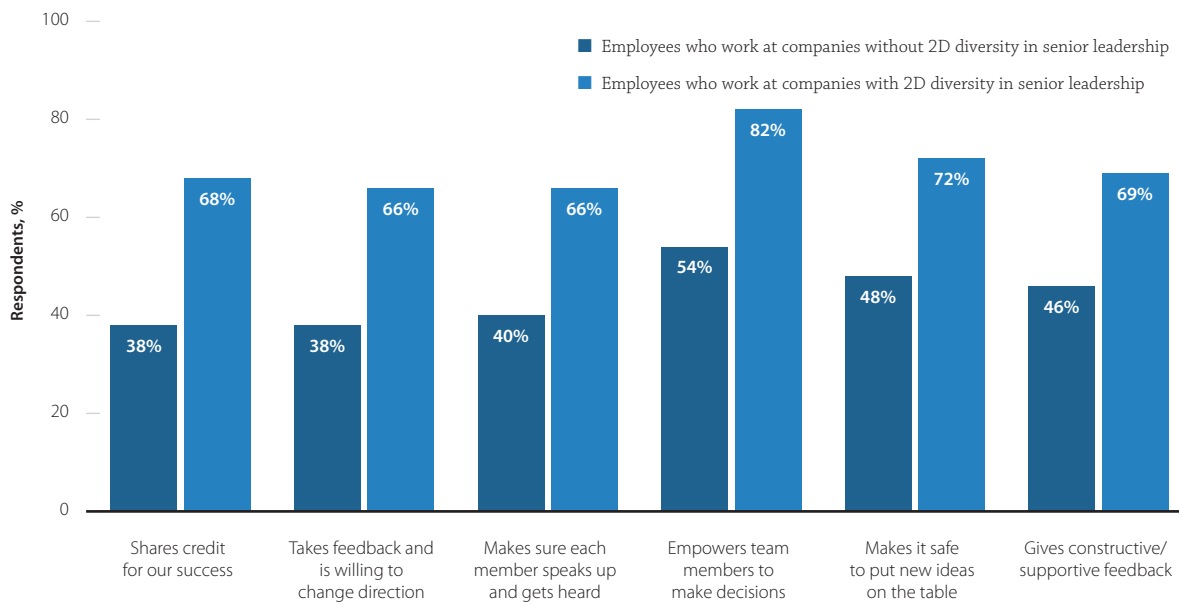
Two-dimensional diversity also correlates highly with reduced chokeholds on innovation. Employees at companies with 2D diversity in senior leadership are:

- 38% less likely to say 'groupthink is a problem' in their teams,
- 40% less likely to say 'leadership at my firm does not perceive value in ideas they don't personally see a need for', and
- 46% less likely to say 'ideas at my company rarely make it to market'.

Two-dimensional diversity has a notably positive impact on inherently diverse talent's ability to win endorsement for their

Figure 4

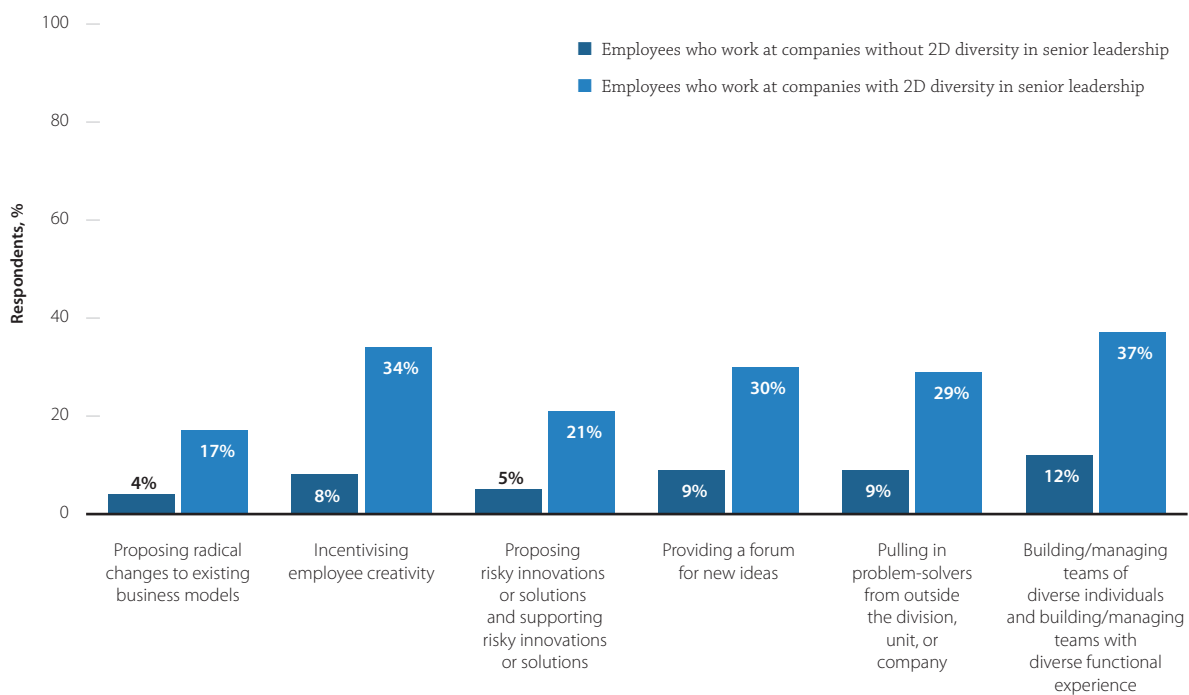
Team leadership behaviours: Companies with and without 2D diversity



Note: All leadership behaviours are as reported by team members. Data were obtained in answer to the question 'Which of the following behaviours does your team leader exhibit?'

Figure 5

Rewarded behaviours: Companies with and without 2D diversity



Note: Data were obtained in answer to the question 'Which behaviours at your company get rewarded either formally or informally?'

ideas. In companies that lack 2D diversity in senior leadership, straight white men are 28% more likely to win endorsement for their ideas than are women and they are 34% more likely to win endorsement than people of colour.

With 2D diversity in senior leadership, this difference in endorsement rates vanishes.

The results appear in the marketplace. Employees who work for publically traded companies with 2D diversity are, compared with those in publically traded companies without 2D diversity:

- 45% more likely to report that their company improved market share over the past 12 months, and
- 70% more likely to report that their company captured a new market over the past 12 months.

Johnson & Johnson offers an example. When she was director of global marketing services at the healthcare giant, Colombia-born Liliana Gil Valletta cofounded a Hispanic employee resource group (ERG) that formed a clear business agenda: to map the Latino market opportunity for each disease area. Senior management provided strong support, and Valletta was able to hold meetings with the company's chairman and present her strategy and recommendations to the executive committee. The firm discovered an unmet business opportunity as a result.¹⁴

CONCLUSION

Innovation is an imperative for corporations. It is crucial for companies to encourage employees to come up with new ideas and to encourage leaders to implement them.

CTI's data indicate two practices to facilitate a culture of innovation. These practices are open to nearly any company, from a high-tech start-up to a long-established conglomerate. The first is to establish 2D (inherent and acquired) diversity in leadership. The second is to foster a set of six inclusive leadership behaviours.

Each method is effective on its own, but implementing both is recommended because they have the potential to build on each other. Two-dimensional diversity in leadership correlates with inclusive leadership behaviours. Inclusive leadership behaviours, in turn, correlate with reduced perceptions of bias around assessments of potential. By reducing employees' likelihood of perceiving bias, inclusive leadership behaviours may thus help diverse talent rise to leadership.

To achieve 2D diversity in leadership, companies may need to re-examine hiring and assessment methodologies and refocus sponsorship programs. To make inclusive leadership behaviours more prevalent, diverse leadership itself is a driver. Other drivers include top leaders setting the tone through town halls and messaging, training programmes for managers, and linking promotion and pay to inclusive behaviours.¹⁵

The desired future state should be leadership that is both diverse and inclusive. With such leadership, CTI data indicate that companies are likely to improve their chances of fully utilising all their employees' potential to contribute innovation and grow their companies' market share.

ENDNOTES

- 1 IEO of the IMF (2011).
- 2 Adekola (2013).
- 3 Zoepf (2005).
- 4 Hunt et al. (2015).
- 5 Winter (2017).
- 6 U.S. Equal Employment Opportunity Commission (2015).
- 7 U.S. Equal Employment Opportunity Commission (2015).
- 8 Zarya (2016); Diversity Inc. (2015).
- 9 Hewlett et al. (2017, p. 13) and unpublished data from report research.
- 10 Hewlett et al. (2017, p. 22).
- 11 Hewlett et al. (2017, p. 13).
- 12 Hewlett et al. (2017, p. 14).
- 13 Hewlett et al. (2017, pp. 16–18) and unpublished data from report research.
- 14 Allwood & Sherbin (2016, p. 30).
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CHAPTER 5

Education and Diversity: Challenges and Opportunities

Tracey Burns and Dirk Van Damme

Organisation for Economic Co-operation and Development (OECD)

Over the past decades, societies in member countries of the Organisation for Economic Co-operation and Development (OECD) have become increasingly diverse. Facilitated by fast-changing technology and decreasing transport costs, individuals are moving more freely than ever before across countries and continents, bringing greater ethnic, linguistic, and cultural diversity to OECD countries.¹ This multiplicity of backgrounds joins the differences in class, gender, intellectual and physical ability, and sexual orientation already present in our societies and schools.

From an educational perspective, increasing diversity raises the question: what is the best way to ensure that all students can succeed at school and beyond? Traditional educational systems have focused on uniformity and standardisation: uniform aims, identical content, standardised learning progression, undifferentiated amount of time assigned for learning, and common criteria for success—regardless of the diversity of talents in the student population. The emphasis has been on *homogeneity* of learners (and outcomes). This paradigm of homogeneity

required that learners were seen as similar in many ways and that differences were deliberately not acknowledged.²

This approach might have been appropriate in a time of massification and expansion of education, but it is simply not tenable in a modern world. It is no longer uncommon for teachers to have a class with a diverse range of backgrounds, cultures, learning preferences, and abilities. There is ample evidence from the OECD's Programme for International Student Assessment (PISA) test that diversity matters, but perhaps not always in the way we would hope it would:³ students with immigrant backgrounds perform less well on average on the PISA assessment than their native peers; those from wealthier families outperform the less wealthy; and there are long-standing gender differences in performance that, on average, favour boys (in mathematics) and girls (in reading). And while these performance gaps are important, the large variation in their magnitude across countries indicates that these differences can be largely mitigated, if not overcome. Providing all students with the skills and

THE SEVEN LEARNING PRINCIPLES

In order to be most effective, schools and other learning environments should attend to all of the following learning principles:

1. Make learning central, encourage engagement, and be where learners come to understand themselves as learners.
2. Ensure that learning is social and often collaborative.
3. Be highly attuned to learners' motivations and the importance of emotions.
4. Be acutely sensitive to individual differences, including in prior knowledge.
5. Be demanding of each learner but without overloading them excessively.
6. Use assessments consistent with these aims, with a strong emphasis on formative feedback.
7. Promote horizontal connectedness across learning activities and subjects, both in and out of school.

Implementing these research-based principles means embedding them in daily practice. More demanding still, *all* the principles should be worked towards rather than a selected few. Although these principles were originally intended to optimise learning in individual learning environments, they also serve to guide wider reforms and system change.

Source

Dumont et al. (2010).

competencies required to thrive in school and beyond means being able to meet their diverse sets of needs.

Diversity is not a problem to be solved. It is a reality of our world, a fundamental aspect of being human. Recent trends in migration and inequality have only highlighted an issue that has existed for centuries. Challenging the paradigm of homogeneity in our education is part of a larger process wherein negative stereotypes, assumptions, and values for our citizens are addressed and placed on the table for discussion. But changing such beliefs does not happen overnight.

This chapter, based on OECD research, will look at the issue through the lens of a series of challenges. It begins with a review of the pedagogical challenge and the importance of learning principles for diversity. It then explores the curriculum challenge (*what* to teach) as well as the professional challenge

(*how* to support teachers). It ends with a discussion of the policy challenge and how this might work on a systems level.

HOW STUDENTS LEARN: REDESIGNING LEARNING ENVIRONMENTS

The main challenge that educational systems around the world now face is to turn diversity in its various dimensions away from being seen as a challenge to be overcome into an asset that drives overall quality and performance. The PISA data demonstrate that this is perfectly possible: some high-performing countries such as Canada and the Netherlands serve diverse learners well, while other equally well-performing countries such as Japan seem to struggle to cope with the diversity challenge, especially in its social and ethnic dimensions.⁴

Research on pedagogies in innovative learning environments tells us that a first step in better serving all students is to move away from the ideal of homogeneity in learning and teaching. Sliwka (2010) sets out an argument for how change happens. She sees it as a continuum of three steps:

- 1. Homogeneity:** Learners grouped into one kind of educational institution are perceived to be similar and get the same kind of treatment. Difference is not acknowledged.
- 2. Heterogeneity:** Learners are perceived to be different and adjustments are made to address their different needs. Difference is seen as a challenge to be dealt with.
- 3. Diversity:** Learners are perceived to be different from each other. Their difference serves as a resource for individual and mutual learning and development. Here difference is seen as an asset and an opportunity.

Various systems across OECD countries are arguably in different stages of this continuum. Creating a system that can take advantage of the opportunities diversity provides is a distinct challenge for many educational systems across the OECD, where the fundamental paradigm is the assumption that the homogeneity of learners in a group best facilitates their individual learning. With such a complex combination, maintaining a balance among equity, delivering a fair and excellent education to all, and catering to individual learning needs has made a teacher's job extremely challenging.⁵

What, then, is the best way forward? How can our systems best harness the benefits that diverse teachers and students bring, not only to learning environments but also to the workplace? In order to address these questions, we must first delve more deeply into the nature of learning itself.

Learning Principles for Diversity

In order to better meet the needs of learners, education has been shifting from traditional hierarchical teacher-centred classrooms to a more in-depth focus on learning. Extensive work from the OECD has focused on what this means in theory and in practice, and how best to effect change on the micro (classroom), meso

(networks), and macro (system) levels.⁶ A starting point is the identification of the seven learning principles.

As set out in the box, applying the seven principles requires addressing all of them at the same time. A full analysis and examples of how this can be done in a wide range of different contexts is provided by OECD (2013). The following section highlights examples adapted from that work of Principles 4 (Individualisation) and 5 (Learning matrices).

Individualisation

Teachers need to be able to adapt learning activities to the different abilities, competencies, and motivations of their students as well as to their linguistic, cultural, and social backgrounds. This must be complemented with sensitive assessment that allows learner strengths and weaknesses to be identified. For example (adapted from OECD, 2013):

- At the Quality Learning Center and Enquiry Zone in *Mordialloc College (Victoria, Australia)*, students in Grades 7 to 9 spend three-quarters of their school time in ‘Learning Centres’: open and flexible spaces characterised by an individualised learning approach. One teacher described this environment as follows:

You can walk over and find one student who’s working on maths problems, another student will be working on the computer and doing something about Power Point [...] some other students will be building something with clay [...]. They are not all doing the same thing. And they’ll be sitting at the same table talking to each other about the same thing, doing different tasks.

- *Europaschule Linz, (Austria)* uses a combination of student-initiated and traditional forms of learning to embrace differences in ability and learner types. Open structures are used to foster self-determination and independence. Autonomous, self-determined learning and alternating social modes are seen as a basis for differentiation and individualisation: ‘[They] are indispensable requirements for the necessary differentiation and individual support of all children.’

Technology plays a key role in permitting the individualisation of information, communication, and materials. For instance:

- The teacher–pupil message exchange in the e-classroom enables individual communication of teachers with pupils in the *Internet Classroom, Kkofja Loka Primary School, (Slovenia)*. Others in the e-classroom cannot see those exchanges so that the learners can feel comfortable discussing matters that they might not want revealed to their fellow students. This kind of communication contributes to a better relationship between pupils and teachers and it encourages their personal responsibility. That is particularly desirable when the teacher gives instruction to a larger number of pupils whom (s)he meets only once or twice per week for regular teaching.

Learning Matrices

Homogeneous learning environments—which tune the pedagogical encounter to the ‘average’ learner—risk providing an overload of learning challenges to some students while not offering enough stimulation to others. In both cases the learning outcomes will be suboptimal. Managing cognitive load and learning challenges in such a way that all learners can take an equal benefit requires well-designed pedagogies and appropriate assessment systems. Recording individual progress in a formal way, with the active involvement of the learners themselves, permits the information to move from inside the teacher’s mind to become more visible and useful—to the learner, to the teachers in general, and to others (including parents). The following examples are based on the OECD’s *Innovative Learning Environments* report (2013).

- At *Mordialloc College, (Victoria, Australia)*, each student has a ‘learning matrix’—a two-dimensional grid made up of a series of vertical and horizontal axes used to structure the content of learning and capture the student’s learning progress. It is based on the ‘Victorian Essential Learning Standards’, which is a set of common statewide standards that schools use to plan student learning programs, assess progress, and report to parents. These matrices, which are kept by students in a learning folder, are used for regular conversations between teachers and students about the learning progress being made. They can also be used for self-assessment purposes by students.
- Working with checklists supports individualised learning processes at the *ImPULS-Schule, (Thuringia, Germany)*. For orientation and for planning purposes, the requirements are made very transparent:

Supported by the checklists, the instructive element of the learning process is getting individualised. Individualising is necessary because the pupils have different pre-knowledge, successes in learning processes, and learning strategies. The checklists give them an orientation. (Teacher).

The personal orientation is an important precondition for an effective handling of differences; the mixed-age groups make individual learning paths, learning speed, and learning strategies possible.

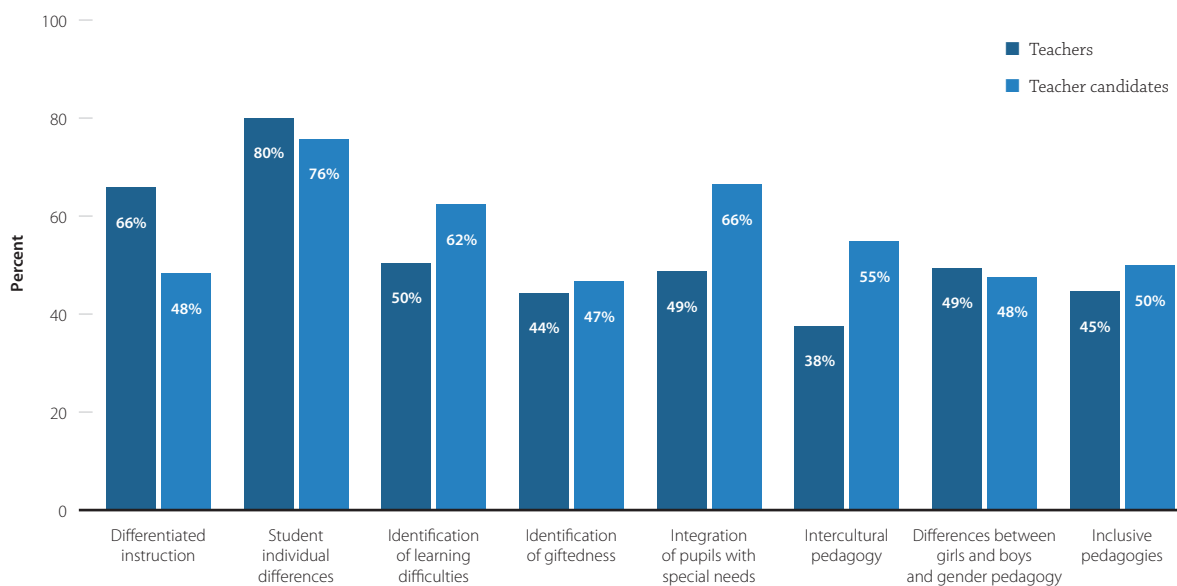
WHAT STUDENTS LEARN: FROM CURRICULUM TO COMPETENCY

Uniformity and standardisation have shaped not only the *how* of teaching and learning environments in schools, but also *what* students are supposed to learn and teachers to teach. Many educational systems struggle to move away from a curriculum framework where uniform learning objectives and content are prescribed in a centralised way to be taught in all schools of the nation.

Global Competency

One of the ways that the debate has been opened is through the discourse on global competency as a required skill for the

Figure 1

Teaching diverse classrooms: What teachers and teacher candidates report learning

Source: Sonmark et al. (2017).

Note: Data are from a pilot study, in five OECD countries, of teacher, teacher candidate, and teacher educator pedagogical knowledge.

21st century. As defined by the OECD: ‘*Global competence is the capacity to examine local, global and intercultural issues, to understand and appreciate the perspectives and world views of others, to engage in open, appropriate and effective interactions with people from different cultures, and to act for collective well-being and sustainable development.*’⁷

Global competency is generally argued to be made up of four dimensions:⁸

- 1. Examine** issues and situations of local, global, and cultural significance (e.g., poverty, economic interdependence, migration, inequality, environmental risks, conflicts, cultural differences and stereotypes);
- 2. Understand** and appreciate different perspectives and world views;
- 3. Establish and engage** in positive interactions with people of different national, ethnic, religious, social or cultural backgrounds or gender; and
- 4. Take action** towards collective well-being and sustainable development.

Redefining Knowledge and Schools of Study

As suggested above, diversity also questions the cultural hegemony in the contemporary organisation of knowledge. What students learn at school and in universities is very much the product of a 19th and 20th century global world order in which particular forms and strands of knowledge have gained hegemony. The organisation of scientific knowledge in disciplines, for example, has its origins in a particular temporal and special context. In the

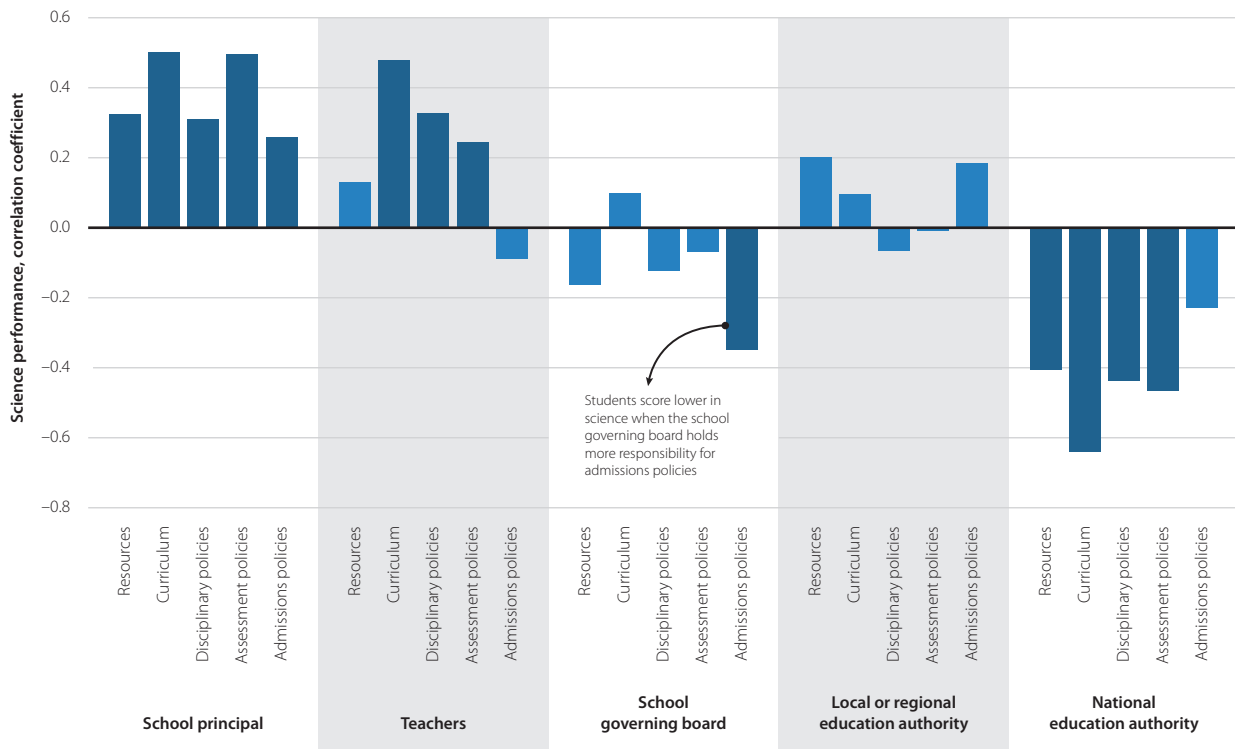
21st century a more multipolar world also engenders more variety and diversity in knowledge systems.

Such developments challenge the power of the established disciplines over knowledge creation, but also over knowledge transmission through school and university curricula. Today the most fascinating discoveries and frontier developments in scientific research are to be found at the boundaries or in the intersections of disciplines. Interdisciplinarity should not be understood as simply mixing multiple disciplines, but as a smart way to spell out the interconnectivity among various complementary viewpoints and a necessary condition to solve today’s complex problems.

So what does this mean for models of education and work? One way to answer this question is to look at the match (or mismatch) between field of study and employment. Recent OECD research has found that ‘field-of-study’ mismatch between graduation and employment is actually rather high, including for Science, Technology, Engineering, and Mathematics (STEM) graduates.⁹ Across countries that participated in the OECD Survey of Adult Skills, no less than 65% of workers trained in ‘science, life sciences, math and computing’ are actually working in a field other than the one for which they have been trained—this is much higher than the average mismatch across fields of study of 39%. These data nuance the widespread concern about low numbers of STEM graduates as being not only a problem of the choice of study at the entry of higher education, but also for suitable employment opportunities afterwards.

A recent report on the STEM workforce of the US National Science Foundation has further qualified the debate.¹⁰ It shows that there are loose links between field of study and actual STEM occupations, and also that there are multiple pathways leading to STEM jobs. As a result, the report requests that policymakers

Figure 2

Correlations between the responsibilities for school governance and science performance, PISA 2015


Source: OECD (2016c).

Notes: Results are based on system-level analyses of 70 educational systems. Statistically significant correlation coefficients are shown in a darker tone.

move away from a narrow focus on STEM qualifications to better understand the heterogeneity of the STEM workforce.

Although the focus has been on STEM, these arguments can be extended to other areas of study. This discussion so far seems to provide support for smart new combinations of disciplines in higher education curricula. Interdisciplinarity might have become a fashionable and often superficial mode of curriculum reform, but interdisciplinarity also is a core component of many interesting examples of curriculum and pedagogical reforms in higher education, such as problem-based learning.¹¹

HOW TO SUPPORT TEACHERS: COMPETENCES FOR DIVERSITY

Diverse classrooms, new pedagogies, and curriculum frameworks focusing on new competences will require different skills sets and behaviours from teachers.¹² The question thus becomes: are teachers ready for this? Or are teachers themselves educated for professional roles that put uniformity and conformity first?

The OECD's Teaching and Learning International Survey (TALIS) has consistently demonstrated that teachers report a high need for professional development for teaching diverse students (those with special needs and teaching in a multicultural setting).¹³ In addition, many of these teachers do not receive appraisal and feedback that concentrate sufficiently on these issues, and they also work in schools where this is not a strong focus of school evaluations.¹⁴ More recently, a pilot study in five OECD countries of lower-secondary teachers' pedagogical knowledge

demonstrated that approximately half of the teachers and teacher candidates in those countries have not learned to deal with essential dimensions of diversity in their teaching (see Figure 1 on page 56).¹⁵

The result of this discussion was—and still is—that large parts of the student population are not served well. There is ample evidence that struggling students, or students with disadvantaged backgrounds or special needs, as well as the brightest students, tend to suffer from standardised and homogeneous teaching practices. Other dimensions of diversity, such as linguistic or cultural diversity, might equally suffer.¹⁶

WHERE DECISIONS ARE TAKEN: THE POLICY CHALLENGES

Educational systems that take diversity seriously can no longer rely on governance models of command and control. The policy equivalent of uniformisation and standardisation is a heavily centralised governance system in which all schools are treated in the same way through central steering and accountability arrangements that force schools into compliance with decisions taken in the centre.

In increasingly diverse societies, local conditions tend to vary enormously and schools cannot realise their social mission without adjusting themselves to those conditions. Diversity thus induces flexibility and deregulation, with schools assuming ownership of pedagogy and curricula. Figure 2, based on PISA 2015 data, shows that students' learning outcomes are positively influenced

when responsibilities over curriculum or assessment are located at the level of the school management and teachers and removed from that of national education authorities such as ministries.

TOWARDS A CONCLUSION

Crafting an agenda (from a policy, school, or research perspective) to best address the issues raised in this chapter is complex and encompasses a number of different disciplines. It must also take into account the following (adapted from OECD, 2010):

- *Diversity* is a broad term with multiple meanings. Charting courses of action for systems and classrooms can be done only with careful consideration of the particular context and tradition.
- When diversity is viewed as an asset rather than a liability, it becomes easier to consider and implement the advantages that it can bring to classrooms, schools, and systems.
- Changing attitudes and behaviours is neither simple nor rapid. Real change requires embedding diversity issues within training and development options rather than presenting them as one-off optional modules.
- Suggestions for reform (of curricula, programme design, teaching practice, etc.) must also be considered in light of the incentives available to support and encourage the change desired. One key element too often overlooked is the role of parents, employers, and communities in effecting lasting change.

This chapter ends by reiterating its central argument: diversity is not a problem to be solved. It is a fundamental aspect of being human. Living in a global and inclusive world means that we must challenge the long-standing paradigm of homogeneity in education as part of a larger process wherein our values and expectations for our citizens—in all their diversity—are addressed. It will take time, and it will take explicit, intentional effort. But we owe it to ourselves, our children, and our future to ensure that all students can succeed at school, and beyond.

ENDNOTES

- 1 OECD (2016a). The OECD countries are Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, the Republic of Korea, Latvia, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.
- 2 Sliwka (2010).
- 3 OECD (2016b). The Programme for International Student Assessment (PISA) is a triennial international survey of 15-year-old students that aims to evaluate educational systems worldwide. See <http://www.oecd.org/pisa/aboutpisa/> for more details.
- 4 OECD (2016b).
- 5 Lamport et al. (2012); OECD (2006).
- 6 Dumont et al. (2010); OECD (2013, 2015).

- 7 OECD (2018).
- 8 OECD (2018); see also Council of Europe (2016) for a thorough review of the numerous competence schemes available.
- 9 Montt (2015).
- 10 NSF (2015).
- 11 Van Damme (2016).
- 12 OECD (2010).
- 13 OECD (2009, 2014).
- 14 Jensen (2010).
- 15 These five countries are Estonia, Greece, Hungary, Israel, and the Slovak Republic.
- 16 OECD (2016b).

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CHAPTER 6

Organising to Leverage Diversity: A GTCI Research Commentary

Paul Evans and Eduardo Rodriguez-Montemayor

INSEAD

In today's globalised and connected world, it is surprising that diversity should remain such an under-tapped resource, as discussed in **Chapter 1**. Focusing on diversity as a resource, the aim of this research-based chapter is to explore the link between diversity and performance/innovation and consider how organisations today can leverage this relationship.

Although the topic of diversity has a long history in organisations, it has often been driven by the need to comply with national directives and regulations that seek to achieve the inclusion of and equal opportunity for different segments of society in the workplace (women, people from different racial or ethnic backgrounds, etc.). To this focus on inclusion, equality, and fairness—which are certainly important normative themes—a more recent perspective with a marketing orientation has been added: that the diversity of an organisation and its leadership should reflect that of its markets, thus providing legitimacy and access to those markets.¹

But the idea that diversity is a resource that can enhance productivity, performance, and innovation in organisations

is relatively new. Research carried out during the last 20 years suggests that viewing diversity as a resource, not as an obligation, actually has the greatest prospect of providing a solid and sustainable rationale for leveraging diversity.² Indeed, there is a widespread belief among managers, scholars, and social thinkers that diversity in teams will bring different perspectives to bear on problems, that it will enhance the sharing of information and expertise, and so consequently result in better performance and innovation.³ A lot of popular press has been saying that companies with great diversity outperform their peers by a significant margin. But when one reviews 60 years of social science research, the reality is more nuanced.⁴ This research shows that diverse teams perform well only if certain conditions are satisfied.

So before reviewing how organisations are leveraging diversity, the concept must be understood. Diversity flies in the face of the natural human tendency to associate with people who are similar to ourselves. And not all forms of diversity become a resource that can be used to increase performance. Identity categories such as gender and ethnic origin can polarise views on diversity,

whereas viewing diversity in terms of knowledge and perspectives is something that everyone can buy into. Furthermore, diversity as a resource comes with liability, namely that there are difficulties in collaborating with people who are different from ourselves.

UNPACKING DIVERSITY

We have to unpack the concept of diversity in order to understand how to leverage it. The starting point is to recognise that diversity is not a natural state when it comes to friendship and social ties. As noted earlier, we have a tendency to associate with people who are similar to ourselves.

Professional Networks Must Be Different from Friendship Networks

Sociology studies have long documented the existence of homophily, the desire to associate with those similar to you—people who look like you and think like you, as expressed by the phrase ‘birds of a feather flock together’. This is true for the strongest social ties such as marriage and close friendships, but it also extends to weaker ties such as professional networks as well as relationships of advice or support.⁵ In organisations, colleagues gravitate towards the people who think and express themselves in a similar way—the ‘comfortable clone syndrome’, as it is sometimes called.⁶

In the business and civic worlds this leads to cronyism and corruption, and the professionalisation of management combats this natural tendency. Indeed, ‘professional management’ is measured in the Global Talent Competitiveness Index (GTCI) by indicators on the extent to which top managers are selected on the basis of merit and qualifications rather than family ties and friendship. And, as reported in the GTCI 2015–16, some leading economists argue that such professional management practices are closely linked to national economic prosperity.⁷

Meritocracy and diversity of talent should go hand in hand, but achieving meritocracy is easier said than done—choosing people ‘on merit’ can exacerbate inequalities, pushing discrimination under the rug.⁸ Experiments and practice show that even people who see themselves as objective show deep unconscious bias in their evaluations that is hidden by the cloak of objectivity. In companies emphasising meritocratic values, managers awarded larger rewards to male employees than to equally performing females.⁹ Although meritocracy is a necessary condition for teams to perform better, teams and appointments based on merit do not ensure diversity of perspectives and skills, regardless of background. Professional managers need to open the doors to a wider pool of people with diverse knowledge, experience, and competence.

It may be natural and easy to associate with people who are similar to us, but the reality that social network theory has illuminated is that associating with people who are quite different from us is fundamental to creativity, innovation, and outstanding performance, both within organisations and on wider societal issues.¹⁰ Innovators and inventors—from Thomas Edison to Amazon’s Jeff Bezos and Tesla’s Elon Musk—have backgrounds of diverse experience; they tap into networks of ideas and also have the connections to make things happen. Studies of innovative business leaders today—from Apple’s Steve Jobs

to David Neeleman of JetBlue airlines—show that the same is true of them.¹¹ Frameworks for organisational leadership emphasise the behavioural importance of networking externally rather than internally, and learning to do this is seen as one of the major elements in the transition to leadership.¹² Innovation and creative performance involve bridging different networks where there are no close links (bridging what are known as ‘structural holes’),¹³ and bringing together diverse collaborative teams of people with various backgrounds of relevant experience to the problem-solving task at hand. Today, fuelled by the explosion of information in the knowledge economy, exploiting local innovation opportunities is becoming more important for the competitive advantage of corporations than exploiting R&D at corporate headquarters. And corporations begin to understand that their innovative potential depends on the reach of the social networks of employees, and on their firms’ capacity for cross-boundary collaborations—diversity extends far beyond the boundaries of the enterprise via its brokers and connectors.¹⁴

It Is Cognitive Diversity that Adds Value

To understand how to leverage diversity, we have next to ask what kind of diversity is relevant to problem-solving and innovative tasks. Many kinds of differences get lumped together under the rubric of diversity: race, age, gender, functional differences in expertise and experience, and differences in attitudes, beliefs, and personality. Yet it is not always easy to tell what differences make a difference.

As discussed in **Chapter 1**, the rich research on diversity distinguishes between three types of diversity: *cognitive, identity, and preference/value diversity*. It is *cognitive diversity*—diversity of knowledge, experience, and perspectives or ways of tackling problems—that is associated with higher performance and creative innovation on problem-solving and predictive tasks.¹⁵ The knowledge and perspectives of people with under-represented identities often get, at best, token attention because of unconscious biases that discount their contribution and potential (see the box on ‘*Unconscious bias: Are men and women really different?*’ on page 63). Although the validity of research showing that there is a business case for gender and other forms of identity diversity can be questioned, the professional differences between men and women get widely exaggerated by pervasive popular stereotypes, becoming an obstacle to diversity. This is explored later in the chapter, when discussing inclusion.

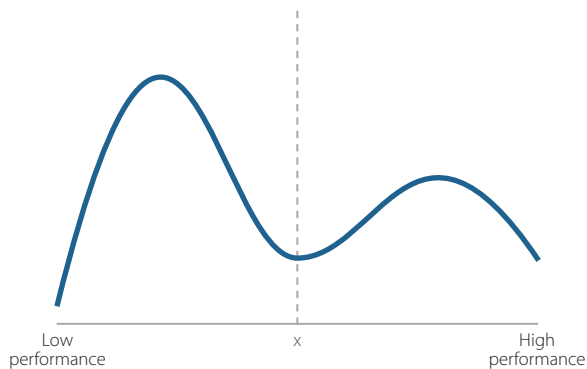
Cognitive diversity is not important for all tasks or organisations. Diversity will not beat ability on routine tasks, only on tasks requiring complex problem solving and innovation under conditions of ambiguity. There is clear value to involving people with different backgrounds and functional skills on a complex task of creating a new web marketing programme, but little value in a McDonald’s hamburger delivery operation.

One problem with cognitive diversity is that it is hard to measure. The diversity of knowledge that we need to bring to bear to a problem-solving or creative task depends on the task at hand. So we tend to organise cognitive diversity in rudimentary terms, using educational disciplines and corporate functions (note that functional diversity of top management teams has indeed

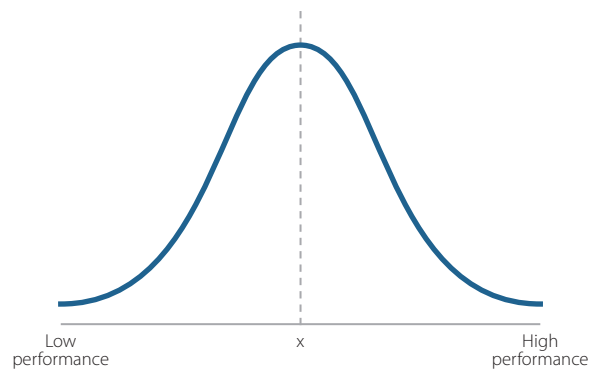
Figure 1

The distribution of performance for homogeneous and diverse groups: A summary of research meta-analyses

1a: Diverse groups



1b: Homogenous groups



been linked to firm performance as long as it is accompanied by collaborative behaviour and accurate information exchange).¹⁶ As discussed later, algorithms and technology may soon assist us to better measure diversity and create high-performing teams.

Diversity Requires Social Skills and Collective Intelligence

At INSEAD, the popular belief that diversity is an asset is evident in our classroom teaching with executives. We sometimes ask them which of two teams will perform best on a complex problem-solving task: a group of diverse people of different functional backgrounds, nationalities, comprising both males and females; or a team of similar people, for example, all German and

all male and all engineers. An overwhelming majority—more than nine out of ten—predict that the diverse team will do best.

However, decades of research show no consistent main effects for diversity on various team and firm performance metrics.¹⁷ A meta-analysis of studies would show that the average performance for diverse teams and homogeneous teams is not significantly different on problem-solving or innovative tasks.¹⁸ But what is noteworthy about the effects found in those studies is that the distribution of performance for diverse and homogeneous teams is quite different (see Figure 1). For the homogeneous groups, there are few innovative high-performing teams and few poor teams. Similarity in ethnic background, gender, and education lifts most teams towards median or average

UNCONSCIOUS BIAS: ARE MEN AND WOMEN REALLY DIFFERENT?

In the context of identity groups, unconscious biases are the social stereotypes that we hold of social groups that influence our decisions and actions, though outside our conscious awareness. Even though we may see our decisions as rational, they may be influenced by such biases. The research on gender difference of Catherine Tinsley and Robin Ely, to be published soon in *Harvard Business Review*, is a good illustration.¹

Are men and women different, they ask? Popular belief says yes, and this viewpoint is captured by bestselling books.² Tinsley and Ely looked into this question, taking qualities that are important competences for business leaders, such as risk taking, negotiation, and confidence. There are many research studies over the decades that have rigorously studied whether such gender differences are real, summarised in meta-analyses. Tinsley and Ely show that such differences may be real in the sense of being statistically significant, but the differences between men and women are small to negligible compared to the differences within each sex. Men, for example, are

slightly more risk taking than women, although many women are much more risk taking than the average man.

That is the *actual* difference. But they show that the *perceived* difference is much bigger—in the minds of both men and women. The average woman is seen to be much less of a risk taker, and the small differences between the average man and the average woman widen into a black-and-white stereotype: men are risk takers, and women avoid risk. So when we look for leadership candidates to take bold strategic decisions, the many women who are comfortable with risk get screened out by what has become a widely shared unconscious bias.

Notes

- 1 Presentation by C. Tinsley on 'Men are from Mars ... maybe women are too' at the INSEAD Conference on Business & Public Policy, Fontainebleau, November 2017. Professor Tinsley is at Georgetown University; Professor Ely is from Harvard Business School. Their research will be published in the May 2018 issue of *Harvard Business Review*.
- 2 One of these best sellers is John Gray's *Men are from Mars, Women are from Venus*, HarperCollins (1992).

THE COLLECTIVE INTELLIGENCE OF TEAMS

Soccer fans and those of other team sports know what lies behind the idea of collective intelligence. A team of the best players gets beaten by the teamwork of competent but undistinguished players.

Building on decades of work by Harvard's late Richard Hackman, collective intelligence focuses on a group's capability to collaborate and coordinate efforts.¹ Research suggests that collective intelligence is a stronger predictor of team performance on complex ambiguous tasks than individual ability alone. The research looks at strategy (how teams form goals and break them into different tasks), structure (how activities and roles are organised), processes (how the flow of information and activities are organised), rewards and incentives for individuals, and the selection of people.²

One series of experiments on smart diverse teams with productive track records showed that they had three attributes.³ First, the team members contributed equally to discussions rather than being dominated by one or a few members. Second, the members of smart teams were better than those in teams with lower collective intelligence at 'reading the minds' of others—detecting and decoding complex emotional reactions to the points under discussion. Indeed, women were better at this than men, and teams with female members tending to outperform male-only groups. And third, the smart teams built a collective memory of what members knew and how they felt about issues (what is known as *transactive memory*).⁴

Notes

- 1 Hackman (2011).
- 2 Woolley, Aggarwal, & Malone (2015). See also Malone & Bernstein (2015).
- 3 Woolley, Malone, & Chabris (2015).
- 4 We might add that one of the most disappointing findings from the group decision-making area in recent years is that information exchange in groups typically focuses on information that is known and shared by all group members before the interaction, rather than searching for new information externally or using information that is uniquely held by individual experts. This process is known as *confirmation bias*.

performance, but not into the elite of high performers.¹⁹ Indeed, high performance is more likely to come from diverse teams, reflecting the popular belief.

As one scholar put it, '*diverse teams are in fact quite diverse*'; for a large number of diverse groups, the differences blow the group apart. There is a high probability that diverse groups are among the worst performers because they find it difficult to handle group processes—such as agreeing on goals, establishing

norms, reaching decisions, and handling conflict. A universal tendency to use self-categorisation—distancing oneself from the norms, beliefs, and behaviours of outgroup people who are different from oneself—adds to this difficulty, as do differences in values. This is called the *social process loss* associated with diversity, and it interferes with teams' ability to capitalise on the increased access to information and knowledge that diversity permits.²⁰ It takes a lot of social skill to collaborate in a diverse environment.

In summary, diversity leads to process gains through increased creativity counterbalanced by process losses through task conflict and decreased social cohesion. Given the importance of collaborative skills in teams where the diversity of people matters for creativity—indeed matters more than the combined IQ of the team members—the emerging field of collective intelligence will stimulate progress (see the box on '*The collective intelligence of teams*').

The implication of the negative effect of diversity as a resource—that it disrupts social cohesion—has important implications for organisations that want to leverage diversity, as well as for educational systems. Indeed, the GTCI 2017 emphasised the importance of social and collaborative skills in the emerging technology-driven machine age. People who have been finding jobs easily during the last 20 years have strong social skills as well as specialised knowledge that makes them employable.²¹

MANAGING DIVERSITY

As mentioned above, most people naturally prefer to work with others who are similar to themselves. But teams of similar people typically produce average results, they are unlikely to be innovative and creative, and indeed there is evidence that the performance of similar people tends to weaken over time.

Nobel Prize winner Francois Jacob once stated that '*for the group, as well as for the species, what gives an individual his genetic value is not the quality of his genes; it is the fact that he does not have the same collection of genes as anyone else; it is the fact that he is unique; the success of the human species is due notably to its biological diversity; its potential lies in this diversity.*'²²

Organisations can create a unique and inimitable resource by supporting diversity. So what organisations have been doing is (1) injecting diversity into their organisations (hiring), (2) educating and developing the skills to handle workforce diversity, (3) building inclusive norms of behaviour, and (4) organising around agile project teams to harness that diversity.

Each of these four aspects of organising for diversity is considered below in turn.

Hiring and Appointments

The belief in a 'science' of hiring—in predictive testing to guide recruitment—started to fade 40 years ago, when companies became scared of lawsuits around the validity of such tests.²³ What replaced such tests was recruitment based on multiple, informal, qualitative interviews. Yet mountains of literature show that the intuitive way in which we judge professional fit and performance potential is rife with snap judgments—and the use of stereotypes and hidden biases²⁴—rooted in our upbringing

and perhaps on deep neurological connections. Properly used, multi-measure and cognitive ability tests are far more effective in matching people to jobs than are personality tests or interviews,²⁵ and they avoid unconscious bias that works against diversity. Recruitment and staffing is a domain where there is a big disconnect between practice and research evidence, although this is changing.

Technology is becoming a game changer in recruiting for diversity. Artificial intelligence (AI) and algorithms based on big data analytics hold the prospect of cutting through biases and stereotypes, focusing on the substantive cognitive competences that characterise high performers²⁶—and not on superficial identity factors such as gender, race, or even graduation from an elite university.²⁷ Seventy percent of recruitment applications in the United States are reportedly never seen by a human eye.²⁸ Standardised tests based on data analytics are broadly used in call centres and big retail stores; the online assessment of candidates results in red (reject)/orange (possible)/green (consider) signals. Studies of the use of algorithms to recruit software engineers highlight characteristics—such as affinity for certain websites and the use of certain words and phrases—that allow one to identify people with no software experience who would be gifted at the programming work.

Even in tech giants such as Google, recruitment still involves structured interviews and committees. However, people analytics leads companies to talent pools that were untapped until recently, such as candidates for tech and sales positions who did not attend college and who do not fit with traditional profiles and yet perform well because they have relevant experience. People analytics puts a blinder on identity bias. AI can help detect the people who are best suited to the job, although there is a risk that machine learning may replicate some of the biases and negative impulses of human activity.²⁹

Even without algorithms and AI, recruitment practices are changing. Hiring managers are advised to use software that strips age, gender, race, socioeconomic background, and similar identity-related information out of résumés so that recruiters focus only on the experience and skills needed for the job. This approach is analogous to the blind recruitment used by concert orchestras since the 1970s to prevent conductors from excessively favouring their former students—candidates for the orchestra play behind a blind screen. The candidates get selected on pure competence and ability to perform.³⁰ Blind auditions used by technology platforms to assess skills resulted in no less than 60% of candidates coming from under-represented backgrounds, to the surprise of qualified hiring managers.³¹ A growing number of companies—such as Tata Consulting Services (TCS)—use performance and behaviour on games and competitions as a filter to find professional hires.

Using people analytics, Google's Aristotle project is studying everything from team composition to email patterns to figure out how to build a perfect team. One of the most important discoveries is that demographic diversity in the composition of teams is not as important for team performance as inclusion—so that all people have their voices and opinions heard.³² This finding underlines the importance of developing social skills for collaboration.

Educating and Developing the Skills to Handle Diversity

Two aspects of education and training for diversity are worth highlighting. The first is the need to train people so that they are aware of the biases that influence their judgments and decisions about other people. The second is the need to train people in collaboration so as to minimise the social process loss of diversity—the communication problems, conflicts, and difficulties of goal setting in teams built on diversity. Both of these challenges are so important and run so deep across societies that they are leading to reforms in education, from primary school through to higher education. Schools face the challenge not only of building individual skills in maths, problem-solving, and literacy but also of building the collaborative project skills needed for a more inclusive world.

Diversity training has proliferated, especially in the United States, during the last 20 years. Its goal is to make people aware of the many biases that influence their judgments on people matters—from recruitment to performance appraisal and talent development to coaching behaviours. But the overriding conclusion of many recent reviews is that such training has had little impact on organisations—either in terms of increasing diversity and inclusion or on organisational performance. Some studies even show that diversity training may actually lead to backlash.³³ Those biases run deep, and without a broader inclusiveness strategy at all levels of the organisation such training has little effect. According to renowned behavioural economist and Nobel Prize winner Daniel Kahneman, trying to outsmart bias at the individual level is a fool's errand, even with training.³⁴ When it comes to injecting more diversity into an organisation, data analytics and the deeper process changes focused on inclusion, discussed in the next section, seem to work better.

Training in collaborative skills—learning to collaborate with people who are different from oneself in terms of culture and ethnicity, function, and educational background—holds more promise. Recruiters who come to business schools such as INSEAD always note that what they are looking for above all is individuals with the people skills to work across boundaries with others of different nationalities, disciplines, ethnic backgrounds, and the like in today's flexible, project-oriented organisations.

A key point in collaborative skill development is the specification and clarification of goals and deliverables of teams—alignment around goals is imperative for the functioning of diverse groups. Early studies in social psychology showed that clear goals unify teamwork, and that ambiguous or ill-defined goals contribute to social conflict in groups.³⁵ When the goals and deliverables on a task are unclear or not shared, conflict and lack of progress typically get attributed unfairly to cultural, personality, or functional difference, while clear goals and targets unite teams. Similarly, skill in facing up to conflict is another vital competence to build—team conflict can add value or destroy it. Good conflict fosters respectful debate and yields mutually agreed-upon solutions that are often far superior to those first offered—it is an integral element of problem solving in a diverse team.³⁶ Bad conflict occurs when team members cannot get past their differences, thereby damaging productivity and

stifling innovation.³⁷ Given the amount of time spent in meetings and in collaborative teams, it is useful to ask about the quality of conversations in an organisation. Where there is trust and analytic rationality, creative dialogue is most often found in diverse teams whereas ‘dehydrated talk’ often characterises collaboration between similar people.³⁸

The societal challenge of leveraging diversity is so critical and broad that one can argue that the necessary collaborative competences should be developed not through company or Master of Business Administration (MBA) programmes but through education—from basic primary school education through higher education. Building on a number of years of discussion and analysis, this is the view of the Organisation for Economic Co-operation and Development (OECD), which argues that young people need to learn to collaborate with others from different disciplines and cultures in a way that solves complex problems and creates economic and social value (see **Chapter 5**). Educators have been discussing for decades how best to build these capacities; schools in Scandinavia and elsewhere have been moving fast from teacher-centred learning to pedagogies building on project-centred learning. Is there a distinctive set of competences that equips young people for their culturally diverse and digitally connected communities? Can students learn to mobilise knowledge, cognitive and creative skills, and values and attitudes so as to act creatively, collaboratively and ethically?

The concept of *Global Competence* is a response to such questions. The OECD proposes to extend the Programme for International Student Assessment (PISA) of educational competences across countries of the world that today measures the skill of 15-year-old students on maths, verbal literacy, and problem-solving ability. As outlined in **Chapter 5**, various ‘global competences’ are needed to leverage diversity and to avoid its conflictual side. These global competences include skills such as the ability to interact effectively with others who are different, as well as empathy; intercultural knowledge and an understanding of global issues; and attitudes of openness and respect for people from other cultures.

Inclusion and Inclusive Leadership

Diversity and inclusion are closely associated, and corporate policy in this arena typically links them hand in hand as ‘D&I’. Diversity is being invited to the party, but inclusion is being asked to dance, as the authors of **Chapter 4** often express it.

Inclusion is an integral part of identity diversity. Women, for example, may be recruited to an organisation, and they may hold managerial responsibilities and be seen as competent. But they often are not part of the informal inner circle of bold, confident, strategic risk takers (all stereotyped inaccurately as being male qualities—see the earlier box on ‘*Unconscious bias*’); they are consulted less frequently, equal performance does not get equal pay, and their career progression slows as they reach senior management. It is one thing to have a diverse demographic leadership profile, but another thing to build a frank open culture where the relevance and importance of views and opinions is not coloured by unconscious biases and stereotypes. Although there is no accepted definition of *inclusion* in the research literature,³⁹ the key

element of inclusion can be seen as giving voice to those who have relevant knowledge, experience and perspectives, regardless of demographic identity. The ideas of many people are not heard or do not have equal footing with those of senior team members, for example, who may dominate conversations. The confidence of outgroups is undermined so that they discourage voice, contribution, and performance.

Despite all the US studies that show that companies with a high percentage of women in senior leadership positions perform better, the business case for having quotas of women at the top is less obvious than the business case for inclusive behaviours, starting with leadership, that capitalise on all forms of diversity. Without inclusive leadership, the views of those women may be unconsciously downgraded because ‘she is only the token woman’. A woman should not be in top management because she is a woman, but because she has skills and perspectives to bring to the table.

Researchers and practitioners today see inclusion as creating a leadership and organisational culture that on the one hand is free of unconscious bias, and on the other hand encourages constructive exchange of views and perspectives, leading to more productive and innovative decision making, where demographic qualities (male/female, cultural background, old school background, age) are largely irrelevant—it is the ability to contribute to problem solving that counts.⁴⁰ It is about *behavioural change*—promoting voice, building confidence to express views and act, coaching and providing feedback so that people can contribute. Inclusion also involves norms reflecting the importance of collective rather than individual intelligence, as discussed in the previous section—contributing equally to discussions, showing sensitivity to complex emotional reactions. This behavioural view of inclusion is well captured with the story from an INSEAD colleague described in the box on ‘*Inclusive leadership: Unlocking diverse talent*’, where the manager of a Swiss reinsurance company turns a polarising debate on gender diversity into a productive environment for diversity, building on flexibility and inclusiveness.

Inclusion is less about percentages of women in senior management positions and on boards of directors, and more about the leadership behaviours that contribute to innovation and performance (see **Chapter 4**)—though many argue that leadership behavioural change will result in a broader demographic profile of senior management, as the Swiss company story indicates. Inclusive leaders focus more on the process of work and less on the content, guiding their teams to build shared understanding and laying the foundation for effective collaboration. This way they can facilitate targeted discussions that explore the varying ways team members look, act, speak, think, and feel, to immunise the team against unproductive conflict when the pressure is on.⁴¹ Indeed, if an organisation cannot crack the gender barrier, then it is unlikely to be able to crack the broader behavioural barriers to capitalising on diversity.

Without an inclusive cultural infrastructure, the resource benefits of diversity in terms of innovation and productivity may fail to materialise. But obviously this is not an overnight or simple process, as with any process of deep cultural change. It starts

with top management leadership, as in the instance of Swiss Re; McKinsey studies estimate that it takes three to five years at minimum.⁴² The head of DeLoitte's practice in this domain views the following steps and strategies as important:⁴³

- creating a top-level focus and strategy at the CEO/COO/CHRO level;
- assigning a top executive the responsibility for leading and sponsoring the inclusion and diversity program;
- creating behavioural standards and diversity metrics, and holding leaders accountable for results;
- training people at all levels on topics such as unconscious bias, similarity bias, structural bias, and self-rater bias;
- integrating diversity and inclusion strategies in recruitment, performance management, leadership assessment, and training; and
- creating employee networks (D&I champions, employee resource groups, and communities of practice) to bring people together.

The experience of South Africa in inclusion over the last 25 years since the end of apartheid is a good illustration of action at all these levels, and is captured well by the experience of Nene Molefi, an international thought leader on inclusion.⁴⁴ Her experience in breaking through from a background as a black woman from the slums of Soweto under apartheid to becoming a leader of employment equity—first at Eskom, the African energy corporation, and then in the national transformation as the country tried to free itself from the apartheid legacy—is a testimony to the many facets of inclusion.

Organising to Harness Diversity

Organisations in today's rapidly changing business environment—often characterised as VUCA, or volatile-uncertain-complex-and-ambiguous—have to bring together ideas, skills, perspectives, and resources rapidly and flexibly to solve problems and generate creative innovative solutions. How should the firm respond to a new customer need, a competitive threat, or a new technology? How should it commercialise a new service rapidly across multiple markets?

The way we organise in such fast-moving environments is necessarily evolving. In the past, the ideas, skills, and resources needed to tackle such strategic questions were located in hierarchical ladders captured by organisational charts. Coming up with innovative answers was a slow process. If the job was the unit of analysis in the 20th century, it is the multifunctional diverse team in the 21st century. Ever since NASA succeeded in sending man to the moon by grouping engineers from different functions on projects (the first formal matrix organisation), large organisations from McKinsey and the World Bank to pharma and

INCLUSIVE LEADERSHIP: UNLOCKING DIVERSE TALENT

Joynson-Romanzina, head of Global Diversity and Inclusion at Swiss Re, embarked on a journey three years ago to transform the company's thinking on diversity and inclusion. Many companies have implemented far-reaching gender diversity initiatives without seeing much by way of results.

Knocking on doors and talking to executive committee members, it became clear to her that *'we were divided into two camps. One wanted to get more women in leadership, the other camp said "if this is all about women, count me out"'. I realised quickly that this is a very polarising topic.'*

But there was one thread that everyone seemed to agree upon—there was a broad-based commitment to diversity of thought and opinion. This evolved into a discussion around a strategy that everyone could buy into for inclusion of diverse perspectives in leadership. Swiss Re was already a diverse company, but unconscious biases were discouraging employees from grabbing the next rungs on the ladder or creating the most inclusive teams.

A chance to show what was possible came her way with the appointment of a new, change-minded CEO to head a Swiss Re business. The executive was convinced that more diversity of viewpoints, gender, culture, education—you name it—on his team would mean more client-centricity, his ultimate goal. Although the business was doing well, he opened up all of the most senior management positions, encouraging everyone in the layer below to apply.

With applications about to close, he noticed that virtually no women were vying for the jobs. Puzzled, he consulted with Joynson-Romanzina who told him he just had to ask. *'Research shows that women are less likely to feel qualified, even when they are,'* she explained. *'You need to go out and tell women, and men, very specifically that they should be applying. Tell them there is no guarantee that they will get the job, but they should at least apply.'*

He extended the application deadline and brought on board a diverse hiring team that was put through unconscious bias training to ensure an equal playing field for all. The end result? Everyone agreed that the best person got each job and the executive team got more cross-functionality, generational balance, and women: 40% up from 17% before the exercise.

Source

Adapted from the article of the same name published on INSEAD Knowledge; see Ibarra (2016).

telecom companies have organised work and teams around projects.⁴⁵ International corporations have long expanded the number of horizontal coordinators—business and area leaders, global competence leaders, and global account managers—so that managerial work becomes working on multiple projects at the same time.⁴⁶ Even the production of academic knowledge through research and scholarship increasingly draws on diversity through teams; teams produce more frequently cited research than individuals, and this trend has increased over time.⁴⁷

In today's emerging 'agile organisation', different domains of expertise and perspective are brought together through agile teams and squads. For example, the core unit at the Swedish music streaming company Spotify is the squad of up to eight people who have full accountability for a specific aspect of a product.⁴⁸ These squads also have autonomy over how they achieve their targets. There are no appointed leaders; they undertake regular 'stop-the-music' reviews to take stock of successes and failures; performance management processes focus on feedback and coaching rather than evaluation. These squads are organised into a light matrix called a 'tribe', and tribes are linked horizontally through 'chapters' that focus on internal competence development as well as on quality, learning, and web development.

The need to organise talent with diverse skills and perspectives around shifting projects has long characterised professional service firms in areas such as consulting. Agile organisation is spreading into banking services. ING, one of the world's largest banks, has overhauled its operating model in the Netherlands to create a scaled agile organisation. The company began this multiyear transformation by focusing on changing employees' behaviour. It introduced a new way of working, breaking up internal silos and creating small, interdisciplinary teams with members from information technology (IT), marketing, product management, business units, and other functions.⁴⁹ These squads had the authority to develop a new product or process from start to finish and then focus on a new mission.⁵⁰ Over time, the model was scaled up and rolled out across the organisation. Already the move has significantly increased the pace of development in several areas, boosting speed to market and reducing the size of the workforce by up to 30% in some departments.

The focus of Google's Aristotle project in its People Operations department is on how technology and analytics can facilitate assigning the right people to the right projects (regardless of their occupation or position within a company), matching people who are likely to work well together (based, for example, on a good chemistry of personalities and behaviours identified by the data) and for reorganising teams in new ways to meet changing needs. Staff may belong to multiple squads and tribes depending on where their knowledge and experiences can bring value. There are challenges, of course, in such agile organisations—among these is frequent over-commitment, since key individuals are parts of multiple teams.⁵¹ But perhaps the most important dimension of organising is the nature of the task.

Diversity and project organisation are not needed on all tasks; using conventional hierarchy and ignoring diversity since people who are similar can communicate easily is sometimes the best option. Building on the distinction between exploration

and exploitation,⁵² diversity and teamwork are well suited to *exploration tasks* that involve innovation and investigating new ideas, opportunities, and products, but less clearly relevant for tasks that focus on *exploitation and implementation*, where similarity in orientation may well facilitate performance.⁵³ As noted earlier, there is little value to teamwork building on diversity in a fast-food restaurant operation. Organisation theorists have long argued for an ambidextrous architecture that differentiates activities depending on whether they are oriented to exploration (such as research, product development, new ventures) or exploitation (sales and service, for example), integrated by a top management team.⁵⁴ However, many projects go through innovative exploration stages followed by focused implementation. Leadership can be rotated, matching differences in orientation to the requirements of a project. During the more creative phases, the freethinkers would be in charge, while analytical and detail-oriented members would take over evaluation, organisation, and implementation activities. It is important that all team members come to understand the value of the different approaches.

CONCLUSION

There is an enormous body of research on diversity that cuts across different disciplines. It reflects a broad belief that, in an age of innovation, transformation and pressing societal challenges requiring collective action—and where machines are taking over the routine, as reported in the GTCI 2017—diversity is one of mankind's most precious resources.

Three key takeaways emerge from this research review. First, diversity means teamwork, collaboration, and networking, but it is not easy. The fact is that teamwork and collaboration requires a high level of social skill. It requires what today is called *collective intelligence* rather than only *individual intelligence*. Organisations seek out people with these social skills, and they try to foster their development, but we have to face up to the challenge of how we can build the development of these collective competences into the way that we educate and bring up our children.

The importance of individual talent should not be dismissed, however. Although the focus of this chapter has been on how we can organise to leverage that diversity, the tremendous benefits of diversity in individual experience should be acknowledged, as discussed in **Chapter 1**.

Second, although there is broad agreement that it is cognitive diversity that is important—diversity of experience, knowledge, and perspectives on problem solving—the relevant cognitive skills for problem solving are hard to measure and manage. In the future, algorithms and machines may help us tap more effectively into that cognitive diversity. Meanwhile, identity diversity—notably gender diversity—may be a good starting point. After all, half of the human race is female, and statistics unambiguously show a high degree of gender discrimination in organisations around the world.

But there is a twist here. Organisations will often find that actions to tackle gender diversity are polarising, leading to disinterest or even accusations of reverse discrimination. It is important to recognise that tackling gender inequalities involves deep changes in norms and behaviours. Organisations will find that they have

to tackle a deeper problem, namely the need to introduce more inclusive behaviours and cultures. In so doing, research and growing body of experience suggests that they will benefit in terms of innovation and performance—and end up with a broader demographic profile of leaders and contributors: men and women, people with different sexual orientations, dynamic millennials and older people with the wisdom of experience, and those with different ethnicities and cultural backgrounds. So the challenges of diversity are the challenges of deep cultural change. We return to the headlines of the ongoing extension of the PISA student assessment that measures secondary school performance in countries across the world: how can we develop and foster the competences, norms, and behaviours for a world that needs inclusive prosperity?

Third, the arena where diversity is important is that of creative problem solving under conditions of ambiguity—the VUCA side of our world. Inclusion will have benefits for those involved in more routine work, but the business case for diversity here is less obvious.

The obstacles should not be minimised. Hammered by the social consequences of globalisation and by unequal and ineffective educational reform, there is a visible tendency to polarisation in many of our societies. The have-nots are splintering from the haves—there is a move towards the disaggregation of social groups that want to split off and take care of themselves. The human tendency to stick with one's own kind is strong—the haves and the have-nots congregate in separate communities with radically opposed agendas. We must fight against the tendency to fragmentation.

ENDNOTES

- 1 Ely & Thomas (2001). This rationale is still important for business, though. For instance, Sue Dodsworth, Kimberly-Clark's chief diversity officer, once explained that diversity of its workforce brings the company closer to its markets: 'we want to look, think and behave like the people who use our products. If we don't represent them, we're not necessarily making all the right decisions.' That was the reason behind the measures to increase the number of women at the top management. See Bhalla et al. (2017).
- 2 See Ely & Thomas (2001); Page (2007b).
- 3 Some of these benefits have been quantified, including in large samples of enterprises (see, for instance, Ostergaard et al. 2011; Garnero et al. 2014). INSEAD's Vikas Aggarwal (and co-authors David H. Hsu and Andy Wu from the Wharton School) studied the implications for firm-level innovation of different approaches to organising the diversity of inventors' technical experience. They used data from 476 biotechnology start-ups (from their founding date onwards) and paid particular attention to the interplay between knowledge production and coordination. Companies organised with higher levels of across-team diversity—for example, creating very different teams each specialising in a particular area—had a greater positive impact on company innovation than those organised with higher levels of diversity within the unit. See Aggarwal (2015).
- 4 See Williams & O'Reilly (1998); Ely & Thomas (2001); Harrison & Klein (2007); Klein & Harrison (2007); Page (2007a, 2007b); Herring (2009); MacMahon (2010); Stahl et al. (2010); Edmondson & Harvey, 2017. For earlier studies, see Hoffman & Maier (1961); Triandis et al. (1965).
- 5 See McPherson et al. (2001); Gompers et al. (2017).
- 6 This is the term used by Leonard & Straus (1997).
- 7 See Bloom & Van Reenen (2010).
- 8 Research shows that organisational cultures and practices designed to promote meritocracy actually often accomplish the opposite, largely because they trigger bias. Castilla & Benard (2010) call this result the 'Paradox of Meritocracy'.
- 9 Strong commitment to meritocratic ideals can lead to suspicion of efforts that aim to support particular demographic groups. For example, initiatives designed to recruit or provide development opportunities to under-represented groups often come under attack as 'reverse discrimination'. Some companies even justify not having diversity policies by highlighting their commitment to meritocracy. If a company evaluates people on their skills, abilities, and merit, without consideration of their gender, race, sexuality, and so on, and managers are objective in their assessments, then there is no need for diversity policies—or so the thinking goes. Yet achieving meritocracy is easier said than done and many biases still persist in organisations at the moment of giving promotions and rewarding different employees. See the examples presented in Cooper (2015).
- 10 Connecting to different people can also lead to economic development. For instance, diversity of individuals' relationships has been found to be correlated with the economic development of communities (Eagle et al., 2010).
- 11 See Dyer et al. (2011).
- 12 Ibarra (2016).
- 13 A *structural hole*, a concept introduced by the seminal work by Burt (1995), refers to a gap between two individuals who have complementary sources or information. Also see Cross & Parker (2004) for a discussion about how social networks help organisations get work done.
- 14 See Arena et al. (2017).
- 15 See, for instance, Wanous & Youtz (1986).
- 16 See Boone & Hendriks (2009).
- 17 Williams & O'Reilly (1998) offer a review of the literature of the 40 years leading up to the 1990s. More recent reviews of the literature are covered in the modelling of diversity by Harrison & Klein (2007).
- 18 See for example the meta-analysis of the performance of multicultural work groups by Stahl et al. (2010).
- 19 Gompers et al. (2017).
- 20 Dahlin et al. (2005) focus on the factors that enable information use in diverse teams and make a clear distinction between cognitive diversity (directed towards information processing) and identity diversity (based on opposing values and focused on emotional/affective states). While educational diversity enhances information use, national diversity invokes social categorisation, thus hindering information use. Mannix & Neale (2005) also conceptualise neatly the three primary theoretical perspectives: the similarity–attraction paradigm, self- and social categorisation, and information processing.
- 21 Evans & Rodriguez-Montemayor (2016).
- 22 This was reported in *Le Monde* in 1980 in an article that later appeared in *The New York Times* (see Yardley, 2013).
- 23 See, for instance, Orlitzky (2007).
- 24 See, for instance, Burrell (2016).
- 25 Martin (2014).
- 26 See Ferguson et al. (2014).
- 27 Michael Lewis' *Moneyball* book (and more recent film) on baseball player acquisition captures this. Decisions to recruit baseball players were typically made by committees of experienced baseball coaches, scouts and players. Under the leadership of a new coach in 2002, the Oakland A's (a team stuck in the lower league) ignored scouts and entrusted player acquisition decisions to algorithms developed by a young Harvard-trained statistical genius who had no experience of baseball. The A's went on to longest winning streak in American league history, launching a revolution in the baseball industry around recruitment.
- 28 O'Neil (2016).
- 29 See Buranyi (2017).
- 30 See Bohnet (2016).
- 31 Cooper (2015).

- 32 Other experiments on smart teams show that a key feature is that team members contributed equally to discussions rather than being dominated by one or a few members (Woolley, Malone, & Chabris, 2015).
- 33 See Lindsey et al. (2017); see also Combs & Luthans (2007); Kulik & Roberson (2008); and Bezrukova et al. (2016).
- 34 See Kahneman (2011).
- 35 See Sherif (1958).
- 36 See Davey (2017).
- 37 See Toegel & Barsoux (2016).
- 38 See Gratton & Ghoshal (2002).
- 39 This concern was raised by Shore et al. (2011).
- 40 Specific techniques can help people embrace productive conflict: define roles to drive agendas, measure problem-solving styles and act on the results, set ground rules around dissension, and define appropriate conflict behaviours (see Davey, 2017).
- 41 See Toegel & Barsoux (2016).
- 42 McKinsey Global Institute (2016).
- 43 Bersin (2015).
- 44 Molefi (2017).
- 45 See Bunderson & Sutcliffe (2002).
- 46 Pucik et al. (2017).
- 47 See Wuchty et al. (2007).
- 48 For more details about this case, see Mankins & Garton (2017).
- 49 Team research has repeatedly demonstrated the saliency of functional background diversity to map differences in expertise and experience of team members (Bunderson & Sutcliffe, 2002; Bunderson, 2003).
- 50 The decentralised decision making implied by agile practices spurs the effectiveness of functionally diverse teams. Boone & Hendricks (2009) show empirical evidence of this, although they also show that decentralisation reinforces the negative consequences of 'locus-of-control' diversity on firm performance.
- 51 See Mortensen & Gardner (2017).
- 52 March (1991).
- 53 See the discussion in Mannix & Neale (2005).
- 54 See O'Reilly & Tushman (2004); Anderson et al. (1997).
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CHAPTER 7

JRC Statistical Audit of the Global Talent Competitiveness Index 2018

Michaela Saisana, Marcos Domínguez-Torreiro, and William Becker

European Commission Joint Research Centre

The Global Talent Competitiveness Index (GTCI) aims to summarise complex and versatile concepts related to human capital and talent competitiveness at the national scale in 119 countries worldwide. In so doing, it raises some conceptual and practical challenges, which are discussed in the GTCI 2018 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.

The GTCI 2018 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 95% 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.

This audit represents the fifth analysis of the GTCI performed by the European Commission's Competence Centre on Composite Indicators and Scoreboards at the Joint Research Centre (JRC). The previous two audits identified a few minor issues concerning variables that had little correlation with the output, but those remaining in the 2017 index have largely been addressed in the 2018 edition. Overall, the JRC concluded that the GTCI 2018 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, and potentially to guide their choices on priority setting and policy formulation.

As in the previous audits, the present JRC assessment of the GTCI 2018 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 competitiveness and innovation. Its main conclusions can be summarised as follows: the version of the GTCI model presented in 2018 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 2018 was undertaken by the JRC in July 2017. The latest GTCI model provided by the development team largely incorporated the issues identified and discussed in the previous edition, in particular full normalisation of the data in order to scale all variables onto the same scale. No critical issues were identified in the 2018 model during this preliminary phase of the audit.

The underlying concepts and framework used to describe global talent competitiveness in the GTCI 2018 have remained essentially the same as those in the GTCI 2017. However, with the aim of improving the quality of the data, several variables have been removed and several others have been added to the model. As a result of the deletion/replacement of some of the indicators, the total number of variables in the GTCI 2018 is now 68, three more than the 65 used in the 2017 version.

Five new variables coming from the World Economic Forum's Executive Opinion Survey have been added to enhance the conceptual framework of the GTCI 2018. Active labour market policies has been included in the Business and Labour Landscape sub-pillar, while Collaboration within organisations and Collaboration across organisations provide significant added value to the Access to Growth Opportunities sub-pillar. The variable

Social protection has been included in the Sustainability sub-pillar. Finally, two new indicators, Skills matching with secondary education and Skills matching with tertiary education have been added to the Employability sub-pillar.

Two variables have also been re-allocated to a better-fitting sub-pillar. The Scientific journal articles indicator has been moved to the Talent Impact sub-pillar, for both conceptual and statistical reasons. And the Availability of scientists and engineers indicator has been reallocated to the High-Level Skills sub-pillar.

Two variables—Skills gap as a major constraint and Taxation—have been deleted entirely from the framework since, as pointed out by the JRC last year, they did not have a solid showing in the correlations matrix.

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 2018 followed four steps:

Step 1: Relevance

Candidate 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 2006. 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 2018 data set comprises 119 countries and 68 variables. 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 3.5,³ and were treated either by Winsorisation or by taking the natural logarithm (in the case of five or more outliers). For variables with five outliers or more, a log transformation is used (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). Data checks confirm that no outliers or problematic indicators are present in the normalised data set as facilitated by the development team.

Step 3: Statistical Coherence

This section presents the JRC's analysis of the statistical coherence of the GTCI 2018, which consists of a principal components analysis to analyse 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 composite indicators. This latter investigation demonstrates the added value of the GTCI both against its component pillars and against other similar indexes.

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 | 0.96 | 0.88 | 0.85 | 0.86 | 0.82 | 0.73 |
| | 1.2 Market Landscape | 0.94 | 0.77 | 0.90 | 0.88 | 0.88 | 0.84 |
| | 1.3 Business and Labour Landscape | 0.91 | 0.80 | 0.74 | 0.71 | 0.74 | 0.62 |
| | 2.1 External Openness | 0.80 | 0.93 | 0.69 | 0.64 | 0.69 | 0.56 |
| | 2.2 Internal Openness | 0.80 | 0.90 | 0.77 | 0.71 | 0.70 | 0.56 |
| | 3.1 Formal Education | 0.70 | 0.51 | 0.87 | 0.82 | 0.79 | 0.85 |
| | 3.2 Lifelong Learning | 0.84 | 0.81 | 0.94 | 0.73 | 0.81 | 0.68 |
| | 3.3 Access to Growth Opportunities | 0.90 | 0.84 | 0.94 | 0.83 | 0.85 | 0.78 |
| | 4.1 Sustainability | 0.91 | 0.82 | 0.88 | 0.94 | 0.87 | 0.79 |
| | 4.2 Lifestyle | 0.70 | 0.54 | 0.72 | 0.92 | 0.81 | 0.80 |
| OUTPUT | 5.1 Mid-Level Skills | 0.68 | 0.53 | 0.69 | 0.83 | 0.86 | 0.73 |
| | 5.2 Employability | 0.79 | 0.76 | 0.81 | 0.68 | 0.82 | 0.65 |
| | 6.1 High-Level Skills | 0.76 | 0.61 | 0.80 | 0.83 | 0.83 | 0.95 |
| | 6.2 Talent Impact | 0.72 | 0.55 | 0.79 | 0.78 | 0.73 | 0.94 |

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

Note: The values are the bivariate Pearson correlation coefficients; values greater than 0.70 are desirable as they imply that the pillar captures at least 50% ($\approx 0.70 \times 0.70$) of the variation in the underlying sub-pillars and vice-versa.

1. Principal Components Analysis and Reliability 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 (11) of the 14 sub-pillars, which captures 53% (Formal Education) to 83% (Employability) of the total variance in the underlying variables.⁴ A more detailed analysis of the correlation structure within and across the six pillars confirms the expectation that the sub-pillars are more correlated to their own pillar than to any other, and all correlations within a pillar are positive, strong, and similar and well above 0.7 (see Table 1). These results suggest that the conceptual grouping of sub-pillars into pillars is statistically confirmed and that the six pillars are statistically well balanced in the underlying sub-pillars.

The six pillars also share a single statistical dimension that summarises 86% of the total variance, and the six loadings (correlation coefficients) are quite high and very similar to each other, ranging from 0.85 to 0.95. 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 0.7 threshold for a reliable aggregate.⁵

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 0.96, 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.

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).⁶ 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,

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 | 91% | 90% | 91% | 91% | | |
| | | Business-government relations | 45% | 43% | 32% | 26% | | |
| | | Political stability | 69% | 52% | 54% | 48% | | |
| | | Regulatory quality | 88% | 84% | 83% | 81% | | |
| | | Corruption | 90% | 82% | 84% | 82% | | |
| | 1.2 Market Landscape | Competition intensity | 56% | 47% | 40% | 38% | | |
| | | Ease of doing business | 65% | 65% | 62% | 64% | | |
| | | Cluster development | 65% | 61% | 56% | 53% | | |
| | | R&D expenditure | 67% | 50% | 49% | 53% | | |
| | | ICT infrastructure | 72% | 63% | 74% | 80% | | |
| | 1.3 Business and Labour Landscape | Technology utilisation | 82% | 79% | 79% | 76% | | |
| | | Ease of hiring | 39% | 17% | 9% | 8% | | |
| | | Ease of redundancy | 31% | 18% | 13% | 11% | | |
| Active labour market policies | | 62% | 63% | 62% | 61% | | | |
| Labour-employer cooperation | | 67% | 61% | 53% | 49% | | | |
| 2. ATTRACT | 2.1 External Openness | Professional management | 66% | 77% | 76% | 72% | | |
| | | Relationship of pay to productivity | 79% | 71% | 63% | 62% | | |
| | | FDI and technology transfer | 62% | 57% | 56% | 52% | | |
| | | Prevalence of foreign ownership | 55% | 54% | 45% | 39% | | |
| | | Migrant stock | 55% | 43% | 31% | 30% | | |
| | | International students | 69% | 57% | 40% | 38% | | |
| | 2.2 Internal Openness | Brain gain | 70% | 63% | 44% | 38% | | |
| | | Tolerance of minorities | 61% | 44% | 43% | 39% | | |
| | | Tolerance of immigrants | 32% | 30% | 21% | 17% | | |
| | | Social mobility | 64% | 75% | 72% | 66% | | |
| | | Female graduates | 17% | 8% | 13% | 14% | | |
| | | Gender earnings gap | 30% | 14% | 9% | 7% | | |
| | | Leadership opportunities for women | 51% | 44% | 35% | 31% | | |
| 3. GROW | 3.1 Formal Education | Vocational enrolment | 44% | 27% | 19% | 21% | | |
| | | Tertiary enrolment | 71% | 44% | 38% | 45% | | |
| | | Tertiary education expenditure | 18% | 12% | 8% | 7% | | |
| | | Reading, maths, and science | 72% | 52% | 50% | 54% | | |
| | | University ranking | 65% | 63% | 51% | 54% | | |
| | 3.2 Lifelong Learning | Quality of management schools | 78% | 72% | 65% | 65% | | |
| | | Prevalence of training in firms | 45% | 28% | 9% | 8% | | |
| | | Employee development | 80% | 73% | 75% | 71% | | |
| | 3.3 Access to Growth Opportunities | Delegation of authority | 82% | 75% | 73% | 69% | | |
| | | Personal rights | 46% | 38% | 34% | 33% | | |
| | | Use of virtual social networks | 61% | 49% | 56% | 57% | | |
| | | Use of virtual professional networks | 73% | 67% | 67% | 67% | | |
| | | Collaboration within organisations | 76% | 69% | 71% | 69% | | |
| 4. RETAIN | 4.1 Sustainability | Collaboration across organisations | 52% | 49% | 46% | 45% | | |
| | | Pension system | 65% | 80% | 56% | 63% | | |
| | | Social protection | 86% | 69% | 78% | 74% | | |
| | 4.2 Lifestyle | Brain retention | 56% | 31% | 55% | 49% | | |
| | | Environmental performance | 81% | 69% | 54% | 59% | | |
| | | Personal safety | 51% | 57% | 50% | 51% | | |
| | | Physician density | 79% | 63% | 38% | 44% | | |
| | | Sanitation | 77% | 61% | 39% | 44% | | |
| | | 5. VOCATIONAL AND TECHNICAL SKILLS | 5.1 Mid-Level Skills | Workforce with secondary education | 67% | 31% | 28% | 19% |
| | | | | Population with secondary education | 69% | 32% | 29% | 19% |
| Technicians and associate professionals | 79% | | | 73% | 73% | 67% | | |
| Labour productivity per employee | 59% | | | 66% | 60% | 65% | | |
| 5.2 Employability | Ease of finding skilled employees | | 83% | 56% | 51% | 56% | | |
| | Relevance of education system to the economy | | 86% | 58% | 52% | 59% | | |
| | Skills matching with secondary education | | 82% | 61% | 53% | 56% | | |
| | Skills matching with tertiary education | | 81% | 47% | 38% | 46% | | |
| 6. GLOBAL KNOWLEDGE SKILLS | 6.1 Higher-Level Skills | Workforce with tertiary education | 84% | 72% | 69% | 56% | | |
| | | Population with tertiary education | 61% | 45% | 39% | 29% | | |
| | | Professionals | 75% | 74% | 73% | 66% | | |
| | | Researchers | 76% | 75% | 75% | 71% | | |
| | | Senior officials and managers | 49% | 45% | 37% | 27% | | |
| | | Availability of scientists and engineers | 58% | 53% | 60% | 57% | | |
| | | Innovation output | 75% | 77% | 77% | 74% | | |
| | 6.2 Talent Impact | High-value exports | 38% | 35% | 31% | 28% | | |
| | | New product entrepreneurial activity | 18% | 9% | 6% | 4% | | |
| | | New business density | 39% | 31% | 23% | 23% | | |
| | | Scientific journal articles | 65% | 60% | 55% | 46% | | |

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

Note: The values are the squared Pearson correlation coefficients, expressed as percentages.

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% | 18% | 6% | 2% | 2% | 7% |
| 20 to 29 positions | 7% | 13% | 10% | 7% | 8% | 18% |
| 10 to 19 positions | 26% | 30% | 17% | 27% | 29% | 24% |
| More than 10 positions | 38% | 61% | 33% | 35% | 39% | 48% |
| 5 to 9 positions | 27% | 18% | 26% | 27% | 31% | 29% |
| Less than 5 positions | 29% | 18% | 34% | 34% | 26% | 23% |
| 0 positions | 6% | 3% | 8% | 4% | 3% | 1% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

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

Table 4

Distribution of differences between the GTCI 2018 and other international rankings

| Shifts with respect to the GTCI 2018 | 2017 Global Innovation Index (Cornell, INSEAD, and WIPO) | 2016–2017 Global Competitiveness Index (World Economic Forum) |
|--------------------------------------|---|--|
| More than 30 positions | 4% | 8% |
| 20 to 29 positions | 13% | 10% |
| 10 to 19 positions | 25% | 25% |
| More than 10 positions | 41% | 44% |
| 5 to 9 positions | 26% | 21% |
| Less than 5 positions | 29% | 25% |
| 0 positions | 4% | 9% |
| Total | 100% | 100% |

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

country variations in 1.1.1 Government effectiveness scores can capture 91% of the variance in the respective sub-pillar scores (Regulatory Landscape), 90% of the variance in the respective pillar (Enable), and 91% both in the Input sub-index and overall GTCI scores. Similarly, country variations in 2.1.1 Foreign direct investment (FDI) and technology transfer scores can capture 62%, 57%, 56%, and 52% of the variance in the External Openness, Attract, Input, and GTCI scores, respectively. In the 2018 data set, there are five variables that have a very low impact on the GTCI variance (less than 10%): 1.3.1 Ease of hiring, 2.2.5 Gender earnings gap, 3.1.3 Tertiary education expenditure, 3.2.2 Prevalence of training in firms, and 6.2.3 New product entrepreneurial activity. Although conceptually enriching the current GTCI framework and despite the sufficient though modest statistical relevance (ranging between 12% and 24%) of four of them to last year's framework, these variables are not found to be important at the overall index level in the 2018 data framework. In fact, 1.3.1 Ease of hiring has consistently been a low-impact variable in the overall index and has been flagged in the JRC's audits since 2014. Accordingly, the GTCI development team should monitor closely how the statistical relevance of all five of these low-impact variables evolve over time in next year's release.

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 2018 ranking differs from any of the six pillar rankings by 10 positions or more in at least one-third of the 119 countries included in the 2018 edition, peaking at two-thirds in 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 2018 with both the World Economic Forum's 2016–2017 Global Competitiveness Index and Cornell University, INSEAD, and WIPO's 2017 Global Innovation Index. After having extracted data from both projects' websites, we find that the rank correlation between GTCI 2018 with both indices is substantially high (correlation ≈ 0.9), which suggests that the GTCI has many aspects in common with both these two indices. Looking at the shifts in rankings (see Table 4), we nevertheless find that 41% and 44% out of the countries

Table 5

Uncertainty analysis for the GTCI 2018: 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 | | Reference value for the weight (within the sub-index) | Distribution assigned for robustness analysis (within the sub-index) |
| GTCI sub-index | Pillar | | |
| 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 (2018).

included in the GTCI 2018 that feature in the other two indices differ in ranking by more than 10 positions when comparing the GTCI 2018 with, respectively, the 2016–2017 Global Competitiveness Index and the 2017 Global Innovation Index. This indicates that the GTCI 2018 offers additional insights into nations' human capital and competitiveness compared to the two 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), 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,⁷ 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, 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 4.7% of data were missing in the data set of 119 countries for all 68 variables). The 'no imputation' choice, which is common in similar contexts, might encourage countries not to report low data values. To overcome this limitation, the JRC also estimated missing data using the Expectation Maximisation (EM) algorithm.⁸

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.⁹ 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 2018).

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 representative of these scenarios, then the fact that the GTCI rank is close to the median rank (differing by two positions or less) for 95% 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 most countries, robust to changes in the pillar weights, the imputation method, and the aggregation formula.

Results for the Input and Output sub-index 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 88% of the countries. Similarly, the Output rank is close to the median rank (less than or equal to two positions away) for 81% of the countries, and the rank intervals are less than or equal to 10 positions for 87% 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 2018 and the Output sub-index, less so for the Input sub-index. For example, in the most extreme case, a country falls by 13 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.¹⁰

Overall, given the fairly modest ranges of uncertainty on the final rankings, the JRC recommendation is not to alter the GTCI methodology at this point, but to consider country ranks in the GTCI 2018 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 2018 and the Input and Output sub-indices are the result of the underlying data and not of modelling choices.¹¹

Figure 1a

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

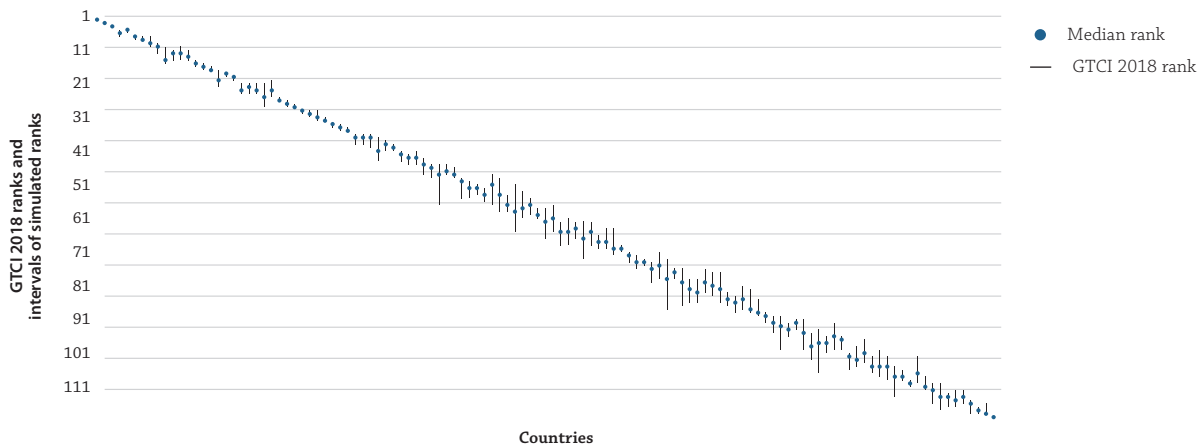


Figure 1b

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

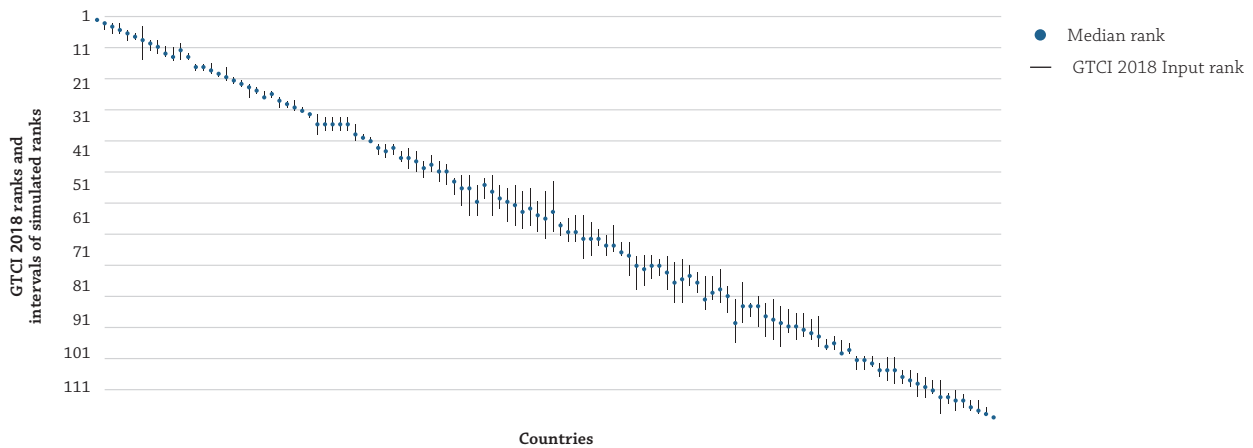
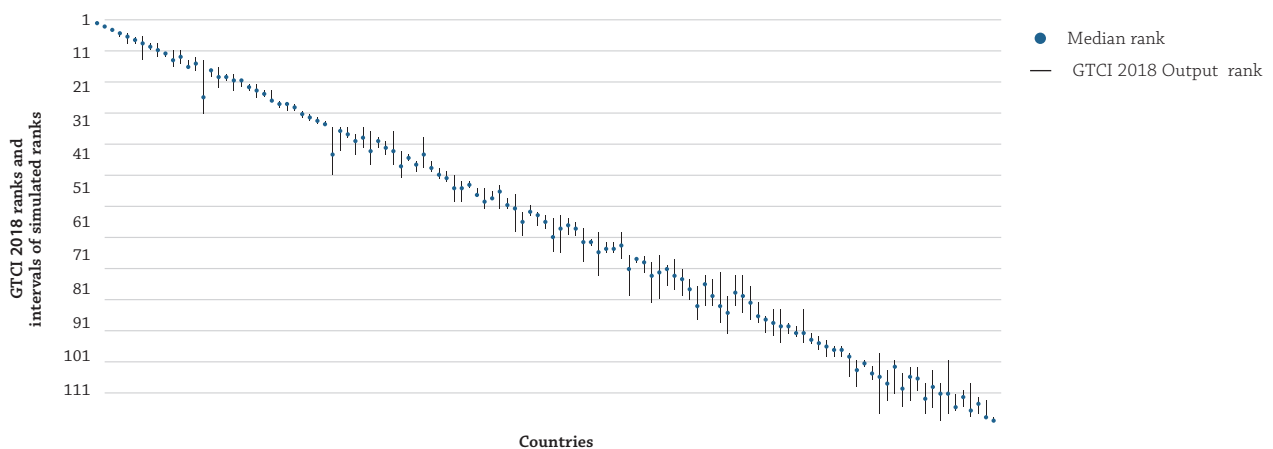


Figure 1c

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

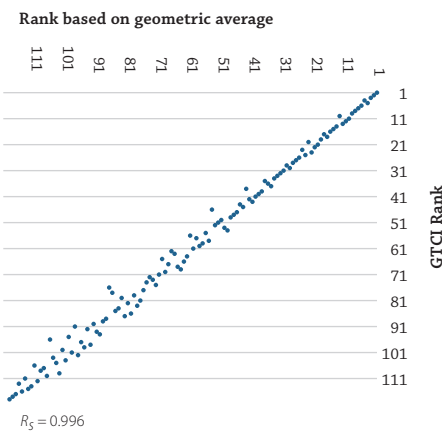
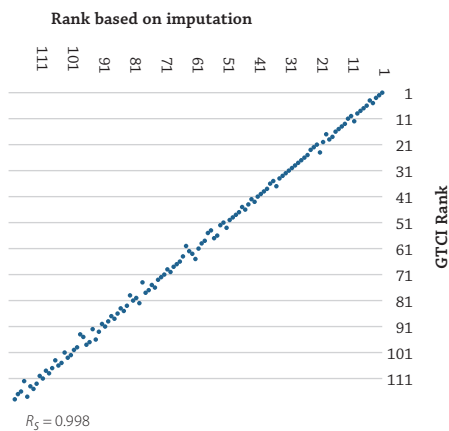


Source: European Commission, Joint Research Centre (2018).

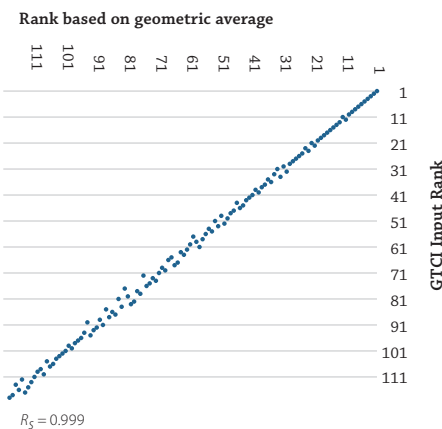
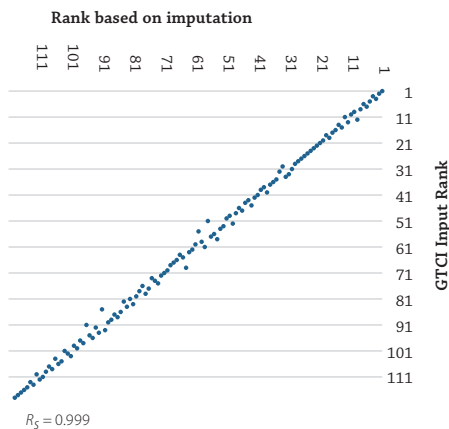
Notes: The Spearman rank correlation between the median rank and the GTCI 2018 rank is 0.999; between the median rank and the GTCI 2018 Input rank is 0.999; and between the median rank and the GTCI 2018 Output rank is 0.998. Median ranks and intervals are calculated over 4,000 simulated scenarios combining 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

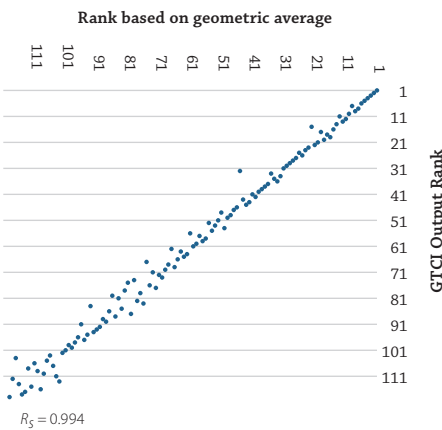
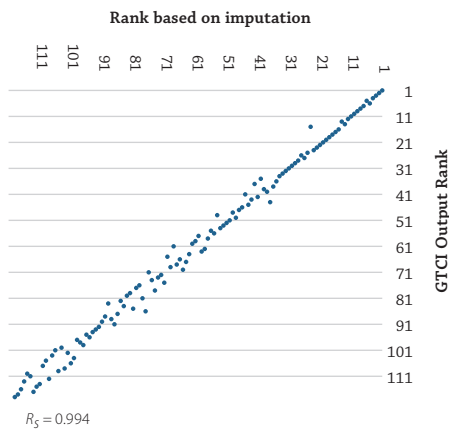
Global Talent Competitiveness Index 2018



GTCI Input Sub-Index 2018



GTCI Output Sub-Index 2018



Source: European Commission, Joint Research Centre (2018).
Notes: R_s represents the Spearman rank correlation coefficient.

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] | 3 | [3, 3] |
| Singapore | 2 | [2, 2] | 2 | [2, 4] | 2 | [2, 2] |
| United States of America | 3 | [3, 3] | 11 | [9, 13] | 1 | [1, 1] |
| Norway | 4 | [4, 6] | 3 | [2, 5] | 7 | [5, 12] |
| Sweden | 5 | [4, 5] | 4 | [2, 5] | 6 | [5, 7] |
| Finland | 6 | [6, 7] | 8 | [7, 10] | 4 | [4, 5] |
| Denmark | 7 | [6, 7] | 5 | [4, 7] | 8 | [7, 9] |
| United Kingdom | 8 | [6, 9] | 6 | [5, 7] | 12 | [9, 13] |
| Netherlands | 9 | [8, 11] | 9 | [7, 11] | 11 | [9, 14] |
| Luxembourg | 10 | [9, 14] | 7 | [3, 13] | 20 | [18, 20] |
| Australia | 11 | [10, 13] | 10 | [9, 12] | 14 | [11, 15] |
| New Zealand | 12 | [9, 13] | 12 | [8, 13] | 13 | [12, 14] |
| Ireland | 13 | [10, 13] | 13 | [11, 13] | 10 | [10, 11] |
| Iceland | 14 | [13, 15] | 17 | [17, 18] | 5 | [4, 7] |
| Canada | 15 | [14, 16] | 15 | [14, 16] | 16 | [15, 17] |
| Belgium | 16 | [15, 16] | 14 | [14, 16] | 18 | [16, 18] |
| United Arab Emirates | 17 | [16, 21] | 18 | [15, 19] | 15 | [12, 28] |
| Austria | 18 | [17, 18] | 16 | [14, 17] | 22 | [19, 23] |
| Germany | 19 | [18, 19] | 19 | [18, 20] | 17 | [14, 20] |
| Japan | 20 | [20, 23] | 21 | [20, 24] | 23 | [21, 23] |
| France | 21 | [20, 23] | 22 | [21, 23] | 21 | [19, 21] |
| Estonia | 22 | [20, 23] | 24 | [22, 24] | 19 | [16, 21] |
| Qatar | 23 | [20, 27] | 20 | [19, 21] | 32 | [32, 46] |
| Israel | 24 | [19, 24] | 27 | [25, 28] | 9 | [7, 11] |
| Czech Republic | 25 | [24, 25] | 23 | [22, 24] | 27 | [25, 27] |
| Malta | 26 | [25, 27] | 26 | [25, 27] | 26 | [25, 27] |
| Malaysia | 27 | [26, 27] | 25 | [24, 27] | 29 | [28, 30] |
| Slovenia | 28 | [28, 29] | 33 | [30, 34] | 25 | [24, 26] |
| Portugal | 29 | [28, 30] | 28 | [27, 28] | 34 | [32, 35] |
| Korea, Rep. | 30 | [28, 31] | 35 | [32, 37] | 24 | [21, 24] |
| Spain | 31 | [30, 31] | 29 | [29, 30] | 38 | [35, 38] |
| Lithuania | 32 | [32, 33] | 31 | [30, 34] | 39 | [36, 40] |
| Chile | 33 | [32, 34] | 34 | [30, 34] | 42 | [40, 42] |
| Latvia | 34 | [33, 34] | 37 | [36, 37] | 30 | [29, 31] |
| Costa Rica | 35 | [35, 38] | 32 | [30, 34] | 52 | [50, 56] |
| Italy | 36 | [35, 38] | 42 | [39, 45] | 31 | [30, 31] |
| Cyprus | 37 | [35, 39] | 45 | [41, 46] | 28 | [27, 29] |
| Bahrain | 38 | [36, 43] | 30 | [29, 35] | 62 | [58, 69] |
| Poland | 39 | [37, 40] | 41 | [40, 43] | 33 | [32, 39] |
| Slovakia | 40 | [38, 40] | 40 | [38, 41] | 43 | [42, 45] |
| Saudi Arabia | 41 | [40, 43] | 38 | [38, 41] | 48 | [46, 54] |
| Greece | 42 | [41, 44] | 47 | [44, 50] | 37 | [33, 43] |
| China | 43 | [40, 44] | 46 | [43, 49] | 40 | [33, 43] |
| Uruguay | 44 | [42, 47] | 36 | [35, 36] | 73 | [70, 75] |
| Panama | 45 | [44, 48] | 43 | [40, 46] | 58 | [55, 58] |
| Mauritius | 46 | [44, 56] | 39 | [38, 42] | 67 | [63, 76] |
| Bulgaria | 47 | [44, 47] | 48 | [48, 53] | 46 | [44, 47] |
| Croatia | 48 | [45, 48] | 56 | [50, 62] | 45 | [42, 45] |
| Argentina | 49 | [48, 54] | 50 | [47, 59] | 51 | [50, 52] |
| Jordan | 50 | [49, 54] | 49 | [47, 56] | 55 | [53, 56] |
| Kazakhstan | 51 | [50, 53] | 54 | [50, 57] | 53 | [51, 53] |
| Hungary | 52 | [51, 55] | 59 | [55, 64] | 50 | [48, 50] |
| Russian Federation | 53 | [47, 56] | 66 | [61, 71] | 36 | [32, 38] |
| Philippines | 54 | [48, 58] | 55 | [51, 61] | 54 | [49, 56] |
| Trinidad and Tobago | 55 | [53, 58] | 52 | [48, 54] | 57 | [57, 64] |
| Oman | 56 | [50, 64] | 44 | [43, 48] | 75 | [70, 83] |
| Azerbaijan | 57 | [52, 60] | 57 | [52, 63] | 56 | [52, 63] |
| Montenegro | 58 | [54, 59] | 69 | [62, 70] | 41 | [39, 47] |
| Macedonia, FYR | 59 | [57, 60] | 51 | [50, 59] | 63 | [59, 64] |
| Lebanon | 60 | [57, 66] | 82 | [77, 84] | 35 | [34, 40] |

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 | 61 | [56, 64] | 78 | [72, 85] | 44 | [35, 44] |
| Botswana | 62 | [61, 68] | 53 | [47, 59] | 79 | [77, 83] |
| South Africa | 63 | [60, 68] | 61 | [49, 64] | 72 | [71, 72] |
| Romania | 64 | [61, 66] | 63 | [60, 67] | 64 | [60, 64] |
| Kuwait | 65 | [61, 72] | 58 | [51, 62] | 78 | [74, 82] |
| Armenia | 66 | [61, 68] | 77 | [73, 85] | 47 | [45, 48] |
| Colombia | 67 | [65, 69] | 64 | [59, 67] | 68 | [66, 69] |
| Turkey | 68 | [63, 69] | 71 | [67, 77] | 59 | [57, 61] |
| Serbia | 69 | [63, 71] | 84 | [80, 88] | 49 | [48, 54] |
| Thailand | 70 | [68, 70] | 62 | [61, 65] | 77 | [71, 80] |
| Mexico | 71 | [70, 73] | 68 | [65, 71] | 76 | [73, 79] |
| Georgia | 72 | [71, 75] | 72 | [71, 81] | 69 | [66, 69] |
| Brazil | 73 | [72, 74] | 67 | [63, 68] | 82 | [77, 85] |
| Peru | 74 | [73, 79] | 74 | [71, 78] | 71 | [70, 82] |
| Mongolia | 75 | [70, 78] | 79 | [74, 80] | 65 | [62, 72] |
| Rwanda | 76 | [72, 87] | 60 | [52, 66] | 99 | [97, 100] |
| Indonesia | 77 | [75, 78] | 75 | [72, 77] | 74 | [72, 84] |
| Albania | 78 | [75, 86] | 70 | [67, 71] | 91 | [86, 96] |
| Dominican Republic | 79 | [78, 85] | 73 | [71, 80] | 88 | [84, 90] |
| Namibia | 80 | [78, 85] | 65 | [59, 72] | 97 | [95, 100] |
| India | 81 | [75, 82] | 88 | [83, 92] | 66 | [65, 67] |
| Sri Lanka | 82 | [76, 83] | 80 | [76, 82] | 81 | [76, 85] |
| Tunisia | 83 | [76, 85] | 94 | [88, 95] | 60 | [58, 62] |
| Guatemala | 84 | [82, 86] | 76 | [71, 81] | 93 | [91, 94] |
| Ecuador | 85 | [83, 88] | 83 | [75, 85] | 89 | [88, 93] |
| Moldova, Rep. | 86 | [80, 87] | 92 | [87, 94] | 70 | [63, 71] |
| Viet Nam | 87 | [81, 88] | 87 | [85, 89] | 83 | [75, 90] |
| Kenya | 88 | [84, 89] | 89 | [85, 95] | 86 | [76, 87] |
| Bosnia and Herzegovina | 89 | [88, 91] | 96 | [89, 98] | 80 | [79, 89] |
| Ghana | 90 | [89, 94] | 86 | [79, 91] | 98 | [97, 100] |
| Bhutan | 91 | [89, 99] | 81 | [77, 87] | 106 | [101, 111] |
| Honduras | 92 | [91, 95] | 91 | [86, 98] | 96 | [94, 98] |
| Kyrgyzstan | 93 | [90, 93] | 98 | [95, 99] | 84 | [82, 93] |
| Iran, Islamic Rep. | 94 | [90, 99] | 105 | [101, 108] | 61 | [59, 69] |
| Lao PDR | 95 | [94, 102] | 85 | [84, 97] | 108 | [103, 113] |
| Gambia | 96 | [93, 106] | 90 | [84, 96] | 104 | [99, 117] |
| Senegal | 97 | [95, 100] | 93 | [88, 96] | 101 | [101, 109] |
| Morocco | 98 | [91, 99] | 97 | [96, 99] | 95 | [93, 96] |
| Paraguay | 99 | [95, 99] | 95 | [90, 96] | 100 | [99, 106] |
| El Salvador | 100 | [100, 105] | 100 | [97, 100] | 105 | [104, 113] |
| Algeria | 101 | [98, 104] | 108 | [105, 110] | 90 | [86, 94] |
| Bolivia, Plurinational St. | 102 | [96, 103] | 106 | [101, 109] | 92 | [90, 93] |
| Uganda | 103 | [101, 106] | 99 | [96, 100] | 110 | [108, 117] |
| Egypt | 104 | [99, 107] | 109 | [106, 113] | 94 | [86, 96] |
| Venezuela, Bolivarian Rep. | 105 | [101, 108] | 112 | [108, 118] | 85 | [76, 85] |
| Lesotho | 106 | [104, 113] | 101 | [101, 105] | 112 | [108, 119] |
| Tanzania | 107 | [105, 108] | 102 | [101, 105] | 115 | [110, 115] |
| Cambodia | 108 | [108, 110] | 104 | [103, 107] | 117 | [112, 117] |
| Pakistan | 109 | [101, 109] | 115 | [112, 116] | 87 | [79, 89] |
| Malawi | 110 | [107, 111] | 107 | [105, 109] | 111 | [104, 115] |
| Nicaragua | 111 | [109, 115] | 103 | [101, 104] | 119 | [118, 119] |
| Ethiopia | 112 | [109, 117] | 110 | [107, 113] | 116 | [108, 118] |
| Mali | 113 | [112, 116] | 111 | [108, 112] | 114 | [111, 116] |
| Bangladesh | 114 | [111, 116] | 113 | [112, 115] | 107 | [105, 115] |
| Zimbabwe | 115 | [111, 115] | 116 | [114, 117] | 102 | [101, 103] |
| Nepal | 116 | [114, 118] | 117 | [114, 118] | 103 | [103, 107] |
| Mozambique | 117 | [116, 118] | 114 | [111, 117] | 118 | [113, 118] |
| Madagascar | 118 | [115, 118] | 118 | [116, 118] | 109 | [103, 110] |
| Yemen | 119 | [119, 119] | 119 | [119, 119] | 113 | [101, 117] |

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

CONCLUSIONS

The JRC analysis suggests that the conceptualised multi-level structure of the GTCI 2018 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 very high Cronbach's alpha value of 0.97, well above the recommended 0.7 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, 2.2.5 Gender earnings gap, 3.1.3 Tertiary education expenditure, 3.2.2 Prevalence of training in firms, and 6.2.3 New product entrepreneurial activity. Although present in the conceptual framework, these variables do not appear to contribute significantly to the variation of the GTCI country scores and, consequently, do not have an impact on the GTCI rankings.

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. 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 2018. 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 two-thirds) 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 2018, subject to some minor hints for future releases, in reliably identifying weaknesses and best practices and ultimately monitoring

national performance in human capital and competitiveness issues around the world.

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 upon request of the index developers).
- 2 OECD & EC JRC (2008).
- 3 Groeneveld & Meeden (1984) set the criteria for absolute skewness above 1 and kurtosis above 3.5. The skewness criterion was relaxed to account for the small sample (119 countries).
- 4 Only in three of the sub-pillars is there a second principal component with an eigenvalue slightly above the 1.0 threshold: 1.3 Business and Labour Landscape (eigenvalue of 1.01), 2.2 Internal Openness (eigenvalue of 1.05), and 6.2 Talent Impact (eigenvalue of 1.03). This suggests that relevant information might be lost when directly aggregating the variables into sub-pillars.
- 5 See Nunnally (1978).
- 6 Becker et al. (2017).
- 7 Saisana et al. (2005), (2011); Saisana & Saltelli (2011); Saltelli et al. (2008).
- 8 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.
- 9 Munda (2008).
- 10 Saltelli & Funtowicz (2014).
- 11 As already mentioned in the uncertainty analysis, about 95% of the simulated median ranks for the GTCI and Input (sub-) indices are less than two positions away from the reported 2018 rank—this percentage drops only to 81% in the Output sub-index.

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Special Section

Cities and Regions

Special Section

Diversity, Inclusion, and Urban Strategies: How Cities Compete and Innovate on the Global Talent Scene

Bruno Lanvin

INSEAD

Last year, the 4th edition of the Global Talent Competitiveness Index Report (GTCI 2017) included a beta version of a Global City Talent Competitiveness Index (GCTCI). At the time, the report underlined 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

In offering its initial attempt at creating a talent competitiveness index for cities, the 2017 report emphasised the need for a cautious approach—that is, one that should be both *‘coherent but differentiated’* and *‘ambitious but realistic’*. Those are the two axes that have been kept at the core of the improved version of GCTCI presented this year.

Thanks to the abundant feedback and comments received since the launch of the first attempt at ranking cities in terms of their abilities to compete on the global talent scene, several significant improvements could be made to the initial GCTCI proposal. Those improvements (described in greater detail below) can be summarised as (1) a streamlined version of the model; (2) the introduction of an updated set of variables; and (3) broader coverage, translating into a significant increase (+ 90%) in the number of cities included.

Last but not least, this special section includes a series of short case studies that considers how the theme of this year’s

Figure 1

The architecture of the Global Cities Talent Competitiveness Index

report ('Diversity for Competitiveness') applies to the strategies and situations of three particular cities.

BENCHMARKING CITIES' TALENT COMPETITIVENESS: RATIONALE AND METHODOLOGY

As indicated earlier, this year's version of the GCTCI model has benefited from three major improvements having to do with the model's architecture, the variables/data used, and the city coverage.

Architecture of the GCTCI Model

As in last year's beta version of the GCTCI, the first four pillars of the model used this year very closely reflect those of the GTCI, using all data that could either be collected at the city level or for which the use of national data (i.e., those used in the GTCI model) made sense at the city level. The main difference introduced in this year's version of the GCTCI model concerns the 'right-hand side' of the model. Former pillars 5 and 6 have now been replaced by one single pillar (called 'Be Global'), which aims to measure the degree of internationalisation of cities. This new pillar includes a city's ability to develop global knowledge skills (measured through its tertiary-educated workforce and population), as well as by its global transport connectivity (measured by the presence of international airports) and its role in international relations (measured through the presence of intergovernmental organisations).

Final GCTCI scores have been calculated as the average of the corresponding five pillar scores of each city.

The resulting GCTCI model hence can be represented as follows (see Figure 1):

Data and Variables Used

Using the same holistic definition of *talent* as the GTCI model, GCTCI uses a significantly smaller number of variables (17) to assess the talent competitiveness of cities. This smaller number is the result of the 'double threshold' approach, used also for the GTCI, by which (1) a variable is included if it is available for a sufficient number of cities (75) and (2) a city is included if it can be described by a sufficient number (50%) of variables in the model.

As in last year's beta version of the GCTCI, the following considerations were taken into account 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.
- **Data applicability.** Some GCTCI variables directly reflect trends and policies set by central governments (e.g., legal frameworks and labour laws). As such, they are of limited use when making direct comparisons of cities and regions on a global scale.

Compared with last year, main changes at the level of variable levels include the deletion of former variable 3.2 (vocational enrolment), which generated erratic values at the city level; and the introduction of variable 5.4 (presence of intergovernmental organisations), which offers an interesting proxy of the degree to which specific cities are perceived as 'global hubs'.

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, in this improved version, the following data sources were used in populating the GCTCI:²

- European Union (EU)-wide statistical engines such as Eurostat
- National-level statistical bureaus
- Local sources, including government agency websites, reports, and related press releases
- Publicly available global rankings such as the EIU Safe Cities Index

Figure 2
GCTCI variables



Note: IGO = intergovernmental organization.

- Where applicable, recognised global data sets such as Forbes Global 2000 or the Academic Ranking of World Universities (ARWU)
- 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 appropriated to represent cities.** These are applicable 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.
- **Data points from online tools injected into published indices.** Where existing branded indices such as EIU rankings did not include a particular city listed in the GCTCI, the city's corresponding ranking/score on Numbeo.com was supplemented, after having its score correlated or

traced to a city that was ranked as a leader in both sources (i.e., in EIU and Numbeo).

Having applied those proxies, the data set was tested for missing data. As mentioned earlier when discussing the double threshold approach adopted in the GTCI and the GCTCI, cities as well as variables where 50% or more of the data points were not available were eliminated, thus ensuring that the sample remained representative. The resulting set was then normalised.

City Coverage

The number of cities covered in the GCTCI has grown from a total of 46 last year to 90 in this edition of the report (Figure 3). This significant increase is the result of a combination of factors, including the proactive work of the 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.

Altogether, the GCTCI coverage remains largely European (47 cities out of 90; Figure 4), for the same reasons as those indicated last year—in particular, the significant amount of work produced by Eurostat in collecting data at the city level. As of now, this effort has no comparable equivalent in other parts of the world. However, it is an encouraging sign that enough data could be gathered this year to allow the inclusion in the index of 43 non-European cities, including 7 in North America (6 from

the United States), 10 from Latin America, 10 from Africa and the Middle East, and 16 from Asia-Pacific (of which 6 are Chinese cities). Like last year, these cities represent a mix of large and small urban centres, some of which are national capitals or leading urban centres while others can 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

GCTCI FINDINGS

This section presents the findings of the GCTCI, looking first at the overall rankings of the 90 cities covered by this year's index, and then at specific rankings on each of the five pillars of the GCTCI model.

Overall GCTCI Rankings

The aggregate results that combine data points and the corresponding scores across the five pillars of talent competitiveness have produced the rankings shown in Table 1. Detailed results (by city and by variable) can be found in Annex 2 at the end of this section.

This year's leader in the GCTCI rankings is the Swiss city of Zurich (which was 2nd last year). It is followed by a tight group of four Nordic cities: Stockholm (Sweden), Oslo (Norway), Copenhagen (Denmark), and Helsinki (Finland). The top 10 list also includes two US cities (Washington DC at 6th and San Francisco at 8th), as well as three more European cities: Dublin (Ireland), Paris (France), and Brussels (Belgium).

The next cluster (11th to 27th) is constituted by a group of cities with similar talent performances (differences in scores between them are fairly small). This group includes Dutch cities such as Amsterdam (11th) and The Hague (27th), but also large metropolises such as Tokyo (12th), Los Angeles (13th), London (14th), Seoul (18th), and Madrid (22nd), as well as three large US cities: Boston (17th), Chicago (21st), and New York (26th).

In the third and fourth groups of cities (28th to 60th, and 61st to 90th, respectively), performance is more widely scattered. Out of the 33 cities included in the former group, 26 are European cities, while the latter has only 3 (out of a total of 30): Sofia (63rd), Belgrade (64th), and Bucharest (68th). This is also the group where most emerging countries cities can be found.

Findings from the GCTCI Pillars

Like last year, a consideration of cities' performance at the pillar level provides a rather uneven picture (see Table 2 on page 95). The three observations made in 2017,⁴ however, are confirmed by this year's results, namely:

Each City Has Its Own Strengths and Weaknesses

As underlined in the GCTCI 2017, the pillars of talent competitiveness do not exist in isolation. Particularly, in high-performing cities, there is evidence of complementarities: for instance,

Table 1

Global City Talent Competitiveness Index rankings and overall scores

| RANK | CITY | OVERALL SCORE |
|------|-------------------------------|---------------|
| 1 | Zurich (Switzerland) | 71.0 |
| 2 | Stockholm (Sweden) | 68.2 |
| 3 | Oslo (Norway) | 68.1 |
| 4 | Copenhagen (Denmark) | 67.1 |
| 5 | Helsinki (Finland) | 66.8 |
| 6 | Washington DC (United States) | 66.5 |
| 7 | Dublin (Ireland) | 66.1 |
| 8 | San Francisco (United States) | 63.4 |
| 9 | Paris (France) | 63.2 |
| 10 | Brussels (Belgium) | 62.7 |
| 11 | Amsterdam (Netherlands) | 61.6 |
| 12 | Tokyo (Japan) | 60.2 |
| 13 | Los Angeles (United States) | 59.8 |
| 14 | London (United Kingdom) | 59.6 |
| 15 | Vienna (Austria) | 59.5 |
| 16 | Luxembourg (Luxembourg) | 59.4 |
| 17 | Boston (United States) | 58.6 |
| 18 | Seoul (Korea, Rep.) | 57.8 |
| 19 | Lisbon (Portugal) | 57.0 |
| 20 | Sydney (Australia) | 56.9 |
| 21 | Chicago (United States) | 56.8 |
| 22 | Madrid (Spain) | 56.8 |
| 23 | Gothenburg (Sweden) | 56.3 |
| 24 | Ottawa (Canada) | 55.4 |
| 25 | Prague (Czech Rep.) | 55.2 |
| 26 | New York (United States) | 55.0 |
| 27 | The Hague (Netherlands) | 54.9 |
| 28 | Athens (Greece) | 53.9 |
| 29 | Berlin (Germany) | 53.6 |
| 30 | Barcelona (Spain) | 53.5 |
| 31 | Eindhoven (Netherlands) | 53.5 |
| 32 | Bilbao (Spain) | 53.0 |
| 33 | Singapore (Singapore) | 52.7 |
| 34 | Rotterdam (Netherlands) | 51.4 |
| 35 | Buenos Aires (Argentina) | 50.9 |
| 36 | Cardiff (United Kingdom) | 50.0 |
| 37 | Kiel (Germany) | 49.4 |
| 38 | Birmingham (United Kingdom) | 49.3 |
| 39 | Warsaw (Poland) | 48.1 |
| 40 | Hanover (Germany) | 48.0 |
| 41 | Budapest (Hungary) | 47.9 |
| 42 | Zaragoza (Spain) | 47.6 |
| 43 | Tallinn (Estonia) | 46.9 |
| 44 | Vilnius (Lithuania) | 46.7 |
| 45 | Nantes (France) | 46.1 |

(continued on next page)

Table 1 (continued)

Global City Talent Competitiveness Index rankings and overall scores

| RANK | CITY | OVERALL SCORE |
|------|---|---------------|
| 46 | <i>Auckland (New Zealand)</i> | 46.0 |
| 47 | Bologna (Italy) | 45.8 |
| 48 | Bratislava (Slovakia) | 45.8 |
| 49 | Ljubljana (Slovenia) | 45.7 |
| 50 | Rome (Italy) | 44.3 |
| 51 | Brno (Czech Rep.) | 44.2 |
| 52 | Turin (Italy) | 44.0 |
| 53 | Milan (Italy) | 43.0 |
| 54 | <i>Abu Dhabi (United Arab Emirates)</i> | 42.9 |
| 55 | <i>Beijing (China)</i> | 42.3 |
| 56 | Riga (Latvia) | 41.3 |
| 57 | <i>Doha (Qatar)</i> | 40.9 |
| 58 | Zagreb (Croatia) | 40.5 |
| 59 | Krakow (Poland) | 40.4 |
| 60 | <i>Mexico City (Mexico)</i> | 40.0 |
| 61 | <i>Sao Paulo (Brazil)</i> | 39.9 |
| 62 | <i>Istanbul (Turkey)</i> | 39.7 |
| 63 | <i>Sofia (Bulgaria)</i> | 39.4 |
| 64 | Belgrade (Serbia) | 39.4 |
| 65 | <i>Dubai (United Arab Emirates)</i> | 39.3 |
| 66 | <i>Hangzhou (China)</i> | 38.1 |
| 67 | <i>Kuala Lumpur (Malaysia)</i> | 37.9 |
| 68 | Bucharest (Romania) | 37.2 |
| 69 | <i>Santiago (Chile)</i> | 36.5 |
| 70 | <i>Shanghai (China)</i> | 35.6 |
| 71 | <i>Tunis (Tunisia)</i> | 35.1 |
| 72 | <i>Montevideo (Uruguay)</i> | 35.0 |
| 73 | <i>Shenzhen (China)</i> | 34.7 |
| 74 | <i>Rio de Janeiro (Brazil)</i> | 34.7 |
| 75 | <i>Bogota (Colombia)</i> | 34.3 |
| 76 | <i>Lima (Peru)</i> | 34.1 |
| 77 | <i>Guangzhou (China)</i> | 33.9 |
| 78 | <i>Bangkok (Thailand)</i> | 33.8 |
| 79 | <i>Johannesburg (South Africa)</i> | 33.0 |
| 80 | <i>Quito (Ecuador)</i> | 32.0 |
| 81 | Valletta (Malta) | 30.8 |
| 82 | <i>Brasilia (Brazil)</i> | 29.5 |
| 83 | <i>Tianjin (China)</i> | 27.3 |
| 84 | <i>Cairo (Egypt)</i> | 26.3 |
| 85 | <i>Hanoi (Viet Nam)</i> | 25.7 |
| 86 | <i>Casablanca (Morocco)</i> | 23.8 |
| 87 | <i>Nairobi (Kenya)</i> | 23.6 |
| 88 | <i>Kuwait City (Kuwait)</i> | 21.7 |
| 89 | <i>Mumbai (India)</i> | 15.5 |
| 90 | <i>Delhi (India)</i> | 14.9 |

Note: Non-European cities are italicised.

higher GDP levels will over time naturally lead to higher technology penetration rates and a better quality of education and healthcare. Many of these complementary developments will take the form of virtuous cycles, such as higher-ranked universities attracting a higher calibre of teaching and research staff and producing graduates whose quality and skills will in turn be demanded and rewarded in the marketplace. This observation is confirmed this year, although examples exist of some cities ranking high on a particular pillar (e.g., Singapore is the world champion of 'talent growth') while failing to turn this advantage into a similar overall ranking on GCTCI.

Overall Low Performers Are Not without Ammunition in the Market for Talent

A comparison across the five pillars of the GCTCI model shows that only seven cities rank in the top 10 of three pillars out of five: namely Zurich (in pillars 1, 2, and 5), Oslo (in pillars 2, 3, and 5), Copenhagen (in pillars 1, 2, and 3), Washington DC (in pillars 2, 4, and 5), Dublin (in pillars 1, 2, and 5), San Francisco (in pillars 1, 3, and 5), and Luxembourg (in pillars 1, 2, and 5). Lower-ranking cities can also build specific advantages around their relatively low cost living—as exemplified in pillar 4 (Retain), in which cities such as Athens and Lisbon fare better than most of their European rivals, for example. Similarly, cities with high densities of information networks (such as Singapore, Dubai, Abu Dhabi, and Doha) have strong arguments to attract talents. It is likely that a different (and closer) look at the performance of smart cities would provide a significantly (and complementary) picture of the GCTCI in this respect. Such an exercise would certainly be worth undertaking.

Pillar-Level Analyses Create Ample Room for Strategy and Planning

In the race for talents, each of the cities included in the GCTCI have very valuable cards to play. Local policies and strategies, combined with the energy with which local leaders and local communities will strive to make their cities known on the world scene, will continue to play a critical role in this respect. As underlined last year, metropolises (defined as cities with more than 1 million people) will continue to enjoy 'natural advantages' linked to the historical presence of key business players (e.g., the City in London, the studios of Los Angeles, Silicon Valley), large universities (in US and UK cities for example), or cultural and touristic landmarks (Paris), but the strong presence of middle-sized cities (typically of a few hundred thousand people) in the GCTCI also demonstrates that agility, innovation, and the appropriate mix of originality and authenticity are a good recipe for being talent competitive on the global scene. Moreover, the dynamism displayed by emerging cities to rival the advantages of established hubs through the creation of active cultural scenes (exemplified by the opening of the Guggenheim museum in Bilbao, or more recently of the Louvre Abu Dhabi) will clearly combine with other efforts to change urban landscapes, develop smart cities, and

Table 2

Top 10 city rankings and scores, by GCTCI pillar

Pillar 1: Enable

| RANK | CITY | SCORE |
|------|---------------|-------|
| 1 | Dublin | 90.2 |
| 2 | Stockholm | 77.1 |
| 3 | Zurich | 72.8 |
| 4 | Luxembourg | 72.5 |
| 5 | Seoul | 70.1 |
| 6 | Paris | 68.6 |
| 7 | Copenhagen | 63.6 |
| 8 | Helsinki | 61.7 |
| 9 | San Francisco | 60.9 |
| 10 | Boston | 60.3 |

Pillar 2: Attract

| RANK | CITY | SCORE |
|------|---------------|-------|
| 1 | Washington DC | 89.1 |
| 2 | Oslo | 87.5 |
| 3 | Zurich | 84.5 |
| 4 | Dublin | 80.3 |
| 5 | Amsterdam | 78.5 |
| 6 | Luxembourg | 77.9 |
| 7 | London | 77.3 |
| 8 | Tokyo | 76.9 |
| 9 | Stockholm | 76.8 |
| 10 | Copenhagen | 75.8 |

Pillar 3: Grow

| RANK | CITY | SCORE |
|------|---------------|-------|
| 1 | Singapore | 77.1 |
| 2 | Oslo | 75.7 |
| 3 | Copenhagen | 74.6 |
| 4 | Boston | 73.9 |
| 4 | Chicago | 73.9 |
| 4 | Los Angeles | 73.9 |
| 4 | New York | 73.9 |
| 4 | San Francisco | 73.9 |
| 9 | Brussels | 73.3 |
| 10 | Seoul | 73.0 |

Pillar 4: Retain

| RANK | CITY | SCORE |
|------|---------------|-------|
| 1 | Athens | 87.4 |
| 2 | Vienna | 82.0 |
| 3 | Prague | 81.3 |
| 4 | Tunis | 81.2 |
| 5 | Cairo | 80.7 |
| 6 | Zaragoza | 80.5 |
| 7 | Montevideo | 79.1 |
| 8 | Lisbon | 77.7 |
| 9 | Washington DC | 76.2 |
| 10 | Bucharest | 76.1 |

Pillar 5: Be Global

| RANK | CITY | SCORE |
|------|---------------|-------|
| 1 | Washington DC | 69.5 |
| 2 | Zurich | 61.1 |
| 3 | San Francisco | 60.7 |
| 4 | Luxembourg | 59.9 |
| 5 | Oslo | 59.0 |
| 6 | Helsinki | 53.6 |
| 7 | Brussels | 53.0 |
| 8 | Amsterdam | 52.8 |
| 9 | Paris | 52.8 |
| 10 | Dublin | 50.7 |

provide both a high quality of life and development opportunities for workers as well as for their families.

THREE CASE STUDIES ON CITIES AND DIVERSITY: ADDING CONTEXT TO THE GCTCI DATA

To illustrate how diversity is considered, stimulated, and managed at city level, three case studies (Eindhoven, Copenhagen, and Bilbao) look at the history and recent orientations of their specific strategies and approaches in this respect.⁵

Diversity Drives Innovation: The Experience of Brainport Eindhoven

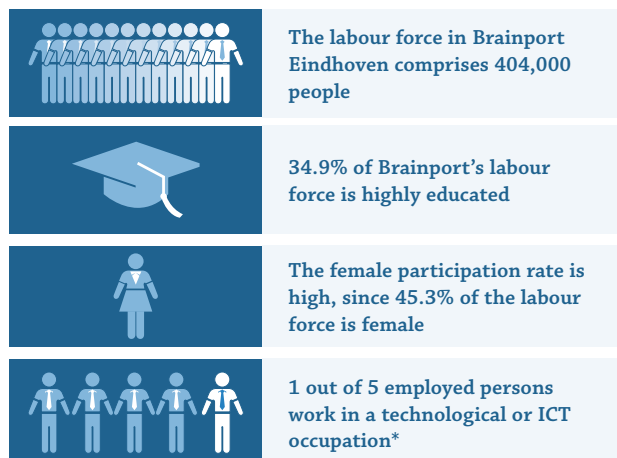
Brainport Eindhoven defines itself as 'a world-class high tech hotspot in the south of the Netherlands . . . [with] exceptional innovative strength, the world's highest patent density per capita and above average private R&D expenditure'.⁶ Because of shortages in high-tech and information technology (IT) talent available in the Dutch labour market, the number of international knowledge workers has shown a steep increase in Eindhoven's city and region over the last few years. In that context, diversity has proven

to be both a necessity and a strength, as well as an engine behind companies' innovation power.

Diversity in Eindhoven: Historical and Economic Background

Brainport Eindhoven has long been seen as a leader in innovation,⁷ as it is the region with the highest patent application rate and the highest number of patents in Europe: 42% of all patents in the Netherlands are filed in Brainport.⁸ As a consequence, Brainport Eindhoven has helped define and represent Dutch international competitiveness and the country's innovative strength for years. It has received many prestigious international awards for its inventiveness and unique form of collaboration. In and around Eindhoven, path-breaking technologies have been developed; the region excels at inventing, developing, and integrating high-tech machines, systems, and system parts of utmost precision and accuracy and is known for its integral and multi-disciplinary way of working. Jobs in IT and technology in Brainport are numerous. To fill the many vacancies, the region has been attracting talent from abroad for over 10 years now. It therefore has a fast-growing and thriving international workforce.

Figure 5

Talent pool of highly skilled workers: Brainport Eindhoven

* In total there are 67,000 people working in tech and 17,000 people in ICT. A relatively high proportion of the people in Brainport Eindhoven has a technology or IT job. Source: Compiled from data provided by the Dutch Central Bureau of Statistics (<https://www.cbs.nl/en-gb>).

Brainport Eindhoven has a highly educated and multilingual labour force that comprises 404,000 people, both of Dutch and foreign origin (out of a population of 761,763). Almost 35% of the labour force is highly educated, the labour participation of women—compared with that of other European countries—is high (45.3%), and one out of five persons has a job in technology or information and communication technology (ICT). In 2016 the region counted a total of 44,847 people with a foreign nationality, almost 65% of whom originated from Europe (28,512) and almost 20% from Asia (8,432) (see Figure 5).

Eindhoven's Multi-Disciplinary Approach to 'Diversity for Innovation'

For Brainport Eindhoven, the diversity imperative is not just about attracting talent: it also requires mobilising local players across the local ecosystems.

As underlined earlier, attracting international talent for Brainport Eindhoven is both a necessity and an important factor for the region's success and innovative strength. Over the last few years the region has shown a rapidly rising economic growth, and it is headed for 3.6% growth in 2017.⁹ Local shortages for skilled IT and technology professionals have been considerable for years and keep increasing. That is why international talent attraction is one of the main points of focus of the region and of its high-tech small and medium-sized enterprises and large multinational companies. The shortage, however, is not the only reason for attracting talent from abroad: diversity of all kinds is seen as the motor behind innovation.

Besides the fact that attracting talent from abroad is necessary for filling vacancies, stimulating diversity is crucial for the region's inventiveness. Migrated scientists, engineers, and highly skilled professionals contribute directly to process and product

innovation. Although there is a sense of satisfaction when everyone agrees, there is much more to be said for a diversity of thought and constructive conflict. Diversity in nationality, gender, and discipline drives innovation and creativity in all aspects and in all types of businesses—from small start-ups to multinational companies.

An interesting example of the required multi-disciplinary approach can be found at Holst Centre, an independent research and development (R&D) centre in Eindhoven that develops technologies for wireless autonomous sensor technologies and flexible electronics. Its workforce includes 30 nationalities. Besides their different cultural backgrounds, they work in a wide variety of technology domains. This allows people from different backgrounds to interact on various topics from different angles. This multi-disciplinary character triggers team members to look further than strictly their own domain and their own perception.

Handling Diversity on the Ground

At the operational level, the experience of Brainport Eindhoven has been linked strongly to the industrial and innovation dynamics of the region. It boils down to four key ingredients, namely (1) an understanding of different cultures, (2) an ability to ensure a high quality of life, (3) a willingness to adapt the local education system, and (4) an ability to build knowledge about multicultural societies and organisations. Various local examples illustrate how those priorities are addressed concretely.

- **A need to understand different cultures.** The world's leading chip-making equipment manufacturer ASML needs its teams to be mixed. The company, headquartered in Veldhoven, employs almost 10,000 workers of 90 different nationalities. ASML works on highly complex technical problems and its team managers want to work with teams that are as diverse as possible in order to have the problems looked at from as many angles as possible. Moreover, ASML simply is an international company. It operates on a global scale and therefore needs employees who understand the cultures of the markets in which ASML operates and of the suppliers and customers with whom it works.
- **Ensuring a high quality of life.** Besides attracting talent, the region's focus is on retaining talents by making them feel at home in Brainport Eindhoven. Quality of life in the Netherlands in general is good,¹⁰ the work-life balance and healthcare system are excellent,¹¹ and Eindhoven offers a very competitive cost of living.¹² To make sure international workers find their way, extra attention is paid to making it easy for them to join sports clubs and international networks, and for their spouses to study or find a job. The educational system does not only offer the international community an excellent international school, but also easily accessible regular education.

- International skills as an integral part of education.** Cultural diversity is a current topic in education. As the world—and the Eindhoven region in particular—is rapidly becoming more and more international, going about diversity is high on the agenda of primary and secondary schools, schools for vocational education, and universities in the Eindhoven region. They have recently embraced a vision of education entitled ‘We are the future’. This vision states that international skills need to be an integral part of the school’s curricula within the next five years. The economic development agency, Brainport Development, coordinates the vision’s implementation.
- Learning how to live and cooperate in a multicultural society.** These international skills concern not only learning (and teaching) English to four-year-olds but are also aimed at embracing the riches of cultural diversity. To be able to live together and cooperate in a multicultural society and work environment, a mutual understanding among cultures is required. Moreover, the future generation faces cross-border challenges such as climate change and refugees coming to Europe. People who learn to look at these problems from a variety of perspectives are more capable of understanding and solving these challenges.

The Brainport Eindhoven region considers that stimulating cultural diversity, and diversity in general, are of utmost importance for nurturing the region’s innovative strength in the years to come. Therefore it is important not only to keep on attracting international talent but also to ensure that diversity is used optimally by preparing the next generation of Brainport inhabitants for life in a multicultural and fast-changing society. As is often said in Eindhoven, *‘tomorrow starts today’*.

Mangfoldighed: How Copenhagen Lives and Drives Diversity

‘Mangfoldighed’ is Danish for ‘diversity’: Danes often use the word to express equality, openness, and likeness between cultures and races, and to promote a mindset within which there is room for everyone. Of course, the degree of diversity expressed differs between Danish cities. Copenhagen has established very high standards in this regard, to the point where it is often referred to as a leading example of an international, open-minded, and diverse city. This is a result of both history and strategy.

Cultural Diversity in Copenhagen’s History

Historically, diversity in Denmark stems primarily from Copenhagen as an international seaport and the country’s key connection to the world since the 18th century. In 2011, building on that heritage, a Copenhagen Diversity Charter was launched. It quickly stimulated similar efforts in the second and third most international cities of Denmark (Aarhus and Odense), which adopted diversity charters of their own. In 2014, a national Danish Diversity Charter was adopted, which unified several regional and local

charters in Denmark—focusing within the areas of labour markets, inclusion, countering discrimination, demographic change, and so on.¹³

The population of Copenhagen has been increasing steadily since the 1800s in number (from 100,000 to its current size of 1,300,000) and in diversity.¹⁴ Copenhagen needed to attract professionals, both from the other parts of the Danish Kingdom and from abroad. Research shows that, around the 19th century, immigrants mostly came from Germany and Poland.¹⁵ Later on, the war period brought many Jewish and Eastern European people. Although Danish people were migrating abroad too, the same trend of increasing immigrants prevailed through the 20th century until the oil crisis hit in the mid-1970s—when more restrictive policies came out towards the immigrants. Nevertheless, a great many immigrants came to Denmark during the 1980s and 1990s as a result of rising conflicts and wars around the world. Being part of the European Union and the Schengen area, Denmark saw a gradual increase in its number of EU citizens. Today it appears that the country’s major migrant groups are of European and Asian origin, together totalling 12% of the population of the capital region (Copenhagen).¹⁶

How Copenhagen Approaches Diversity: A Few Examples

It is important to note that diversity lies not only in the gender, age, or ethnicity of a population. The way Copenhagen is approaching diversity is unique because in that city diversity is understood as a source for growth and innovation. The origins of this understanding lie within the rise of globalisation, technology, and innovation. Companies, as well as cities, must compete in different international and global markets where diversity is also considered to be a competitive advantage. One of the great examples of Copenhagen’s method of dealing with different companies and helping them to become more diverse is the Copenhagen Business Centre,¹⁷ which focuses on growth generated via diversity. It encourages companies in Copenhagen to emphasise personnel policies and strategies that support diversity, with a focus on well-being and talent development. Another organisation—Copenhagen Capacity¹⁸—focuses on investment promotion, but part of the organisation is also working with talent attraction and management as a result of Denmark’s need for highly skilled foreign talent, especially when it comes to IT and engineering jobs.¹⁹

With the acceleration of the global competition for growth and innovation, talent management becomes of major importance. But to attract the right talents, many organisations must participate. For example, Wonderful Copenhagen²⁰—which focuses on city attractiveness and branding—has had a major influence in making the city a prime destination. Wide-ranging projects that help to promote Denmark and Copenhagen as a big career playing field also raise its appeal as a global talent or investment destination. One of those projects, a collaboration between Copenhagen and three other Nordic cities (Gothenburg in Sweden, Kristiansand in Norway, and Reykjavik in Iceland),

is called Nordic Talent Ambassador.²¹ The programme's goal is to identify international professionals living in the Nordic countries and assist them to become 'collective ambassadors' of the Nordic countries abroad. The programme is built on top of and as a supplement to the Danish Youth Goodwill Ambassadors Programme, which seeks to retain the foreign talents who are already studying in Denmark.²²

To be an attractive location for international workers, talent management cooperation is needed between various stakeholders—including business, civil society/nongovernmental organisations, public bodies, and academia. The orchestration of such different stakeholders can not only help companies to grow, but can also boost growth on a local, regional, national, and even international level by increasing diversity in competences, experiences, and nationalities.²³ To ensure that this process is working effectively, policies and regulations must be supportive of enabling such prospective growth. It is also important to consider the political environment, since in many cities of the world policies are influenced by national political debate. Furthermore, the rise of the nationalism across the globe often brings negative notions about diversity. This growing sentiment has not left Denmark unmarked: more restrictive policies for immigration have recently been introduced. So far, however, it has been observed that Copenhagen proceeds differently than other cities and continues to see diversity as a fundamental part of growth and innovation. Great collaboration between the stakeholders strengthens the pursuit of remaining a competitive, diverse, and thriving city.

The Bilbao Experience: Best Practices Related to Diversity and Talent

The city of Bilbao is becoming one of the emerging talent hubs in Europe. In the GCTCI, it ranked particularly high on the Retain pillar, owing to its high indicators on the standard of living and the health system, among others. Another key strength derives from its capability to build global knowledge, leveraging its high level of tertiary-educated population and workforce. Formal recognitions, such as the best European City of the year 2018,²⁴ confirm the great effort that is being made to make the city a destination point.

However, the current demographic situation²⁵—together with a relatively low immigration rate²⁶—makes urgent the challenge and need for working on innovative talent attraction strategies in the Basque Country.²⁷

Within this bilingual society, 33.9% of the population are active speakers of the Basque language.²⁸ Religion is not a critical issue any longer (85% of marriages are civil weddings), and nowadays Bilbao could also be described as one of the most open-minded places in the world because of its acceptance of plurality (sexual, political, social, etc.). It is worth mentioning the importance that Basque society places on preserving its own traditions and culture, especially its language (which is the oldest in Europe).

The question to be answered is how should a city or a region find a balance between its most precious identity and an urgently needed and inevitable diversity? How could finding this balance point towards the improvement of regional talent competitiveness?

The 'Be Basque' Strategy

A possible answer to that question was offered by the Be Basque initiative. The 'Bilbao Bizkaia, Be Basque' brand was launched in 2013 by the City Council of Bilbao, the Country Council of Biscay, and the Basque government. Its main objective is to promote a positive, coherent, and stable image of the territory—within the framework of a comprehensive strategy that is key for attracting visitors, investments, events, and talent. This is meant to be an invitation to join one of the oldest but most innovative nodes of southern Europe—that is, to feel part of and be proud of an authentic place. The concept also claims the capability to innovate even in complex and hazardous situations.

The Be Basque motto is used by some programmes focused on attracting, retaining, or even connecting international talent to the region. One example is the Be Basque Talent Network, an online platform that has more than 9,000 highly qualified professionals operating in more than 90 countries. As a result of the combination of the Be Basque message and an active dissemination of career opportunities, almost half are not Basque-born.²⁹ They are typically professionals who would like to be professionally connected with other specialists worldwide and with Basque organisations.³⁰

However, when dealing with diversity, numbers are not the only thing on which one ought to focus. Qualitative actions are at least as important as quantitative data. This is especially evident in situations such as the one at issue here, where the need to attract international talent has positioned the region in a relatively novel situation. In this regard, the Be Basque Dual Career Centre was founded in 2015 with the firm intention of, first, being a negotiating asset for Basque organisations competing to hire the best talent (offering professional opportunities to a worker's spouse can often make the difference); and, second, helping newly hired workers integrate themselves into their new labour environment and lifestyle.

The Be Basque Dual Career Centre was the first centre of this kind in Spain. Unlike similar other European initiatives, it operates along three axes: job search, entrepreneurship, and voluntarism. In addition to that triple focus, the centre—promoted by Bizkaia Talent³¹—is backed up by the collaboration of several social and labour regional stakeholders that actively contribute to the aforementioned axes as appropriate to their scope of activity.³²

Moreover, meetings and leisure activities are organised for the international community—both foreign-born professionals and returnees—by Bizkaia Talent itself or jointly with other local organisations. These activities are intended to foster a multicultural and cross-sectoral environment based on interpersonal and professional experience that helps participants to integrate

socially, and also encourages local residents to see diversity as adding value to the city.

Leveraging a Diverse Local Workforce: Two Telling Examples

Nevertheless, talent attraction is not the only field where there is room to manoeuvre regarding diversity. Cities and regions must pay special attention to how they deploy their wide-ranging local workforce.

Initiatives such as Talentia Challenge and business model proposals such as Urbegi Group's provide a hint about where resources should be directed.

- The latter example is a project of high social commitment. Urbegi Group provides competitive solutions, principally in the environmental and industrial fields; through that path, it generates equitable job opportunities for people with disabilities or people in situations of vulnerability—integrating them into regular labour markets—and supports collaborations across the public, private, and academic spheres.
- For its part, Talentia Challenge—a five-month programme where university graduates deal with a real challenge faced by Basque organisations in interdisciplinary work teams—not only demonstrates how rewarding it is to collaborate with people with other professional profiles, but also how young people can provide valuable solutions to experienced professionals working at benchmark companies.

All in all, the Bilbao area is discovering its own way to compete for the best talent among the different cities and regions worldwide, looking for the best approaches to value its differentiated identity, leveraging the duality 'South of the North, North of the South'—which not only refers to its geographical location in Europe but also to the balance it seeks and promotes between the lifestyle of the south and the industrial mindset, high social protection, and low inequality that are generally attributed to the north.³³ This invites every highly skilled professional to join in with a deep and sincere *'You Be Basque too'* wherever he or she comes from.

CONCLUSIONS AND KEY MESSAGES

Some of the main findings that emerge from last year's first attempt to build a Global City Talent Competitiveness Index have been reinforced (or at least confirmed) by this year's improved and broadened approach. Additional messages also result from the data, as well as from the specific actions taken at the local level from the diversity perspective.

European (particularly Scandinavian) Cities Continue to Dominate the Rankings

Even if one needs to acknowledge the high proportion of European cities in the sample included in this year's edition of GCTCI (47 out of 90), it remains that a large number of the best practices registered in terms of talent attraction, as well as of other related aspects of talent competitiveness, can still be found among those cities, and in particular in Nordic cities. High quality of life and reliable local services and connectivity, allied to deliberate efforts to advertise and brand cities on 'authenticity' (culture, history), has generated solid comparative advantages for those cities.

Municipal Leadership and Local Engagement Make a Difference

The energy deployed by mayors and municipal teams, as well as by the organisations with which they chose to work, have characterised the efforts made by some of the high performers of the GCTCI. Such leadership has often been visible enough to entice entire communities to combine forces to project a positive and attractive image of their respective cities.

Cities Are 'Perfect Labs' to Promote Diversity

The experience of cities of different sizes and cultures shows how much diversity can contribute to innovation. In a city context, however, innovation can be seen beyond the sole context of technological innovation: cities have a unique ability to leverage agility and proximity to test, fine-tune, and implement innovations in social relations, and even policies and governance. In many cases, promoting diversity has led to significant advances in various cities around the world, especially from the point of view of inclusion. Concepts such as *'inclusive prosperity'* or *'innovation through diversity'* take on a different connotation, and a higher level of actionability when brought to the city level.

The 'Future of Work' Context Calls for Different Strategies at the City Level

As underlined already in the GTCI 2017, labour markets are moving towards a continuous reduction of the proportion of salaried workers as opposed to 'free agents'. Future generations will work and live in environments in which having many employers in a lifetime (and often several employers at the same time) will be the norm rather than the exception. In such a context, it will not be enough for cities to attract one major company or employer to be talent competitive; they will also need to provide an environment in which talent can find multiple employment opportunities at any point in time. This requires building a critical mass and diversity by attracting as many potential employers as possible. It also requires specific efforts to provide local opportunities to those talents who seek upskilling and reskilling opportunities.

Smart Cities Will Usher In New Ways of Competing for Talent

A number of new services are being deployed in places where connectivity and information infrastructure allow it. This is reflected in the current GCTCI model (e.g., through variable 1.2, ICT access). However, this model does not do justice to the other dimensions of smart cities, which include, for example, improved urban architecture, transport services, and sanitation and waste management, and better energy grids. It is likely that the emergence of smart cities will contribute to changing the geography of talent hubs. Specific efforts should therefore be deployed to better track the development of smart cities, and to assess their role (current and future) in changing the dynamics of global talent competition.

ENDNOTES

- 1 Lanvin & Evans (2016), p. 99.
- 2 A complete list of sources is provided as an annex to the present special section.
- 3 As underlined in the GTCI 2017, the definition of what constitutes a city is obviously a critical element here. For example, Vienna is defined here as a region more than as a city *stricto sensu*. Similarly, San Francisco can be described in different ways. In 2017, the US Census Bureau defined 'the City and County of San Francisco' as an entity with a population of 871,000, whereas Silicon Valley alone (the southern portion of the San Francisco Bay Area) has some 3 million inhabitants. Some analysts would hence consider the 5-county entity covering San Francisco–Oakland–Hayward Metropolitan Statistical Area (MSA) to include core areas more directly economically influenced by San Francisco rather than other nearby cities such as San Jose, which has its own MSA, (the San Jose–Sunnyvale–Santa Clara MSA; population 4.7 million).

Other definitions would include the 9-county San Francisco Bay Area (7.6 million inhabitants), or even the 12-county San Jose–San Francisco–Oakland combined statistical area (8.7 million inhabitants). For this version of the GCTCI, the US Census Bureau definition (871,000 inhabitants) has been used.
- 4 See the GTCI 2017, p. 108 (Lanvin & Evans, 2016).
- 5 This section is built around the valuable inputs provided by Richard Kerste (Project Manager at Brainport Development) and Yvonne van Hest (Programme Director at Brainport Development); Nikolaj Lubanski (Director of Talent Attraction, Copenhagen Capacity) and Silvestra Valciukaite (Project Assistant, Copenhagen Capacity); and Carmen Mendez de Castro (Be Basque Dual Career Centre at Bizkaia Talent, Bilbao), Leire Lagunilla Ramos, (Be Basque Talent Conferences at Bizkaia Talent, Bilbao), and Ivan Jimenez Aira (Managing Director at Bizkaia Talent, Bilbao).
- 6 See <https://www.brainport.nl/en/brainport-traineeship-program> for more information about Brainport.
- 7 It is important to note that this case study refers to 'Brainport Eindhoven', which is different from the 'city of Eindhoven' considered in this year's GCTCI rankings (see above).
- 8 Eurostat (2011), available at <http://ec.europa.eu/eurostat/data/database>, accessed November 2017.
- 9 IMF (2017).
- 10 IMD World Competitiveness Online (2016).
- 11 See EHCI (2016) and OECD (2017), accessed November 2017.
- 12 Numbeo (2016), cost of living index rates, https://www.numbeo.com/cost-of-living/rankings_current.jsp, accessed November 2017.
- 13 For information about the Danish Diversity Charter, see http://ec.europa.eu/justice/discrimination/diversity/charters/denmark_en.htm
- 14 Data from the Danish Statistics Bank, Danmarks Statistik, available at www.statistikbanken.dk, accessed 10 October 2017.
- 15 Penninx (2008).
- 16 These data are from the Danish Statistic Bank, Danmarks Statistik, available at <http://statistikbanken.dk/statbank5a/default.asp?w=1366>, accessed 26 November 2017.
- 17 See <https://international.kk.dk/business> for details about the Copenhagen Business Centre.
- 18 For further information about Copenhagen Capacity, see <http://www.copcap.com/>
- 19 Dansk Industri (2016).
- 20 Details about Wonderful Copenhagen can be found at <http://www.visitcopenhagen.com/wonderful-copenhagen/copenhagen/who-we-are>
- 21 Information about the Nordic Talent Ambassador programme is available at <http://www.risingnorth.org/funded-projects/2017/9/8/nordic-talent-ambassador>
- 22 Information about the Youth Goodwill Ambassadors Programme can be found at <http://ygadenmark.org/>
- 23 Andersson et al. (2016, pp. 30–33).
- 24 Bilbao was named European City of the Year at the 2018 Urbanism Awards given out by the Academy of Urbanism. The Academy judges a number of social, economic, and environmental factors, including good governance and commercial success.

Judges praised the Basque city for having transformed itself from the post-industrial economic doldrums of the 1990s through investment in culture, bold leadership, and the clever use of economic policies.
- 25 In the coming years, the Basque Country is expected to face a loss of 200,000 working-age people owing to demographic changes, including retirements, which will represent 10% to 15% of its workforce. See Lagunilla & Jimenez (2016).
- 26 The immigration rate in the Basque Country is only 8.6% (see Ikuspegi – Basque Immigration Observatory, 2016, available at http://test.ikuspegi-immigracion.net/es/index_english.php).
- 27 Bilbao is the largest city in the Basque Country; its metropolitan area has roughly 1 million inhabitants. It is important to note that this definition is not the one used above in the GCTCI rankings, which considered the Bilbao city to have 345,000 inhabitants.
- 28 Data from the VI Encuesta Sociolingüística: Comunidad Autónoma de Euskadi VI Sociolinguistic Survey: Basque Autonomous Community, 2016.
- 29 Be Basque Talent Conferences & Meetings are part of those networking and dissemination activities. These events are supported by Basque organisations in the public, private, and academic spheres. They generate business, scientific, and technological networking, which not only promotes mobility and talent flow but also backs economic growth in the Basque region.
- 30 Apart from highly qualified professionals, more than 250 Basque organisations are also part of the Be Basque Talent Network.
- 31 Bizkaia Talent is a private non-profit organisation that, as of 2005, has been carrying out intense work with the support of the Provincial Council of Bizkaia, the Basque universities and technology centres, and some leading companies in the surrounding area. Its main goal is to turn Bilbao/Bizkaia/Basque Country into a talent hub at the international level. Therefore it offers companies as well as professionals a comprehensive service on talent mobility matters.
- 32 Eighteen organisations within the public, private, and academic spheres are part of this network promoted by Bizkaia Talent. They contribute with their know-how, resources, and/or services in one or several of the axes around which the Be Basque Dual Career Center hinges (job search, entrepreneurship, and voluntarism).
- 33 The Basque Country is well positioned in terms of Gini coefficient (Eurostat, 2016).

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Annex 1

Definition and sources of GCTCI variables

| PILLAR | VARIABLE | SOURCE |
|-----------|---|---|
| Enable | 1.1 Gross expenditure on R&D (% of GDP) | Eurostat, OECD, national statistics |
| | 1.2 ICT access (% households with internet access at home) | Eurostat, OECD, national statistics |
| | 1.3 Presence of Forbes Global 2000 companies | Forbes |
| Attract | 2.1 GDP per capita | Eurostat, OECD, Global Metro Monitor |
| | 2.2 Quality of life | UN Habitat, Numbeo |
| | 2.3 Environmental quality | WHO Air Pollution database May 2016 |
| Grow | 3.1 Major universities (%) | Academic Ranking of World Universities (ARWU) |
| | 3.2 Tertiary enrolment (%) | Eurostat, national statistics with GTCI values used as a proxy |
| | 3.3 Individuals in social networks (%) | Eurostat with 'We are social' data used as a proxy |
| Retain | 4.1 Personal safety score | EIU and NEC Safe Cities Index (Personal safety), Numbeo |
| | 4.2 Physician density (physicians per 1000 people) | Eurostat, OECD, national statistics |
| | 4.3 Monthly expenses for four-person family (PPP-adjusted US\$) | Numbeo |
| | 4.4 Rent per month, three-bedroom apartment city centre (PPP-adjusted US\$) | Numbeo |
| Be Global | 5.1 Workforce with tertiary education % | Eurostat with the GTCI and OECD used as a proxy |
| | 5.2 Population with tertiary education (%) | Eurostat, OECD, and UNESCO UIS with GTCI values used as a proxy |
| | 5.3 Airport connectivity (largest airport servicing the city; adjusted by population) | Airports Council International |
| | 5.4 Intergovernmental organisations (number of IGOs adjusted by population) | Yearbook of International Organizations* |

Note: EIU = Economist Intelligence Unit; 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 (in categories 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 | Country | 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 Envi- ronmental quality |
| 1 | Zurich | Switzerland | 71.0 | 49.8 | 90.4 | 78.0 | 57.5 | 100.0 | 95.9 |
| 2 | Stockholm | Sweden | 68.2 | 64.4 | 96.6 | 70.2 | 38.6 | 98.8 | 93.1 |
| 3 | Oslo | Norway | 68.1 | 47.6 | 95.1 | 21.4 | 73.0 | 94.6 | 95.0 |
| 4 | Copenhagen | Denmark | 67.1 | 79.8 | 93.5 | 17.6 | 37.0 | 97.7 | 92.7 |
| 5 | Helsinki | Finland | 66.8 | 64.6 | 93.5 | 27.0 | 30.0 | 93.8 | 96.3 |
| 6 | Washington | United States | 66.5 | 52.5 | 70.4 | 8.4 | 100.0 | 69.6 | 97.7 |
| 7 | Dublin | Ireland | 66.1 | n/a | 87.4 | 93.0 | 49.6 | 93.7 | 97.7 |
| 8 | San Francisco | United States | 63.4 | 74.9 | 78.2 | 29.5 | 34.2 | 87.3 | 97.7 |
| 9 | Paris | France | 63.2 | 48.6 | 85.8 | 71.4 | 32.6 | 95.4 | 92.2 |
| 10 | Brussels | Belgium | 62.7 | 24.7 | 82.7 | 16.8 | 37.6 | 90.7 | 93.1 |
| 11 | Amsterdam | Netherlands | 61.6 | 27.7 | 92.0 | 25.0 | 51.4 | 89.7 | 94.5 |
| 12 | Tokyo | Japan | 60.2 | n/a | 69.2 | 41.6 | 38.9 | 99.7 | 92.2 |
| 13 | Los Angeles | United States | 59.8 | 74.9 | 67.8 | 2.2 | 34.2 | 72.5 | 95.9 |
| 14 | London | United Kingdom | 59.6 | 17.1 | 95.1 | 19.3 | 40.6 | 96.4 | 95.0 |
| 15 | Vienna | Austria | 59.5 | 58.9 | 82.7 | 9.2 | 28.4 | 94.2 | 94.0 |
| 16 | Luxembourg | Luxembourg | 59.4 | 20.8 | 96.6 | 100.0 | 54.4 | 84.4 | 95.0 |
| 17 | Boston | United States | 58.6 | 89.2 | 70.5 | 21.2 | 38.7 | 78.9 | 99.5 |
| 18 | Seoul | Korea, Rep. | 57.8 | 96.3 | 100.0 | 14.1 | 16.2 | 67.4 | 83.9 |
| 19 | Lisbon | Portugal | 57.0 | 25.5 | 73.5 | 15.5 | 13.3 | 93.1 | 98.2 |
| 20 | Sydney | Australia | 56.9 | 36.5 | 78.1 | 12.6 | 28.5 | 92.7 | 100.0 |
| 21 | Chicago | United States | 56.8 | 38.8 | 62.8 | 14.8 | 32.6 | 86.7 | 95.0 |
| 22 | Madrid | Spain | 56.8 | 27.7 | 82.7 | 13.5 | 18.5 | 95.3 | 96.3 |
| 23 | Gothenburg | Sweden | 56.3 | 60.2 | 92.0 | 15.4 | 31.7 | 81.2 | 96.3 |
| 24 | Ottawa | Canada | 55.4 | 33.3 | 76.7 | 0.0 | 23.0 | 86.4 | 100.0 |
| 25 | Prague | Czech Rep. | 55.2 | 47.4 | 87.4 | 2.2 | 18.9 | 96.6 | 92.7 |
| 26 | New York | United States | 55.0 | 24.5 | 70.7 | 19.4 | 39.3 | 62.3 | 97.7 |
| 27 | The Hague | Netherlands | 54.9 | 35.6 | 93.5 | 19.0 | 29.5 | 79.8 | 94.5 |
| 28 | Athens | Greece | 53.9 | 15.2 | 67.3 | 6.3 | 22.3 | 89.6 | 86.7 |
| 29 | Berlin | Germany | 53.6 | 59.1 | 90.4 | 1.6 | 21.0 | 90.1 | 94.0 |
| 30 | Barcelona | Spain | 53.5 | 24.3 | 75.0 | 8.9 | 18.6 | 87.7 | 94.0 |
| 31 | Eindhoven | Netherlands | 53.5 | 45.2 | 96.6 | 10.0 | 24.3 | 94.9 | 94.5 |
| 32 | Bilbao | Spain | 53.0 | 33.9 | 75.0 | 8.3 | 19.7 | 83.8 | 96.3 |
| 33 | Singapore | Singapore | 52.7 | 38.6 | 82.7 | 8.7 | 36.2 | 61.4 | 91.3 |
| 34 | Rotterdam | Netherlands | 51.4 | 35.6 | 96.6 | 3.6 | 29.3 | 76.8 | 94.0 |
| 35 | Buenos Aires | Argentina | 50.9 | 9.9 | 55.6 | 2.8 | 12.1 | 78.4 | 93.1 |
| 36 | Cardiff | United Kingdom | 50.0 | 18.6 | 87.4 | 0.0 | 20.6 | 72.0 | 96.3 |
| 37 | Kiel | Germany | 49.4 | 23.8 | 90.4 | 0.0 | 31.7 | 99.5 | 94.5 |
| 38 | Birmingham | United Kingdom | 49.3 | 29.2 | 84.3 | 0.0 | 20.3 | 82.1 | 96.3 |
| 39 | Warsaw | Poland | 48.1 | 27.9 | 63.1 | 6.5 | 22.1 | 93.1 | 89.9 |
| 40 | Hanover | Germany | 48.0 | 46.9 | 92.0 | 16.1 | 29.0 | n/a | 95.9 |
| 41 | Budapest | Hungary | 47.9 | 29.2 | 82.7 | 3.3 | 13.1 | 89.2 | 91.7 |
| 42 | Zaragoza | Spain | 47.6 | 14.7 | 73.5 | 0.0 | 17.1 | 95.8 | 97.2 |
| 43 | Tallinn | Estonia | 46.9 | 36.0 | 90.4 | 0.0 | 12.8 | 74.7 | 98.6 |
| 44 | Vilnius | Lithuania | 46.7 | 11.7 | 68.4 | 0.0 | 12.3 | 66.1 | 92.7 |
| 45 | Nantes | France | 46.1 | 19.8 | 78.1 | 0.0 | 22.9 | n/a | 96.3 |

| 3. GROW | | | 4. RETAIN | | | | 5. BE GLOBAL | | | |
|------------------------|------------------------|----------------------------|---------------------|------------------------|----------------------|--------------------|---------------------------------------|--|--------------------------|----------------------|
| 3.1 Major universities | 3.2 Tertiary enrolment | 3.3 Use of social networks | 4.1 Personal safety | 4.2 Physicians density | 4.3 Monthly expenses | 4.4 Monthly rental | 5.1 Workforce with tertiary education | 5.2 Population with tertiary education | 5.3 Airport connectivity | 5.4 Presence of IGOs |
| 100.0 | 70.3 | 34.1 | 83.7 | 54.7 | 63.1 | 73.0 | 61.6 | 82.8 | 100.0 | 0.0 |
| 90.0 | 48.2 | 56.5 | 87.9 | 50.7 | 79.5 | 78.9 | 63.4 | 82.0 | 36.0 | 9.4 |
| 80.0 | 72.9 | 74.1 | 59.9 | 56.1 | 61.3 | 76.7 | 71.8 | 88.0 | 56.3 | 19.8 |
| 90.0 | 70.3 | 63.5 | 85.6 | 45.7 | 85.3 | 76.9 | 56.9 | 80.8 | 32.6 | 21.7 |
| 80.0 | 69.1 | 62.4 | 82.6 | 45.8 | 87.8 | 82.4 | 65.6 | 84.4 | 39.4 | 24.9 |
| 40.0 | 60.6 | 61.2 | 84.3 | 97.7 | 68.2 | 54.6 | 59.7 | 96.4 | 26.4 | 95.5 |
| 60.0 | 54.6 | 52.9 | 53.1 | 19.9 | 77.2 | 63.8 | 56.6 | 66.7 | 73.1 | 6.4 |
| 100.0 | 60.6 | 61.2 | 83.7 | 22.8 | 68.7 | 17.4 | 100.0 | 100.0 | 43.0 | 0.0 |
| 90.0 | 51.4 | 31.8 | 77.2 | 39.9 | 70.3 | 67.2 | 66.3 | 75.7 | 42.8 | 26.3 |
| 60.0 | 95.3 | 64.7 | 82.1 | 38.0 | 83.1 | 84.3 | 64.9 | 69.3 | 8.5 | 69.4 |
| 70.0 | 48.8 | 60.0 | 87.4 | 49.0 | 74.3 | 64.9 | 52.6 | 66.9 | 90.1 | 1.7 |
| 100.0 | 44.0 | 43.5 | 91.6 | 29.2 | 68.8 | 77.2 | 62.5 | 82.2 | 12.5 | 1.1 |
| 100.0 | 60.6 | 61.2 | 83.4 | 22.8 | 83.3 | 61.6 | 100.0 | 56.9 | 29.6 | 0.0 |
| 100.0 | 38.2 | 69.4 | 85.5 | 30.4 | 75.2 | 47.1 | 80.6 | 95.4 | 12.4 | 3.6 |
| 60.0 | 57.5 | 45.9 | 84.9 | 76.7 | 85.7 | 80.8 | 54.2 | 60.9 | 18.2 | 20.7 |
| 0.0 | 11.0 | 63.5 | 81.0 | 26.7 | 74.1 | 64.8 | 51.4 | 49.7 | 38.5 | 100.0 |
| 100.0 | 60.6 | 61.2 | 72.2 | 44.4 | 77.9 | 47.4 | 59.7 | 6.6 | 38.4 | 0.0 |
| 70.0 | 67.7 | 81.2 | 85.3 | 20.3 | 51.5 | 62.8 | 55.7 | 74.9 | 8.5 | 0.8 |
| 60.0 | 70.5 | 50.6 | 73.2 | 66.4 | 91.6 | 79.4 | 40.0 | 45.7 | 59.1 | 17.5 |
| 80.0 | 64.0 | 60.0 | 86.5 | 36.8 | 87.6 | 60.5 | 47.4 | 68.5 | 14.4 | 0.2 |
| 100.0 | 60.6 | 61.2 | 82.8 | 24.1 | 85.2 | 64.3 | 59.7 | 63.3 | 20.2 | 0.0 |
| 50.0 | 79.2 | 45.9 | 85.6 | 49.9 | 78.2 | 76.5 | 64.3 | 74.3 | 23.2 | 5.3 |
| 60.0 | 43.1 | 57.6 | 63.2 | 41.4 | 87.1 | 91.1 | 47.6 | 61.1 | 16.7 | 1.6 |
| 50.0 | n/a | 57.6 | 82.6 | 14.0 | 90.5 | 86.3 | 90.5 | 93.8 | 5.1 | 3.9 |
| 50.0 | 46.0 | 37.6 | 77.9 | 91.3 | 76.9 | 78.9 | 55.7 | 67.7 | 14.9 | 1.4 |
| 100.0 | 60.6 | 61.2 | 81.0 | 34.2 | 64.1 | 23.5 | 100.0 | 64.9 | 10.1 | 8.2 |
| 80.0 | 45.9 | 54.1 | 75.0 | 32.6 | 78.2 | 83.1 | 43.5 | 54.3 | 3.2 | 19.9 |
| 40.0 | 87.3 | 41.2 | 69.0 | 99.6 | 80.8 | 100.0 | 53.0 | 57.1 | 9.1 | 1.1 |
| 40.0 | 48.9 | 52.9 | 64.8 | 56.4 | 85.1 | 82.9 | 50.0 | 59.3 | 8.8 | 0.5 |
| 60.0 | 63.4 | 49.4 | 85.3 | 35.4 | 76.7 | 79.3 | 52.1 | 58.3 | 40.0 | 1.6 |
| 50.0 | 43.8 | 51.8 | 81.2 | 21.0 | 87.0 | 86.1 | 39.4 | 49.9 | 24.2 | 0.0 |
| 30.0 | 64.0 | 31.8 | 87.7 | 53.9 | 72.8 | 83.6 | 71.1 | 78.3 | 19.4 | 2.5 |
| 80.0 | n/a | 74.1 | 94.9 | 19.2 | 39.5 | 17.4 | 66.5 | 66.9 | 15.5 | 0.9 |
| 60.0 | 45.9 | 54.1 | 67.9 | 32.6 | 83.3 | 82.7 | 43.5 | 54.3 | 3.1 | 0.0 |
| 60.0 | 58.5 | 65.9 | 68.4 | 31.3 | 78.4 | 92.4 | 19.4 | 22.0 | 4.7 | 2.9 |
| 70.0 | 32.4 | 58.8 | 67.9 | 22.8 | 97.9 | 91.1 | 48.8 | 57.9 | 5.6 | 0.0 |
| 60.0 | 27.9 | 49.4 | 89.4 | 41.0 | n/a | 90.0 | 24.3 | 29.2 | 0.0 | 3.6 |
| 70.0 | 30.7 | 58.8 | 52.4 | 14.0 | 99.2 | 88.7 | 41.4 | 46.1 | 14.9 | 0.0 |
| 30.0 | 82.9 | 29.4 | 76.2 | 24.4 | 66.7 | 76.3 | 53.4 | 57.9 | 10.7 | 2.5 |
| 30.0 | 28.4 | 56.5 | 67.3 | 36.2 | 89.3 | 93.5 | 23.0 | 27.0 | 14.8 | 0.0 |
| 0.0 | 72.6 | 62.4 | 67.4 | 40.2 | 64.2 | 83.2 | 45.8 | 52.1 | 9.5 | 3.0 |
| 0.0 | 55.4 | 41.2 | 99.8 | 39.8 | 83.1 | 99.4 | 47.8 | 53.7 | 0.9 | 0.0 |
| 0.0 | 48.6 | 42.4 | 85.4 | 27.9 | 71.0 | 91.1 | 48.7 | 58.7 | 7.5 | 10.3 |
| 0.0 | 100.0 | 45.9 | 71.1 | 70.0 | 63.0 | 83.7 | 86.4 | 17.6 | 10.4 | 3.3 |
| 50.0 | 37.1 | 24.7 | 74.8 | 25.8 | 100.0 | 94.7 | 42.0 | 45.5 | 20.9 | 0.0 |

(continued on next page)

Annex 2 (continued)

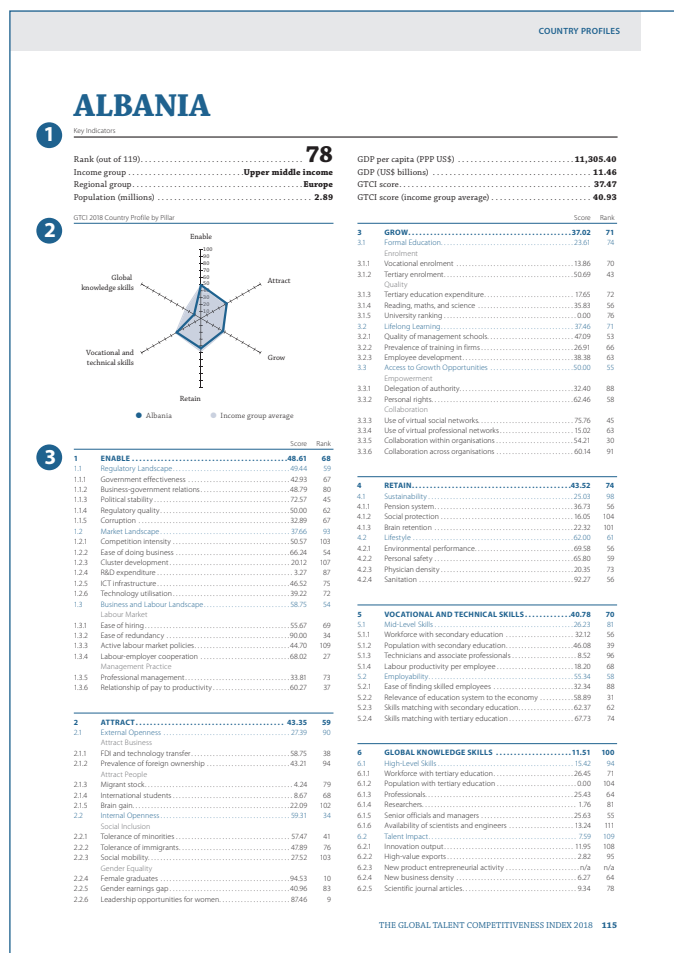
GCTCI cities and rankings: Overall and by variable

| Rank | City | Country | 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 Envi- ronmental quality |
| 46 | Auckland | New Zealand | 46.0 | 20.6 | 78.1 | 0.0 | 25.7 | 73.2 | 98.6 |
| 47 | Bologna | Italy | 45.8 | 28.7 | 73.5 | 7.4 | 27.2 | 61.9 | 93.6 |
| 48 | Bratislava | Slovakia | 45.8 | 24.2 | 78.1 | 0.0 | 20.8 | 67.2 | 92.7 |
| 49 | Ljubljana | Slovenia | 45.7 | 49.3 | 70.4 | 0.0 | 15.3 | 75.6 | 93.6 |
| 50 | Rome | Italy | 44.3 | 26.5 | 70.4 | 7.0 | 24.5 | 39.0 | 92.2 |
| 51 | Brno | Czech Rep. | 44.2 | 48.3 | 71.9 | 0.0 | 9.8 | 72.0 | 93.6 |
| 52 | Turin | Italy | 44.0 | 37.5 | 70.4 | 6.4 | 20.9 | 96.9 | 87.2 |
| 53 | Milan | Italy | 43.0 | 21.6 | 73.5 | 16.9 | 35.8 | 54.2 | 88.1 |
| 54 | Abu Dhabi | United Arab Emirates | 42.9 | 13.9 | 92.4 | 16.6 | 38.3 | 80.3 | 44.5 |
| 55 | Beijing | China | 42.3 | 100.0 | 29.8 | 9.7 | 7.6 | 82.1 | 55.5 |
| 56 | Riga | Latvia | 41.3 | 10.3 | 69.8 | 0.0 | 13.7 | 60.2 | 89.4 |
| 57 | Doha | Qatar | 40.9 | 7.7 | 94.8 | 38.9 | 68.6 | 65.2 | 28.0 |
| 58 | Zagreb | Croatia | 40.5 | 15.9 | 65.8 | 0.0 | 12.2 | 68.8 | 88.5 |
| 59 | Krakow | Poland | 40.4 | 22.5 | 57.6 | 0.0 | 11.9 | 55.6 | 81.7 |
| 60 | Mexico City | Mexico | 40.0 | n/a | 44.0 | 4.0 | 10.4 | 75.2 | 85.8 |
| 61 | Sao Paulo | Brazil | 39.9 | 22.5 | 45.7 | 2.6 | 10.5 | 75.3 | 89.0 |
| 62 | Istanbul | Turkey | 39.7 | n/a | 87.0 | 1.7 | 12.8 | 46.6 | 80.7 |
| 63 | Sofia | Bulgaria | 39.4 | 22.7 | 47.2 | 0.0 | 7.4 | 52.5 | 85.3 |
| 64 | Belgrade | Serbia | 39.4 | 12.4 | 66.5 | 0.0 | 10.9 | 45.6 | 88.1 |
| 65 | Dubai | United Arab Emirates | 39.3 | 13.9 | 92.4 | 8.2 | 12.8 | 69.5 | 105.0 |
| 66 | Hangzhou | China | 38.1 | 49.4 | 67.2 | 3.1 | 5.2 | 56.9 | 56.4 |
| 67 | Kuala Lumpur | Malaysia | 37.9 | n/a | n/a | 20.8 | 5.8 | 38.7 | 82.6 |
| 68 | Bucharest | Romania | 37.2 | 17.6 | 53.9 | 0.0 | 10.9 | 50.3 | 90.8 |
| 69 | Santiago | Chile | 36.5 | 4.1 | 42.0 | 3.0 | 8.2 | 44.5 | 75.7 |
| 70 | Shanghai | China | 35.6 | 59.2 | 23.3 | 3.5 | 7.2 | 81.6 | 66.5 |
| 71 | Tunis | Tunisia | 35.1 | n/a | n/a | 0.0 | n/a | 51.7 | 63.8 |
| 72 | Montevideo | Uruguay | 35.0 | n/a | n/a | 0.0 | 13.4 | 40.5 | 93.1 |
| 73 | Shenzhen | China | 34.7 | 66.6 | 41.5 | 4.8 | 4.3 | 31.5 | 77.1 |
| 74 | Rio de Janeiro | Brazil | 34.7 | n/a | 45.7 | 1.8 | 4.9 | 21.8 | 82.6 |
| 75 | Bogota | Colombia | 34.3 | n/a | n/a | 1.4 | 8.7 | 72.3 | 81.2 |
| 76 | Lima | Peru | 34.1 | 0.0 | 41.1 | 0.6 | 4.8 | 78.5 | 64.7 |
| 77 | Guangzhou | China | 33.9 | 38.2 | 41.5 | 1.8 | 4.3 | 40.8 | 72.0 |
| 78 | Bangkok | Thailand | 33.8 | n/a | 67.3 | 7.2 | 4.1 | 74.9 | 85.8 |
| 79 | Johannesburg | South Africa | 33.0 | 23.7 | 58.3 | 1.8 | 4.4 | 47.2 | 66.1 |
| 80 | Quito | Ecuador | 32.0 | n/a | 21.1 | 0.0 | 2.2 | 78.0 | 88.5 |
| 81 | Valletta | Malta | 30.8 | 13.4 | 72.2 | 0.0 | 12.2 | n/a | n/a |
| 82 | Brasilia | Brazil | 29.5 | n/a | 33.4 | 1.0 | 13.7 | 52.1 | n/a |
| 83 | Tianjin | China | 27.3 | 49.1 | 0.0 | 0.8 | 8.2 | n/a | 36.2 |
| 84 | Cairo | Egypt | 26.3 | n/a | n/a | 0.0 | 0.3 | 25.3 | 22.9 |
| 85 | Hanoi | Viet Nam | 25.7 | n/a | n/a | 1.7 | 0.9 | 88.2 | 41.1 |
| 86 | Casablanca | Morocco | 23.8 | n/a | n/a | 2.6 | 1.2 | 60.8 | 77.1 |
| 87 | Nairobi | Kenya | 23.6 | n/a | n/a | 0.0 | 0.0 | 53.9 | 89.9 |
| 88 | Kuwait City | Kuwait | 21.7 | 0.7 | 62.7 | 3.1 | 16.6 | n/a | 28.4 |
| 89 | Mumbai | India | 15.5 | n/a | n/a | 3.4 | 3.2 | 30.0 | 51.4 |
| 90 | Delhi | India | 14.9 | n/a | n/a | 1.7 | 1.0 | 31.7 | 0.0 |

| 3. GROW | | | 4. RETAIN | | | | 5. BE GLOBAL | | | |
|------------------------|------------------------|----------------------------|---------------------|------------------------|----------------------|--------------------|---------------------------------------|--|--------------------------|----------------------|
| 3.1 Major universities | 3.2 Tertiary enrolment | 3.3 Use of social networks | 4.1 Personal safety | 4.2 Physicians density | 4.3 Monthly expenses | 4.4 Monthly rental | 5.1 Workforce with tertiary education | 5.2 Population with tertiary education | 5.3 Airport connectivity | 5.4 Presence of IGOs |
| 0.0 | 57.0 | 65.9 | 57.2 | 27.9 | 88.1 | 78.6 | 37.1 | 53.7 | 18.7 | 0.7 |
| 50.0 | 56.7 | 30.6 | 60.9 | 41.3 | 79.5 | 88.9 | 21.4 | 22.4 | 28.8 | 0.0 |
| 0.0 | 36.2 | 47.1 | 75.1 | 75.9 | 71.4 | 80.8 | 50.2 | 59.1 | 6.0 | 8.3 |
| 0.0 | 58.5 | 37.6 | 81.8 | 29.2 | 75.2 | 88.2 | 40.4 | 42.5 | 7.3 | 15.7 |
| 30.0 | 71.4 | 34.1 | 74.4 | 46.2 | 78.5 | 70.4 | 27.3 | 27.2 | 21.1 | 13.5 |
| 0.0 | 62.1 | 34.1 | 78.3 | 50.7 | 82.1 | 88.9 | 27.8 | 32.2 | 1.6 | 0.0 |
| 50.0 | 37.6 | 27.1 | 50.2 | 34.1 | 85.6 | 91.3 | 15.2 | 15.0 | 6.5 | 4.0 |
| 50.0 | 42.8 | 28.2 | 76.8 | 34.8 | 70.6 | 69.8 | 19.8 | 19.6 | 20.9 | 0.0 |
| 80.0 | 18.4 | 100.0 | 79.0 | 24.0 | 33.6 | 11.0 | 12.3 | 16.9 | 31.4 | 4.4 |
| 80.0 | 29.2 | 50.6 | 80.8 | 36.8 | 77.7 | 48.9 | n/a | 0.4 | 6.7 | 0.5 |
| 0.0 | 46.7 | 31.8 | 62.1 | 68.5 | 67.3 | 91.3 | 42.3 | 47.9 | 12.3 | 5.5 |
| 0.0 | 9.8 | 100.0 | 86.0 | 21.6 | 26.6 | 0.0 | 15.0 | 22.8 | 92.6 | 3.0 |
| 30.0 | 41.4 | 35.3 | 79.2 | 31.3 | 65.5 | 91.1 | 28.3 | 27.2 | 5.9 | 3.8 |
| 30.0 | 63.4 | 28.2 | 73.1 | 19.1 | 71.9 | 82.8 | 41.0 | 42.5 | 9.5 | 0.0 |
| 60.0 | 19.2 | 52.9 | 64.6 | 39.3 | 80.2 | 80.3 | 12.2 | 14.6 | 7.1 | 0.8 |
| 60.0 | 33.5 | 51.8 | 70.1 | 21.6 | 71.9 | 82.2 | 15.3 | 10.6 | 4.4 | 0.1 |
| 0.0 | 61.0 | 54.1 | 65.8 | 11.4 | 67.5 | 82.8 | 22.0 | 19.8 | 5.9 | 0.4 |
| 0.0 | 56.9 | 44.7 | 59.8 | 44.2 | 55.6 | 86.0 | 53.2 | 59.9 | 5.9 | 2.1 |
| 50.0 | 40.2 | 29.4 | 67.7 | n/a | 57.6 | 84.7 | 25.0 | 20.9 | 4.3 | 0.5 |
| 0.0 | 18.4 | 100.0 | 87.4 | 31.7 | 23.4 | 3.3 | 12.3 | 16.9 | 49.8 | 0.4 |
| 70.0 | 29.2 | 50.6 | 73.9 | 21.6 | n/a | 80.4 | n/a | 0.4 | 7.2 | 0.0 |
| 30.0 | 16.3 | 67.1 | 81.0 | n/a | 45.7 | 68.4 | 23.3 | n/a | 42.9 | 4.4 |
| 0.0 | 36.5 | 41.2 | 77.4 | 70.0 | 69.9 | 87.2 | 17.8 | 9.9 | 8.5 | 0.9 |
| 40.0 | 62.7 | 67.1 | 71.0 | 0.0 | 69.0 | 91.0 | 11.7 | 17.7 | 4.3 | 2.1 |
| 70.0 | 29.2 | 50.6 | 80.1 | 20.3 | 57.2 | 27.4 | n/a | 0.4 | 4.0 | 0.1 |
| 0.0 | 22.7 | 49.4 | 68.1 | n/a | 77.6 | 97.8 | 17.0 | 7.5 | 11.2 | 13.8 |
| 0.0 | 43.8 | 68.2 | 47.7 | 100.0 | 78.0 | 90.9 | 21.6 | 5.8 | 2.0 | 8.3 |
| 60.0 | 29.2 | 50.6 | 50.1 | 15.2 | 67.6 | 65.8 | n/a | 0.4 | 5.7 | 0.0 |
| 40.0 | 33.5 | 51.8 | 69.9 | 34.5 | 72.0 | 80.2 | 15.3 | 10.6 | 3.6 | 0.3 |
| 0.0 | 38.2 | 50.6 | 55.7 | n/a | 76.0 | 88.5 | 21.0 | 25.4 | 5.6 | 0.5 |
| 0.0 | 27.0 | 57.6 | 60.9 | 38.3 | 72.7 | 82.2 | 34.8 | 22.8 | 2.8 | 0.9 |
| 50.0 | 29.2 | 50.6 | 53.7 | 15.2 | 83.1 | 77.6 | n/a | 0.4 | 7.0 | 0.0 |
| 0.0 | 33.2 | 62.4 | 60.8 | n/a | 13.1 | 30.9 | 6.1 | 14.8 | 14.6 | 5.5 |
| 50.0 | 11.4 | 15.3 | 57.7 | n/a | 59.2 | 73.8 | 25.8 | 5.0 | 3.8 | 0.2 |
| 0.0 | 27.0 | 55.3 | 55.4 | 18.3 | 75.2 | 89.9 | 11.7 | 4.1 | 5.4 | 2.7 |
| 0.0 | 31.8 | 76.5 | 73.5 | 37.9 | n/a | 75.6 | 25.8 | 13.9 | 18.1 | 2.2 |
| 0.0 | 33.5 | 51.8 | 38.6 | 35.6 | 78.1 | 86.9 | 15.3 | 10.6 | 8.9 | 1.2 |
| 40.0 | 29.2 | 50.6 | 70.2 | 19.0 | n/a | 81.5 | n/a | 0.4 | 2.2 | 0.0 |
| 30.0 | 23.9 | 27.1 | 69.8 | n/a | 77.0 | 95.5 | 16.4 | n/a | 3.1 | 3.3 |
| 0.0 | 18.4 | 40.0 | 52.8 | n/a | 49.7 | 72.7 | 10.1 | n/a | 5.8 | 0.2 |
| 0.0 | 17.9 | 30.6 | 62.6 | 5.4 | 70.6 | 71.4 | 0.0 | n/a | 3.7 | 0.8 |
| 0.0 | 0.0 | 0.0 | 38.9 | n/a | 74.4 | 85.0 | n/a | n/a | 2.4 | 5.2 |
| 0.0 | 17.0 | 70.6 | 74.8 | 15.2 | 0.0 | 26.2 | 16.4 | 0.0 | 6.2 | 0.0 |
| 0.0 | 15.9 | 0.0 | 77.9 | 9.1 | 48.1 | 19.8 | 1.4 | 2.2 | 3.1 | 0.0 |
| 0.0 | 15.9 | 0.0 | 76.6 | 15.9 | 48.9 | 76.7 | 1.4 | 0.7 | 5.0 | 0.5 |

Country Profiles

How to Read the Country Profiles



1 The first section introduces the country's key indicators. It comprises its rank within the GTCI (out of 119 countries), its income group (based on the World Bank's Income Group Classification as of June 2016), and its regional group (based on the United Nations' sub-regional groups). Additionally, basic country statistics are included. These include population (in millions), GDP per capita (PPP US\$), and GDP (current US\$ in billions) from the World Bank's World Development Indicators. Finally, it presents the country's GTCI score and income group average GTCI score.

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

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

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

The country profiles provide more granular information on how each of the 119 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.

Index of Countries

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| Brazil | 129 | Indonesia | 159 | Mozambique | 189 | Tanzania, United Rep. | 219 |
| Bulgaria | 130 | Iran, Islamic Rep. | 160 | Namibia | 190 | Thailand | 220 |
| Cambodia | 131 | Ireland | 161 | Nepal | 191 | Trinidad and Tobago | 221 |
| Canada | 132 | Israel | 162 | Netherlands | 192 | Tunisia | 222 |
| Chile | 133 | Italy | 163 | New Zealand | 193 | Turkey | 223 |
| China | 134 | Japan | 164 | Nicaragua | 194 | Uganda | 224 |
| Colombia | 135 | Jordan | 165 | Norway | 195 | Ukraine | 225 |
| Costa Rica | 136 | Kazakhstan | 166 | Oman | 196 | United Arab Emirates | 226 |
| Croatia | 137 | Kenya | 167 | Pakistan | 197 | United Kingdom | 227 |
| Cyprus | 138 | Korea, Rep. | 168 | Panama | 198 | United States of America | 228 |
| Czech Republic | 139 | Kuwait | 169 | Paraguay | 199 | Uruguay | 229 |
| Denmark | 140 | Kyrgyzstan | 170 | Peru | 200 | Venezuela, Bolivarian Rep. | 230 |
| Dominican Republic | 141 | Lao PDR | 171 | Philippines | 201 | Viet Nam | 231 |
| Ecuador | 142 | Latvia | 172 | Poland | 202 | Yemen | 232 |
| Egypt | 143 | Lebanon | 173 | Portugal | 203 | Zimbabwe | 233 |
| El Salvador | 144 | Lesotho | 174 | Qatar | 204 | | |

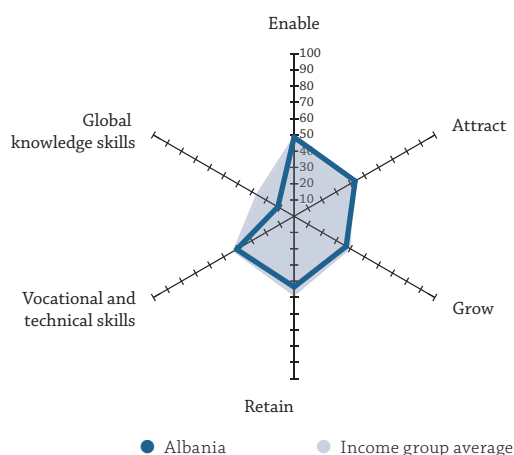
ALBANIA

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 78 |
| Income group | Upper middle income |
| Regional group | Europe |
| Population (millions) | 2.89 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 11,305.40 |
| GDP (US\$ billions) | 11.46 |
| GTCI score | 37.47 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 48.61 | 68 |
| 1.1 Regulatory Landscape..... | 49.44 | 59 |
| 1.1.1 Government effectiveness | 42.93 | 67 |
| 1.1.2 Business-government relations | 48.79 | 80 |
| 1.1.3 Political stability | 72.57 | 45 |
| 1.1.4 Regulatory quality | 50.00 | 62 |
| 1.1.5 Corruption | 32.89 | 67 |
| 1.2 Market Landscape | 37.66 | 93 |
| 1.2.1 Competition intensity | 50.57 | 103 |
| 1.2.2 Ease of doing business | 66.24 | 54 |
| 1.2.3 Cluster development | 20.12 | 107 |
| 1.2.4 R&D expenditure | 3.27 | 87 |
| 1.2.5 ICT infrastructure | 46.52 | 75 |
| 1.2.6 Technology utilisation | 39.22 | 72 |
| 1.3 Business and Labour Landscape..... | 58.75 | 54 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 44.70 | 109 |
| 1.3.4 Labour-employer cooperation | 68.02 | 27 |
| Management Practice | | |
| 1.3.5 Professional management..... | 33.81 | 73 |
| 1.3.6 Relationship of pay to productivity..... | 60.27 | 37 |
| 2 ATTRACT..... | 43.35 | 59 |
| 2.1 External Openness | 27.39 | 90 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 58.75 | 38 |
| 2.1.2 Prevalence of foreign ownership | 43.21 | 94 |
| Attract People | | |
| 2.1.3 Migrant stock | 4.24 | 79 |
| 2.1.4 International students..... | 8.67 | 68 |
| 2.1.5 Brain gain | 22.09 | 102 |
| 2.2 Internal Openness | 59.31 | 34 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 57.47 | 41 |
| 2.2.2 Tolerance of immigrants..... | 47.89 | 76 |
| 2.2.3 Social mobility..... | 27.52 | 103 |
| Gender Equality | | |
| 2.2.4 Female graduates | 94.53 | 10 |
| 2.2.5 Gender earnings gap | 40.96 | 83 |
| 2.2.6 Leadership opportunities for women..... | 87.46 | 9 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 37.02 | 71 |
| 3.1 Formal Education..... | 23.61 | 74 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 13.86 | 70 |
| 3.1.2 Tertiary enrolment..... | 50.69 | 43 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 17.65 | 72 |
| 3.1.4 Reading, maths, and science | 35.83 | 56 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 37.46 | 71 |
| 3.2.1 Quality of management schools..... | 47.09 | 53 |
| 3.2.2 Prevalence of training in firms | 26.91 | 66 |
| 3.2.3 Employee development..... | 38.38 | 63 |
| 3.3 Access to Growth Opportunities | 50.00 | 55 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 32.40 | 88 |
| 3.3.2 Personal rights..... | 62.46 | 58 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 75.76 | 45 |
| 3.3.4 Use of virtual professional networks..... | 15.02 | 63 |
| 3.3.5 Collaboration within organisations | 54.21 | 30 |
| 3.3.6 Collaboration across organisations | 60.14 | 91 |
| 4 RETAIN..... | 43.52 | 74 |
| 4.1 Sustainability | 25.03 | 98 |
| 4.1.1 Pension system | 36.73 | 56 |
| 4.1.2 Social protection | 16.05 | 104 |
| 4.1.3 Brain retention | 22.32 | 101 |
| 4.2 Lifestyle | 62.00 | 61 |
| 4.2.1 Environmental performance..... | 69.58 | 56 |
| 4.2.2 Personal safety | 65.80 | 59 |
| 4.2.3 Physician density | 20.35 | 73 |
| 4.2.4 Sanitation | 92.27 | 56 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 40.78 | 70 |
| 5.1 Mid-Level Skills | 26.23 | 81 |
| 5.1.1 Workforce with secondary education | 32.12 | 56 |
| 5.1.2 Population with secondary education | 46.08 | 39 |
| 5.1.3 Technicians and associate professionals | 8.52 | 96 |
| 5.1.4 Labour productivity per employee..... | 18.20 | 68 |
| 5.2 Employability..... | 55.34 | 58 |
| 5.2.1 Ease of finding skilled employees | 32.34 | 88 |
| 5.2.2 Relevance of education system to the economy | 58.89 | 31 |
| 5.2.3 Skills matching with secondary education..... | 62.37 | 62 |
| 5.2.4 Skills matching with tertiary education | 67.73 | 74 |
| 6 GLOBAL KNOWLEDGE SKILLS | 11.51 | 100 |
| 6.1 High-Level Skills | 15.42 | 94 |
| 6.1.1 Workforce with tertiary education | 26.45 | 71 |
| 6.1.2 Population with tertiary education | 0.00 | 104 |
| 6.1.3 Professionals | 25.43 | 64 |
| 6.1.4 Researchers | 1.76 | 81 |
| 6.1.5 Senior officials and managers | 25.63 | 55 |
| 6.1.6 Availability of scientists and engineers | 13.24 | 111 |
| 6.2 Talent Impact..... | 7.59 | 109 |
| 6.2.1 Innovation output..... | 11.95 | 108 |
| 6.2.2 High-value exports..... | 2.82 | 95 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 6.27 | 64 |
| 6.2.5 Scientific journal articles..... | 9.34 | 78 |

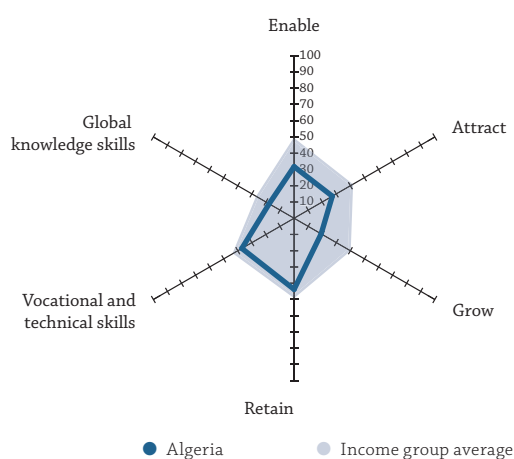
ALGERIA

Key Indicators

| | |
|----------------------------|--------------------------------------|
| Rank (out of 119)..... | 101 |
| Income group..... | Upper middle income |
| Regional group..... | North Africa and Western Asia |
| Population (millions)..... | 39.67 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 14,687.40 |
| GDP (US\$ billions)..... | 166.84 |
| GTCI score..... | 29.45 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 31.74 | 112 |
| 1.1 Regulatory Landscape..... | 31.19 | 106 |
| 1.1.1 Government effectiveness..... | 29.05 | 94 |
| 1.1.2 Business-government relations..... | 45.47 | 88 |
| 1.1.3 Political stability..... | 38.35 | 105 |
| 1.1.4 Regulatory quality..... | 16.75 | 116 |
| 1.1.5 Corruption..... | 26.32 | 83 |
| 1.2 Market Landscape..... | 26.25 | 113 |
| 1.2.1 Competition intensity..... | 30.00 | 118 |
| 1.2.2 Ease of doing business..... | 26.83 | 113 |
| 1.2.3 Cluster development..... | 22.29 | 104 |
| 1.2.4 R&D expenditure..... | n/a | n/a |
| 1.2.5 ICT infrastructure..... | 39.43 | 83 |
| 1.2.6 Technology utilisation..... | 12.72 | 110 |
| 1.3 Business and Labour Landscape..... | 37.78 | 106 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 55.67 | 69 |
| 1.3.2 Ease of redundancy..... | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 52.61 | 84 |
| 1.3.4 Labour-employer cooperation..... | 33.88 | 98 |
| Management Practice | | |
| 1.3.5 Professional management..... | 4.01 | 118 |
| 1.3.6 Relationship of pay to productivity..... | 20.54 | 108 |
| 2 ATTRACT..... | 27.14 | 113 |
| 2.1 External Openness..... | 14.81 | 116 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 27.94 | 108 |
| 2.1.2 Prevalence of foreign ownership..... | 22.96 | 114 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 1.19 | 99 |
| 2.1.4 International students..... | 3.08 | 77 |
| 2.1.5 Brain gain..... | 18.88 | 108 |
| 2.2 Internal Openness..... | 39.46 | 97 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 20.69 | 99 |
| 2.2.2 Tolerance of immigrants..... | 43.66 | 83 |
| 2.2.3 Social mobility..... | 30.79 | 97 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 90.24 | 19 |
| 2.2.5 Gender earnings gap..... | 1.20 | 116 |
| 2.2.6 Leadership opportunities for women..... | 50.18 | 42 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 19.23 | 116 |
| 3.1 Formal Education..... | 16.72 | 89 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 13.35 | 71 |
| 3.1.2 Tertiary enrolment..... | 31.94 | 69 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 27.62 | 41 |
| 3.1.4 Reading, maths, and science..... | 10.68 | 67 |
| 3.1.5 University ranking..... | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 17.06 | 116 |
| 3.2.1 Quality of management schools..... | 20.37 | 110 |
| 3.2.2 Prevalence of training in firms..... | 18.34 | 82 |
| 3.2.3 Employee development..... | 12.46 | 115 |
| 3.3 Access to Growth Opportunities..... | 23.90 | 115 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 14.53 | 116 |
| 3.3.2 Personal rights..... | 9.99 | 111 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 46.36 | 103 |
| 3.3.4 Use of virtual professional networks..... | 7.01 | 85 |
| 3.3.5 Collaboration within organisations..... | 11.83 | 116 |
| 3.3.6 Collaboration across organisations..... | 53.71 | 110 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 43.75 | 72 |
| 4.1 Sustainability..... | 30.55 | 79 |
| 4.1.1 Pension system..... | 35.71 | 58 |
| 4.1.2 Social protection..... | 33.39 | 72 |
| 4.1.3 Brain retention..... | 22.55 | 100 |
| 4.2 Lifestyle..... | 56.94 | 70 |
| 4.2.1 Environmental performance..... | 61.93 | 74 |
| 4.2.2 Personal safety..... | 61.18 | 69 |
| 4.2.3 Physician density..... | 18.75 | 76 |
| 4.2.4 Sanitation..... | 85.91 | 69 |

| | | |
|---|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 37.11 | 83 |
| 5.1 Mid-Level Skills..... | 26.44 | 78 |
| 5.1.1 Workforce with secondary education..... | 31.53 | 57 |
| 5.1.2 Population with secondary education..... | 24.54 | 73 |
| 5.1.3 Technicians and associate professionals..... | 17.04 | 87 |
| 5.1.4 Labour productivity per employee..... | 32.65 | 49 |
| 5.2 Employability..... | 47.78 | 81 |
| 5.2.1 Ease of finding skilled employees..... | 47.52 | 58 |
| 5.2.2 Relevance of education system to the economy..... | 33.41 | 75 |
| 5.2.3 Skills matching with secondary education..... | 45.98 | 110 |
| 5.2.4 Skills matching with tertiary education..... | 64.21 | 84 |

| | | |
|---|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS..... | 17.74 | 88 |
| 6.1 High-Level Skills..... | 24.30 | 70 |
| 6.1.1 Workforce with tertiary education..... | 32.18 | 56 |
| 6.1.2 Population with tertiary education..... | 12.69 | 79 |
| 6.1.3 Professionals..... | 27.17 | 61 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers..... | 15.63 | 70 |
| 6.1.6 Availability of scientists and engineers..... | 33.82 | 74 |
| 6.2 Talent Impact..... | 11.19 | 98 |
| 6.2.1 Innovation output..... | 11.78 | 109 |
| 6.2.2 High-value exports..... | 0.38 | 107 |
| 6.2.3 New product entrepreneurial activity..... | 28.59 | 69 |
| 6.2.4 New business density..... | 3.19 | 78 |
| 6.2.5 Scientific journal articles..... | 12.03 | 71 |

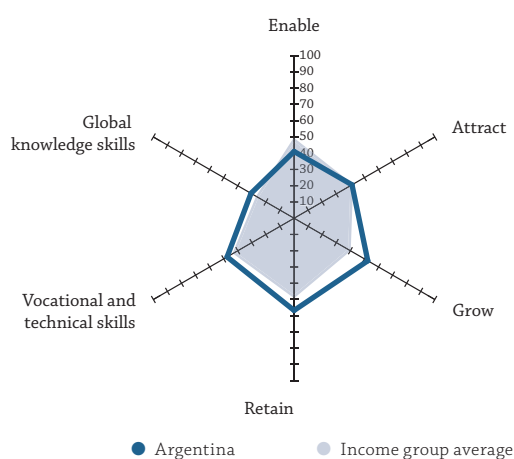
ARGENTINA

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 49 |
| Income group | Upper middle income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 43.42 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 22,303.20 |
| GDP (US\$ billions) | 548.05 |
| GTCI score | 44.92 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-----------|------|
| 1 ENABLE.....41.07 | 92 | |
| 1.1 Regulatory Landscape..... | 33.12 | 104 |
| 1.1.1 Government effectiveness | 39.85 | 75 |
| 1.1.2 Business-government relations | 12.80 | 118 |
| 1.1.3 Political stability | 62.14 | 64 |
| 1.1.4 Regulatory quality | 21.84 | 112 |
| 1.1.5 Corruption | 28.95 | 76 |
| 1.2 Market Landscape..... | 38.97 | 89 |
| 1.2.1 Competition intensity | 48.29 | 108 |
| 1.2.2 Ease of doing business | 44.89 | 95 |
| 1.2.3 Cluster development | 27.86 | 93 |
| 1.2.4 R&D expenditure | 14.02 | 52 |
| 1.2.5 ICT infrastructure | 68.35 | 48 |
| 1.2.6 Technology utilisation | 30.39 | 94 |
| 1.3 Business and Labour Landscape..... | 51.12 | 77 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 44.33 | 94 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 54.70 | 77 |
| 1.3.4 Labour-employer cooperation | 31.71 | 104 |
| Management Practice | | |
| 1.3.5 Professional management..... | 46.70 | 54 |
| 1.3.6 Relationship of pay to productivity..... | 29.29 | 94 |
| 2 ATTRACT.....41.14 | 68 | |
| 2.1 External Openness | 26.34 | 97 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 15.67 | 116 |
| 2.1.2 Prevalence of foreign ownership | 52.35 | 74 |
| Attract People | | |
| 2.1.3 Migrant stock | 10.46 | 53 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 26.91 | 88 |
| 2.2 Internal Openness..... | 55.93 | 42 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 57.47 | 41 |
| 2.2.2 Tolerance of immigrants..... | 83.10 | 21 |
| 2.2.3 Social mobility..... | 31.34 | 95 |
| Gender Equality | | |
| 2.2.4 Female graduates | 95.94 | 5 |
| 2.2.5 Gender earnings gap | n/a | n/a |
| 2.2.6 Leadership opportunities for women..... | 11.83 | 104 |

| | Score | Rank |
|--|-----------|------|
| 3 GROW.....52.35 | 34 | |
| 3.1 Formal Education..... | 46.73 | 32 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 72.63 | 10 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 26.60 | 45 |
| 3.1.4 Reading, maths, and science | 39.12 | 50 |
| 3.1.5 University ranking | 48.57 | 28 |
| 3.2 Lifelong Learning..... | 56.97 | 34 |
| 3.2.1 Quality of management schools..... | 57.14 | 35 |
| 3.2.2 Prevalence of training in firms..... | 79.42 | 6 |
| 3.2.3 Employee development..... | 34.34 | 70 |
| 3.3 Access to Growth Opportunities | 53.35 | 46 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 43.85 | 62 |
| 3.3.2 Personal rights..... | 66.43 | 48 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 70.30 | 60 |
| 3.3.4 Use of virtual professional networks..... | 30.81 | 29 |
| 3.3.5 Collaboration within organisations | 35.05 | 73 |
| 3.3.6 Collaboration across organisations | 73.68 | 39 |
| 4 RETAIN.....56.72 | 51 | |
| 4.1 Sustainability | 39.98 | 61 |
| 4.1.1 Pension system | 40.82 | 54 |
| 4.1.2 Social protection | 33.80 | 70 |
| 4.1.3 Brain retention | 45.33 | 51 |
| 4.2 Lifestyle | 73.47 | 41 |
| 4.2.1 Environmental performance..... | 79.77 | 42 |
| 4.2.2 Personal safety | 58.25 | 75 |
| 4.2.3 Physician density | 59.94 | 16 |
| 4.2.4 Sanitation | 95.91 | 43 |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....47.59 | 48 | |
| 5.1 Mid-Level Skills | 39.28 | 54 |
| 5.1.1 Workforce with secondary education | 34.55 | 44 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 59.19 | 26 |
| 5.1.4 Labour productivity per employee..... | 24.10 | 59 |
| 5.2 Employability..... | 55.90 | 57 |
| 5.2.1 Ease of finding skilled employees | 55.78 | 44 |
| 5.2.2 Relevance of education system to the economy | 31.49 | 83 |
| 5.2.3 Skills matching with secondary education..... | 59.73 | 73 |
| 5.2.4 Skills matching with tertiary education | 76.61 | 37 |
| 6 GLOBAL KNOWLEDGE SKILLS.....30.62 | 56 | |
| 6.1 High-Level Skills | 23.52 | 71 |
| 6.1.1 Workforce with tertiary education | 29.59 | 63 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals..... | 13.29 | 83 |
| 6.1.4 Researchers..... | 14.43 | 44 |
| 6.1.5 Senior officials and managers | 30.00 | 46 |
| 6.1.6 Availability of scientists and engineers | 30.29 | 86 |
| 6.2 Talent Impact..... | 37.71 | 37 |
| 6.2.1 Innovation output..... | 24.08 | 80 |
| 6.2.2 High-value exports..... | 16.95 | 44 |
| 6.2.3 New product entrepreneurial activity | 45.20 | 43 |
| 6.2.4 New business density | 2.32 | 84 |
| 6.2.5 Scientific journal articles..... | 16.12 | 63 |

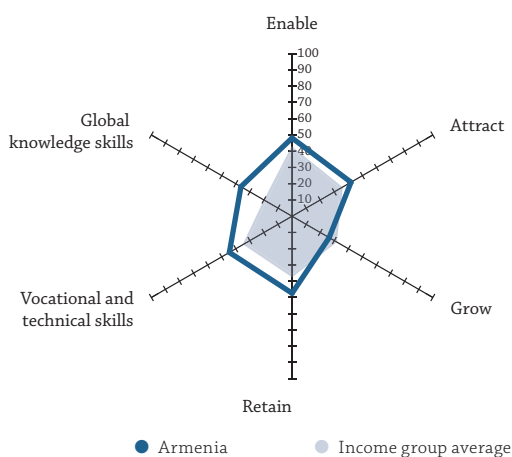
ARMENIA

Key Indicators

Rank (out of 119)..... **66**
 Income group..... **Lower middle income**
 Regional group..... **North Africa and Western Asia**
 Population (millions)..... **3.02**

GDP per capita (PPP US\$) **8,393.51**
 GDP (US\$ billions) **10.56**
 GTCI score..... **40.76**
 GTCI score (income group average) **32.92**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....48.12 72 | | |
| 1.1 Regulatory Landscape.....44.47 80 | | |
| 1.1.1 Government effectiveness.....38.56 77 | | |
| 1.1.2 Business-government relations.....50.77 74 | | |
| 1.1.3 Political stability.....56.80 77 | | |
| 1.1.4 Regulatory quality.....51.21 59 | | |
| 1.1.5 Corruption.....25.00 86 | | |
| 1.2 Market Landscape.....43.60 72 | | |
| 1.2.1 Competition intensity.....59.43 83 | | |
| 1.2.2 Ease of doing business.....75.06 35 | | |
| 1.2.3 Cluster development.....30.96 89 | | |
| 1.2.4 R&D expenditure.....5.37 78 | | |
| 1.2.5 ICT infrastructure.....55.80 62 | | |
| 1.2.6 Technology utilisation.....34.98 82 | | |
| 1.3 Business and Labour Landscape.....56.30 62 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring.....55.67 69 | | |
| 1.3.2 Ease of redundancy.....90.00 34 | | |
| 1.3.3 Active labour market policies.....51.28 89 | | |
| 1.3.4 Labour-employer cooperation.....59.89 37 | | |
| Management Practice | | |
| 1.3.5 Professional management.....31.81 78 | | |
| 1.3.6 Relationship of pay to productivity.....49.16 57 | | |
| 2 ATTRACT.....41.85 63 | | |
| 2.1 External Openness.....31.50 76 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer.....46.74 69 | | |
| 2.1.2 Prevalence of foreign ownership.....47.16 90 | | |
| Attract People | | |
| 2.1.3 Migrant stock.....13.83 48 | | |
| 2.1.4 International students.....21.47 44 | | |
| 2.1.5 Brain gain.....28.31 86 | | |
| 2.2 Internal Openness.....52.20 52 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities.....52.87 46 | | |
| 2.2.2 Tolerance of immigrants.....47.89 76 | | |
| 2.2.3 Social mobility.....32.15 93 | | |
| Gender Equality | | |
| 2.2.4 Female graduates.....86.02 25 | | |
| 2.2.5 Gender earnings gap.....43.37 78 | | |
| 2.2.6 Leadership opportunities for women.....50.90 40 | | |

| | Score | Rank |
|---|-------|------|
| 3 GROW.....26.33 106 | | |
| 3.1 Formal Education.....15.57 94 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment.....16.88 63 | | |
| 3.1.2 Tertiary enrolment.....38.48 59 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure.....6.91 94 | | |
| 3.1.4 Reading, maths, and science.....n/a n/a | | |
| 3.1.5 University ranking.....0.00 76 | | |
| 3.2 Lifelong Learning.....22.82 114 | | |
| 3.2.1 Quality of management schools.....26.98 100 | | |
| 3.2.2 Prevalence of training in firms.....16.89 83 | | |
| 3.2.3 Employee development.....24.58 96 | | |
| 3.3 Access to Growth Opportunities.....40.62 92 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority.....22.63 109 | | |
| 3.3.2 Personal rights.....37.30 85 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks.....70.61 59 | | |
| 3.3.4 Use of virtual professional networks.....7.84 81 | | |
| 3.3.5 Collaboration within organisations.....42.15 50 | | |
| 3.3.6 Collaboration across organisations.....63.17 83 | | |
| 4 RETAIN.....47.36 65 | | |
| 4.1 Sustainability.....24.46 100 | | |
| 4.1.1 Pension system.....30.61 64 | | |
| 4.1.2 Social protection.....17.48 99 | | |
| 4.1.3 Brain retention.....25.28 95 | | |
| 4.2 Lifestyle.....70.26 45 | | |
| 4.2.1 Environmental performance.....83.05 36 | | |
| 4.2.2 Personal safety.....65.38 61 | | |
| 4.2.3 Physician density.....44.55 38 | | |
| 4.2.4 Sanitation.....88.07 65 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....44.55 56 | | |
| 5.1 Mid-Level Skills.....43.14 43 | | |
| 5.1.1 Workforce with secondary education.....57.59 7 | | |
| 5.1.2 Population with secondary education.....58.77 24 | | |
| 5.1.3 Technicians and associate professionals.....43.50 49 | | |
| 5.1.4 Labour productivity per employee.....12.71 76 | | |
| 5.2 Employability.....45.96 85 | | |
| 5.2.1 Ease of finding skilled employees.....24.09 108 | | |
| 5.2.2 Relevance of education system to the economy.....41.35 59 | | |
| 5.2.3 Skills matching with secondary education.....58.69 76 | | |
| 5.2.4 Skills matching with tertiary education.....59.69 103 | | |
| 6 GLOBAL KNOWLEDGE SKILLS.....36.35 41 | | |
| 6.1 High-Level Skills.....48.72 23 | | |
| 6.1.1 Workforce with tertiary education.....41.03 38 | | |
| 6.1.2 Population with tertiary education.....79.59 3 | | |
| 6.1.3 Professionals.....34.97 49 | | |
| 6.1.4 Researchers.....n/a n/a | | |
| 6.1.5 Senior officials and managers.....41.25 30 | | |
| 6.1.6 Availability of scientists and engineers.....46.76 49 | | |
| 6.2 Talent Impact.....23.98 65 | | |
| 6.2.1 Innovation output.....39.89 45 | | |
| 6.2.2 High-value exports.....9.98 66 | | |
| 6.2.3 New product entrepreneurial activity.....n/a n/a | | |
| 6.2.4 New business density.....8.65 55 | | |
| 6.2.5 Scientific journal articles.....37.42 45 | | |

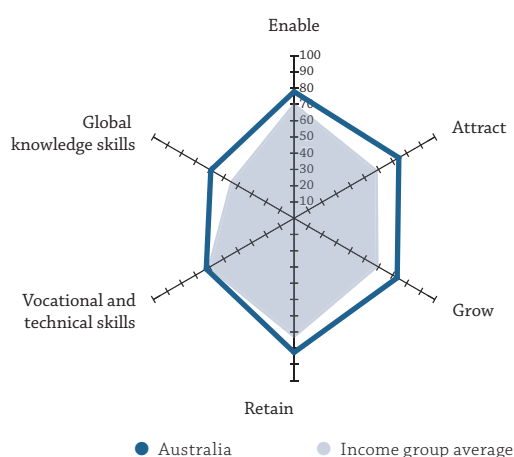
AUSTRALIA

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 11 |
| Income group | High income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 23.78 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 45,514.20 |
| GDP (US\$ billions) | 1,339.54 |
| GTCI score | 71.61 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 77.86 | 17 |
| 1.1 Regulatory Landscape..... | 81.40 | 14 |
| 1.1.1 Government effectiveness | 82.26 | 14 |
| 1.1.2 Business-government relations | 64.68 | 37 |
| 1.1.3 Political stability | 85.68 | 23 |
| 1.1.4 Regulatory quality | 88.83 | 7 |
| 1.1.5 Corruption | 85.53 | 13 |
| 1.2 Market Landscape..... | 74.42 | 17 |
| 1.2.1 Competition intensity | 91.14 | 5 |
| 1.2.2 Ease of doing business | 87.42 | 13 |
| 1.2.3 Cluster development | 50.77 | 41 |
| 1.2.4 R&D expenditure | 51.17 | 14 |
| 1.2.5 ICT infrastructure | 91.13 | 13 |
| 1.2.6 Technology utilisation | 74.91 | 22 |
| 1.3 Business and Labour Landscape..... | 77.77 | 15 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 75.44 | 25 |
| 1.3.4 Labour-employer cooperation | 54.47 | 50 |
| Management Practice | | |
| 1.3.5 Professional management..... | 89.68 | 11 |
| 1.3.6 Relationship of pay to productivity..... | 68.01 | 23 |
| 2 ATTRACT..... | 74.42 | 7 |
| 2.1 External Openness | 73.85 | 8 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 59.53 | 36 |
| 2.1.2 Prevalence of foreign ownership | 84.69 | 10 |
| Attract People | | |
| 2.1.3 Migrant stock | 62.11 | 12 |
| 2.1.4 International students..... | 95.45 | 6 |
| 2.1.5 Brain gain..... | 67.47 | 18 |
| 2.2 Internal Openness..... | 74.99 | 10 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 64.37 | 30 |
| 2.2.2 Tolerance of immigrants..... | 92.96 | 5 |
| 2.2.3 Social mobility..... | 91.83 | 6 |
| Gender Equality | | |
| 2.2.4 Female graduates | 77.63 | 51 |
| 2.2.5 Gender earnings gap | 55.42 | 46 |
| 2.2.6 Leadership opportunities for women..... | 67.74 | 22 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 73.27 | 11 |
| 3.1 Formal Education..... | 65.72 | 4 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 53.82 | 14 |
| 3.1.2 Tertiary enrolment..... | 79.16 | 3 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 32.74 | 26 |
| 3.1.4 Reading, maths, and science | 76.78 | 18 |
| 3.1.5 University ranking | 86.10 | 6 |
| 3.2 Lifelong Learning..... | 74.52 | 16 |
| 3.2.1 Quality of management schools..... | 76.98 | 15 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 72.05 | 21 |
| 3.3 Access to Growth Opportunities | 79.56 | 14 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 79.61 | 10 |
| 3.3.2 Personal rights..... | 98.80 | 2 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 81.82 | 28 |
| 3.3.4 Use of virtual professional networks..... | 76.41 | 9 |
| 3.3.5 Collaboration within organisations | 70.85 | 20 |
| 3.3.6 Collaboration across organisations | 69.85 | 56 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 82.55 | 12 |
| 4.1 Sustainability | 79.25 | 15 |
| 4.1.1 Pension system | 90.82 | 15 |
| 4.1.2 Social protection | 82.48 | 14 |
| 4.1.3 Brain retention | 64.46 | 25 |
| 4.2 Lifestyle..... | 85.84 | 12 |
| 4.2.1 Environmental performance..... | 93.54 | 13 |
| 4.2.2 Personal safety | 96.14 | 10 |
| 4.2.3 Physician density | 53.69 | 22 |
| 4.2.4 Sanitation | 100.00 | 1 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 62.40 | 24 |
| 5.1 Mid-Level Skills | 47.98 | 31 |
| 5.1.1 Workforce with secondary education | 34.68 | 42 |
| 5.1.2 Population with secondary education | 41.65 | 47 |
| 5.1.3 Technicians and associate professionals | 56.95 | 30 |
| 5.1.4 Labour productivity per employee..... | 58.63 | 12 |
| 5.2 Employability..... | 76.83 | 20 |
| 5.2.1 Ease of finding skilled employees | 78.88 | 17 |
| 5.2.2 Relevance of education system to the economy | 77.40 | 14 |
| 5.2.3 Skills matching with secondary education..... | 71.87 | 28 |
| 5.2.4 Skills matching with tertiary education | 79.17 | 30 |

| | | |
|--|--------------|----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 59.17 | 6 |
| 6.1 High-Level Skills | 60.48 | 9 |
| 6.1.1 Workforce with tertiary education | 54.10 | 21 |
| 6.1.2 Population with tertiary education | 54.72 | 9 |
| 6.1.3 Professionals..... | 59.54 | 15 |
| 6.1.4 Researchers..... | 54.81 | 15 |
| 6.1.5 Senior officials and managers | 70.00 | 9 |
| 6.1.6 Availability of scientists and engineers | 69.71 | 17 |
| 6.2 Talent Impact..... | 57.86 | 7 |
| 6.2.1 Innovation output..... | 53.08 | 29 |
| 6.2.2 High-value exports..... | 25.42 | 31 |
| 6.2.3 New product entrepreneurial activity | 42.51 | 52 |
| 6.2.4 New business density | 86.36 | 4 |
| 6.2.5 Scientific journal articles..... | 81.91 | 7 |

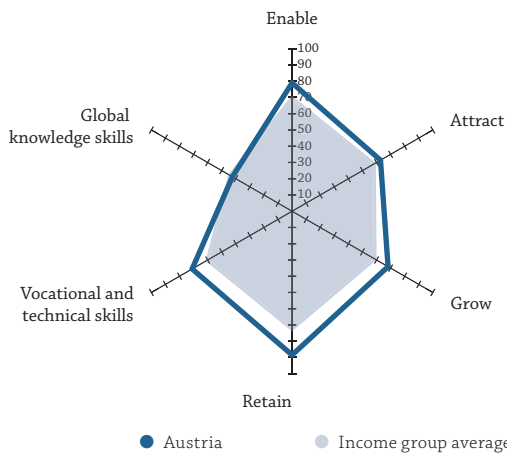
AUSTRIA

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 18 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 8.61 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 47,824.20 |
| GDP (US\$ billions) | 374.06 |
| GTCI score..... | 68.63 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 78.96 | 16 |
| 1.1 Regulatory Landscape..... | 80.42 | 17 |
| 1.1.1 Government effectiveness | 79.95 | 18 |
| 1.1.2 Business-government relations..... | 69.32 | 31 |
| 1.1.3 Political stability..... | 92.72 | 7 |
| 1.1.4 Regulatory quality..... | 79.85 | 16 |
| 1.1.5 Corruption..... | 80.26 | 16 |
| 1.2 Market Landscape..... | 79.11 | 13 |
| 1.2.1 Competition intensity..... | 81.71 | 20 |
| 1.2.2 Ease of doing business..... | 84.92 | 17 |
| 1.2.3 Cluster development..... | 77.40 | 17 |
| 1.2.4 R&D expenditure..... | 69.63 | 7 |
| 1.2.5 ICT infrastructure..... | 84.31 | 21 |
| 1.2.6 Technology utilisation..... | 76.68 | 19 |
| 1.3 Business and Labour Landscape..... | 77.35 | 18 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 89.00 | 25 |
| 1.3.2 Ease of redundancy..... | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 87.48 | 6 |
| 1.3.4 Labour-employer cooperation..... | 86.45 | 8 |
| Management Practice | | |
| 1.3.5 Professional management..... | 76.50 | 23 |
| 1.3.6 Relationship of pay to productivity..... | 64.65 | 28 |
| 2 ATTRACT..... | 62.81 | 21 |
| 2.1 External Openness..... | 60.52 | 14 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 56.66 | 43 |
| 2.1.2 Prevalence of foreign ownership..... | 70.86 | 38 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 38.39 | 17 |
| 2.1.4 International students..... | 82.86 | 10 |
| 2.1.5 Brain gain..... | 53.82 | 32 |
| 2.2 Internal Openness..... | 65.09 | 23 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 65.52 | 27 |
| 2.2.2 Tolerance of immigrants..... | 80.28 | 24 |
| 2.2.3 Social mobility..... | 82.02 | 15 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 70.97 | 65 |
| 2.2.5 Gender earnings gap..... | 43.37 | 78 |
| 2.2.6 Leadership opportunities for women..... | 48.39 | 50 |

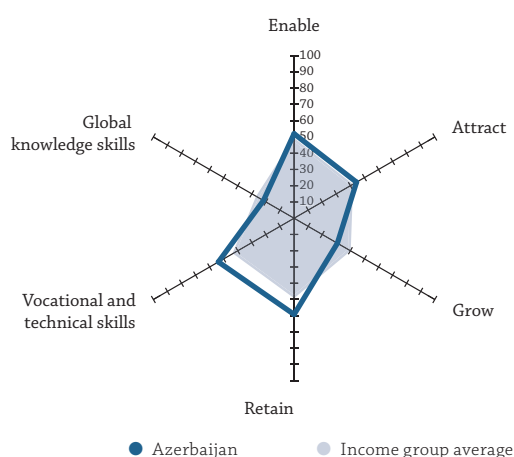
| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 68.18 | 16 |
| 3.1 Formal Education..... | 59.60 | 10 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 57.87 | 11 |
| 3.1.2 Tertiary enrolment..... | 71.41 | 12 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 43.73 | 13 |
| 3.1.4 Reading, maths, and science..... | 72.06 | 24 |
| 3.1.5 University ranking..... | 52.91 | 24 |
| 3.2 Lifelong Learning..... | 75.55 | 15 |
| 3.2.1 Quality of management schools..... | 66.93 | 28 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 84.18 | 11 |
| 3.3 Access to Growth Opportunities..... | 69.40 | 19 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 73.46 | 18 |
| 3.3.2 Personal rights..... | 88.17 | 16 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 71.21 | 57 |
| 3.3.4 Use of virtual professional networks..... | 19.26 | 50 |
| 3.3.5 Collaboration within organisations..... | 80.18 | 13 |
| 3.3.6 Collaboration across organisations..... | 84.13 | 20 |
| 4 RETAIN..... | 88.45 | 3 |
| 4.1 Sustainability..... | 84.16 | 9 |
| 4.1.1 Pension system..... | 93.88 | 6 |
| 4.1.2 Social protection..... | 92.77 | 7 |
| 4.1.3 Brain retention..... | 65.83 | 23 |
| 4.2 Lifestyle..... | 92.74 | 1 |
| 4.2.1 Environmental performance..... | 92.46 | 18 |
| 4.2.2 Personal safety..... | 96.29 | 8 |
| 4.2.3 Physician density..... | 82.21 | 2 |
| 4.2.4 Sanitation..... | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 71.00 | 7 |
| 5.1 Mid-Level Skills..... | 64.39 | 7 |
| 5.1.1 Workforce with secondary education..... | 45.84 | 21 |
| 5.1.2 Population with secondary education..... | 71.04 | 12 |
| 5.1.3 Technicians and associate professionals..... | 84.75 | 6 |
| 5.1.4 Labour productivity per employee..... | 55.93 | 16 |
| 5.2 Employability..... | 77.60 | 19 |
| 5.2.1 Ease of finding skilled employees..... | 78.88 | 17 |
| 5.2.2 Relevance of education system to the economy..... | 59.62 | 29 |
| 5.2.3 Skills matching with secondary education..... | 83.04 | 10 |
| 5.2.4 Skills matching with tertiary education..... | 88.87 | 13 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 42.40 | 27 |
| 6.1 High-Level Skills..... | 44.53 | 29 |
| 6.1.1 Workforce with tertiary education..... | 46.94 | 29 |
| 6.1.2 Population with tertiary education..... | 26.59 | 52 |
| 6.1.3 Professionals..... | 46.53 | 32 |
| 6.1.4 Researchers..... | 59.96 | 11 |
| 6.1.5 Senior officials and managers..... | 26.88 | 52 |
| 6.1.6 Availability of scientists and engineers..... | 60.29 | 27 |
| 6.2 Talent Impact..... | 40.27 | 31 |
| 6.2.1 Innovation output..... | 60.46 | 21 |
| 6.2.2 High-value exports..... | 25.24 | 32 |
| 6.2.3 New product entrepreneurial activity..... | 58.17 | 21 |
| 6.2.4 New business density..... | 4.06 | 75 |
| 6.2.5 Scientific journal articles..... | 53.41 | 28 |

AZERBAIJAN

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 57 |
| Income group | Upper middle income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 9.65 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 51.98 | 54 |
| 1.1 Regulatory Landscape..... | 40.61 | 88 |
| 1.1.1 Government effectiveness | 36.25 | 82 |
| 1.1.2 Business-government relations | 59.60 | 59 |
| 1.1.3 Political stability | 47.09 | 94 |
| 1.1.4 Regulatory quality | 39.08 | 83 |
| 1.1.5 Corruption | 21.05 | 95 |
| 1.2 Market Landscape..... | 46.86 | 64 |
| 1.2.1 Competition intensity | 51.14 | 102 |
| 1.2.2 Ease of doing business | 64.54 | 60 |
| 1.2.3 Cluster development | 42.72 | 65 |
| 1.2.4 R&D expenditure | 4.67 | 80 |
| 1.2.5 ICT infrastructure | 65.08 | 51 |
| 1.2.6 Technology utilisation | 53.00 | 46 |
| 1.3 Business and Labour Landscape..... | 68.47 | 30 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 67.74 | 37 |
| 1.3.4 Labour-employer cooperation | 55.28 | 45 |
| Management Practice | | |
| 1.3.5 Professional management..... | 35.82 | 70 |
| 1.3.6 Relationship of pay to productivity..... | 61.95 | 31 |
| 2 ATTRACT..... | 44.35 | 53 |
| 2.1 External Openness | 38.24 | 58 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 60.05 | 35 |
| 2.1.2 Prevalence of foreign ownership | 55.31 | 68 |
| Attract People | | |
| 2.1.3 Migrant stock | 5.83 | 69 |
| 2.1.4 International students..... | 10.55 | 62 |
| 2.1.5 Brain gain | 59.44 | 24 |
| 2.2 Internal Openness..... | 50.47 | 57 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 41.38 | 65 |
| 2.2.2 Tolerance of immigrants..... | 53.52 | 66 |
| 2.2.3 Social mobility..... | 36.78 | 81 |
| Gender Equality | | |
| 2.2.4 Female graduates | 69.59 | 67 |
| 2.2.5 Gender earnings gap | 40.96 | 83 |
| 2.2.6 Leadership opportunities for women..... | 60.57 | 32 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 17,739.90 |
| GDP (US\$ billions) | 53.05 |
| GTCI score..... | 43.63 |
| GTCI score (income group average) | 40.93 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 30.76 | 92 |
| 3.1 Formal Education..... | 15.84 | 93 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 21.83 | 85 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 6.91 | 94 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 18.80 | 65 |
| 3.2 Lifelong Learning..... | 30.74 | 95 |
| 3.2.1 Quality of management schools..... | 35.71 | 80 |
| 3.2.2 Prevalence of training in firms | 22.16 | 74 |
| 3.2.3 Employee development..... | 34.34 | 70 |
| 3.3 Access to Growth Opportunities | 45.69 | 66 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 44.13 | 61 |
| 3.3.2 Personal rights..... | 10.24 | 109 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 89.39 | 14 |
| 3.3.4 Use of virtual professional networks..... | 3.52 | 95 |
| 3.3.5 Collaboration within organisations | 45.49 | 43 |
| 3.3.6 Collaboration across organisations | 81.33 | 23 |
| 4 RETAIN..... | 59.19 | 44 |
| 4.1 Sustainability | 43.71 | 54 |
| 4.1.1 Pension system | 33.67 | 59 |
| 4.1.2 Social protection | 41.88 | 48 |
| 4.1.3 Brain retention | 55.58 | 35 |
| 4.2 Lifestyle..... | 74.67 | 39 |
| 4.2.1 Environmental performance..... | 87.12 | 31 |
| 4.2.2 Personal safety | 69.55 | 50 |
| 4.2.3 Physician density | 54.17 | 20 |
| 4.2.4 Sanitation | 87.84 | 66 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 53.77 | 34 |
| 5.1 Mid-Level Skills | 50.47 | 26 |
| 5.1.1 Workforce with secondary education | 57.85 | 6 |
| 5.1.2 Population with secondary education | 83.45 | 4 |
| 5.1.3 Technicians and associate professionals | 41.26 | 52 |
| 5.1.4 Labour productivity per employee..... | 19.31 | 67 |
| 5.2 Employability..... | 57.08 | 53 |
| 5.2.1 Ease of finding skilled employees | 43.89 | 64 |
| 5.2.2 Relevance of education system to the economy | 40.63 | 63 |
| 5.2.3 Skills matching with secondary education..... | 72.58 | 27 |
| 5.2.4 Skills matching with tertiary education | 71.21 | 59 |
| 6 GLOBAL KNOWLEDGE SKILLS | 21.75 | 75 |
| 6.1 High-Level Skills | 34.63 | 45 |
| 6.1.1 Workforce with tertiary education | 37.89 | 42 |
| 6.1.2 Population with tertiary education | 42.54 | 18 |
| 6.1.3 Professionals..... | 34.39 | 50 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 6.88 | 93 |
| 6.1.6 Availability of scientists and engineers | 51.47 | 40 |
| 6.2 Talent Impact..... | 8.86 | 104 |
| 6.2.1 Innovation output..... | 20.39 | 86 |
| 6.2.2 High-value exports..... | 4.71 | 87 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 5.57 | 68 |
| 6.2.5 Scientific journal articles..... | 4.77 | 96 |

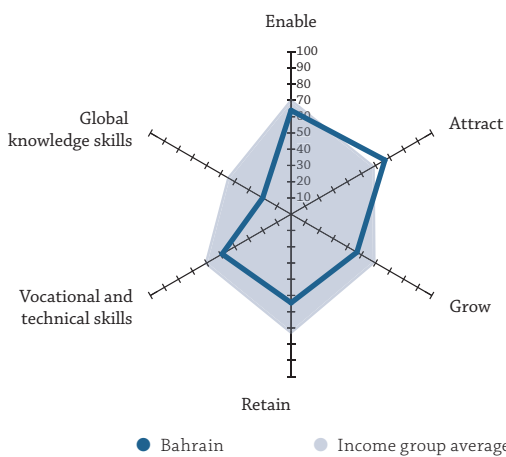
BAHRAIN

Key Indicators

| | |
|----------------------------|--------------------------------------|
| Rank (out of 119)..... | 38 |
| Income group | High income |
| Regional group..... | North Africa and Western Asia |
| Population (millions)..... | 1.38 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 46,946.30 |
| GDP (US\$ billions) | 32.22 |
| GTCI score..... | 50.16 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 63.90 | 30 |
| 1.1 Regulatory Landscape..... | 57.06 | 46 |
| 1.1.1 Government effectiveness | 56.81 | 39 |
| 1.1.2 Business-government relations | 87.42 | 10 |
| 1.1.3 Political stability | 37.62 | 108 |
| 1.1.4 Regulatory quality | 65.29 | 35 |
| 1.1.5 Corruption | 38.16 | 57 |
| 1.2 Market Landscape..... | 59.06 | 35 |
| 1.2.1 Competition intensity | 70.86 | 56 |
| 1.2.2 Ease of doing business | 65.38 | 58 |
| 1.2.3 Cluster development | 70.90 | 22 |
| 1.2.4 R&D expenditure | 2.10 | 92 |
| 1.2.5 ICT infrastructure | 81.17 | 25 |
| 1.2.6 Technology utilisation | 63.96 | 34 |
| 1.3 Business and Labour Landscape..... | 75.58 | 22 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 75.86 | 24 |
| 1.3.4 Labour-employer cooperation | 72.09 | 19 |
| Management Practice | | |
| 1.3.5 Professional management..... | 56.16 | 30 |
| 1.3.6 Relationship of pay to productivity..... | 69.36 | 20 |
| 2 ATTRACT..... | 66.64 | 14 |
| 2.1 External Openness | 76.42 | 7 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 62.40 | 31 |
| 2.1.2 Prevalence of foreign ownership | 81.73 | 15 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 100.00 | 1 |
| 2.1.4 International students..... | 72.31 | 12 |
| 2.1.5 Brain gain..... | 65.66 | 19 |
| 2.2 Internal Openness..... | 56.87 | 40 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 26.44 | 89 |
| 2.2.2 Tolerance of immigrants..... | 70.42 | 40 |
| 2.2.3 Social mobility..... | 71.12 | 25 |
| Gender Equality | | |
| 2.2.4 Female graduates | 85.17 | 26 |
| 2.2.5 Gender earnings gap | 15.66 | 105 |
| 2.2.6 Leadership opportunities for women..... | 72.40 | 16 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 46.76 | 40 |
| 3.1 Formal Education..... | 22.40 | 75 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 11.55 | 77 |
| 3.1.2 Tertiary enrolment..... | 32.35 | 68 |
| 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 | 23.31 | 54 |
| 3.2 Lifelong Learning..... | 64.38 | 25 |
| 3.2.1 Quality of management schools..... | 62.43 | 32 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 66.33 | 24 |
| 3.3 Access to Growth Opportunities | 53.49 | 44 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 52.79 | 36 |
| 3.3.2 Personal rights..... | 25.01 | 103 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 88.18 | 17 |
| 3.3.4 Use of virtual professional networks..... | 30.63 | 30 |
| 3.3.5 Collaboration within organisations | 51.38 | 35 |
| 3.3.6 Collaboration across organisations | 72.95 | 42 |
| 4 RETAIN..... | 54.49 | 54 |
| 4.1 Sustainability | 49.06 | 41 |
| 4.1.1 Pension system | 18.37 | 78 |
| 4.1.2 Social protection | 66.18 | 23 |
| 4.1.3 Brain retention | 62.64 | 27 |
| 4.2 Lifestyle..... | 59.91 | 66 |
| 4.2.1 Environmental performance..... | 61.53 | 75 |
| 4.2.2 Personal safety | 64.29 | 65 |
| 4.2.3 Physician density | 14.74 | 82 |
| 4.2.4 Sanitation | 99.09 | 20 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 48.97 | 47 |
| 5.1 Mid-Level Skills | 27.31 | 77 |
| 5.1.1 Workforce with secondary education | n/a | n/a |
| 5.1.2 Population with secondary education | 2.71 | 101 |
| 5.1.3 Technicians and associate professionals | n/a | n/a |
| 5.1.4 Labour productivity per employee..... | 51.91 | 22 |
| 5.2 Employability..... | 70.64 | 25 |
| 5.2.1 Ease of finding skilled employees | 64.36 | 33 |
| 5.2.2 Relevance of education system to the economy | 63.46 | 23 |
| 5.2.3 Skills matching with secondary education..... | 71.24 | 30 |
| 5.2.4 Skills matching with tertiary education | 83.49 | 23 |
| 6 GLOBAL KNOWLEDGE SKILLS | 20.18 | 79 |
| 6.1 High-Level Skills | 28.49 | 62 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 30.36 | 41 |
| 6.1.3 Professionals..... | n/a | n/a |
| 6.1.4 Researchers..... | 4.24 | 66 |
| 6.1.5 Senior officials and managers | n/a | n/a |
| 6.1.6 Availability of scientists and engineers | 50.88 | 41 |
| 6.2 Talent Impact..... | 11.87 | 96 |
| 6.2.1 Innovation output..... | 28.12 | 66 |
| 6.2.2 High-value exports..... | 1.88 | 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..... | 5.61 | 89 |

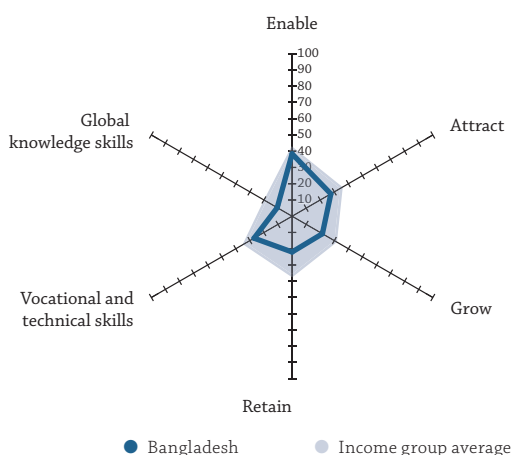
BANGLADESH

Key Indicators

| | |
|-----------------------------|----------------------------------|
| Rank (out of 119)..... | 114 |
| Income group | Lower middle income |
| Regional group | Central and Southern Asia |
| Population (millions) | 161.00 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 3,332.80 |
| GDP (US\$ billions) | 195.08 |
| GTCI score | 24.50 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 38.37 | 101 |
| 1.1 Regulatory Landscape..... | 29.38 | 111 |
| 1.1.1 Government effectiveness | 23.39 | 106 |
| 1.1.2 Business-government relations | 49.23 | 78 |
| 1.1.3 Political stability | 35.92 | 110 |
| 1.1.4 Regulatory quality | 22.57 | 111 |
| 1.1.5 Corruption | 15.79 | 110 |
| 1.2 Market Landscape..... | 33.57 | 101 |
| 1.2.1 Competition intensity | 68.00 | 66 |
| 1.2.2 Ease of doing business | 13.93 | 117 |
| 1.2.3 Cluster development | 40.56 | 71 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 11.46 | 109 |
| 1.2.6 Technology utilisation | 33.92 | 84 |
| 1.3 Business and Labour Landscape..... | 52.16 | 72 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 46.96 | 103 |
| 1.3.4 Labour-employer cooperation | 44.72 | 79 |
| Management Practice | | |
| 1.3.5 Professional management..... | 24.93 | 92 |
| 1.3.6 Relationship of pay to productivity..... | 36.36 | 76 |
| 2 ATTRACT..... | 27.53 | 112 |
| 2.1 External Openness | 20.46 | 111 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 31.07 | 101 |
| 2.1.2 Prevalence of foreign ownership | 39.75 | 99 |
| Attract People | | |
| 2.1.3 Migrant stock | 1.79 | 95 |
| 2.1.4 International students..... | 0.37 | 96 |
| 2.1.5 Brain gain | 29.32 | 84 |
| 2.2 Internal Openness | 34.60 | 108 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 18.39 | 103 |
| 2.2.2 Tolerance of immigrants..... | 64.79 | 46 |
| 2.2.3 Social mobility..... | 38.42 | 74 |
| Gender Equality | | |
| 2.2.4 Female graduates | 35.00 | 95 |
| 2.2.5 Gender earnings gap | 27.71 | 102 |
| 2.2.6 Leadership opportunities for women..... | 23.30 | 92 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 21.54 | 114 |
| 3.1 Formal Education..... | 11.22 | 105 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 6.59 | 91 |
| 3.1.2 Tertiary enrolment..... | 11.18 | 95 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 8.95 | 87 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 18.16 | 67 |
| 3.2 Lifelong Learning..... | 24.39 | 112 |
| 3.2.1 Quality of management schools..... | 29.89 | 96 |
| 3.2.2 Prevalence of training in firms | 24.41 | 72 |
| 3.2.3 Employee development..... | 18.86 | 108 |
| 3.3 Access to Growth Opportunities | 29.00 | 112 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 23.18 | 106 |
| 3.3.2 Personal rights..... | 30.33 | 94 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 46.97 | 100 |
| 3.3.4 Use of virtual professional networks..... | 0.88 | 110 |
| 3.3.5 Collaboration within organisations | 18.22 | 110 |
| 3.3.6 Collaboration across organisations | 54.44 | 109 |
| 4 RETAIN..... | 22.00 | 115 |
| 4.1 Sustainability | 11.01 | 117 |
| 4.1.1 Pension system | 1.02 | 103 |
| 4.1.2 Social protection | 1.71 | 118 |
| 4.1.3 Brain retention | 30.30 | 85 |
| 4.2 Lifestyle | 33.00 | 104 |
| 4.2.1 Environmental performance..... | 8.72 | 117 |
| 4.2.2 Personal safety | 62.12 | 67 |
| 4.2.3 Physician density | 5.93 | 92 |
| 4.2.4 Sanitation | 55.23 | 97 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 27.01 | 110 |
| 5.1 Mid-Level Skills | 9.54 | 105 |
| 5.1.1 Workforce with secondary education | 17.94 | 81 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 7.17 | 101 |
| 5.1.4 Labour productivity per employee..... | 3.52 | 91 |
| 5.2 Employability..... | 44.48 | 93 |
| 5.2.1 Ease of finding skilled employees | 27.72 | 101 |
| 5.2.2 Relevance of education system to the economy | 35.82 | 74 |
| 5.2.3 Skills matching with secondary education..... | 51.20 | 103 |
| 5.2.4 Skills matching with tertiary education | 63.17 | 90 |
| 6 GLOBAL KNOWLEDGE SKILLS | 10.56 | 104 |
| 6.1 High-Level Skills | 15.53 | 92 |
| 6.1.1 Workforce with tertiary education | 8.77 | 94 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals | 10.98 | 90 |
| 6.1.4 Researchers | n/a | n/a |
| 6.1.5 Senior officials and managers | 5.00 | 97 |
| 6.1.6 Availability of scientists and engineers | 37.35 | 66 |
| 6.2 Talent Impact..... | 5.60 | 115 |
| 6.2.1 Innovation output..... | 13.88 | 103 |
| 6.2.2 High-value exports..... | n/a | n/a |
| 6.2.3 New product entrepreneurial activity | 0.99 | 88 |
| 6.2.4 New business density | 0.35 | 91 |
| 6.2.5 Scientific journal articles..... | 7.17 | 83 |

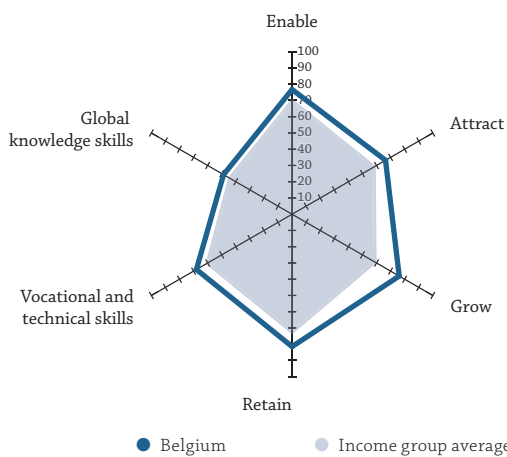
BELGIUM

Key Indicators

| | |
|----------------------------|--------------------|
| Rank (out of 119)..... | 16 |
| Income group..... | High income |
| Regional group..... | Europe |
| Population (millions)..... | 11.29 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 43,991.60 |
| GDP (US\$ billions) | 454.04 |
| GTCI score..... | 69.56 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------|------|
| 1 ENABLE.....76.73 21 | | |
| 1.1 Regulatory Landscape..... | 72.92 | 22 |
| 1.1.1 Government effectiveness | 79.18 | 20 |
| 1.1.2 Business-government relations..... | 47.90 | 81 |
| 1.1.3 Political stability..... | 78.40 | 36 |
| 1.1.4 Regulatory quality..... | 76.21 | 19 |
| 1.1.5 Corruption..... | 82.89 | 15 |
| 1.2 Market Landscape..... | 75.57 | 15 |
| 1.2.1 Competition intensity..... | 89.14 | 11 |
| 1.2.2 Ease of doing business..... | 73.88 | 39 |
| 1.2.3 Cluster development..... | 70.59 | 23 |
| 1.2.4 R&D expenditure..... | 57.24 | 11 |
| 1.2.5 ICT infrastructure..... | 86.22 | 20 |
| 1.2.6 Technology utilisation..... | 76.33 | 20 |
| 1.3 Business and Labour Landscape..... | 81.71 | 12 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 89.00 | 25 |
| 1.3.2 Ease of redundancy..... | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 81.01 | 15 |
| 1.3.4 Labour-employer cooperation..... | 60.43 | 34 |
| Management Practice | | |
| 1.3.5 Professional management..... | 91.12 | 10 |
| 1.3.6 Relationship of pay to productivity..... | 68.69 | 21 |
| 2 ATTRACT.....66.40 15 | | |
| 2.1 External Openness..... | 60.42 | 15 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 74.15 | 10 |
| 2.1.2 Prevalence of foreign ownership..... | 84.69 | 10 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 26.94 | 30 |
| 2.1.4 International students..... | 58.31 | 14 |
| 2.1.5 Brain gain..... | 58.03 | 27 |
| 2.2 Internal Openness..... | 72.38 | 14 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 67.82 | 22 |
| 2.2.2 Tolerance of immigrants..... | 77.46 | 30 |
| 2.2.3 Social mobility..... | 76.57 | 19 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 82.54 | 34 |
| 2.2.5 Gender earnings gap..... | 57.83 | 38 |
| 2.2.6 Leadership opportunities for women..... | 72.04 | 18 |

| | Score | Rank |
|---|-------|------|
| 3 GROW.....76.09 9 | | |
| 3.1 Formal Education..... | 62.98 | 5 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 73.57 | 4 |
| 3.1.2 Tertiary enrolment..... | 64.14 | 22 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 33.50 | 24 |
| 3.1.4 Reading, maths, and science..... | 76.89 | 17 |
| 3.1.5 University ranking..... | 66.77 | 15 |
| 3.2 Lifelong Learning..... | 87.57 | 5 |
| 3.2.1 Quality of management schools..... | 93.65 | 3 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 81.48 | 14 |
| 3.3 Access to Growth Opportunities..... | 77.72 | 15 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 77.65 | 13 |
| 3.3.2 Personal rights..... | 85.76 | 23 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 83.33 | 25 |
| 3.3.4 Use of virtual professional networks..... | 66.01 | 14 |
| 3.3.5 Collaboration within organisations..... | 68.03 | 22 |
| 3.3.6 Collaboration across organisations..... | 85.55 | 19 |
| 4 RETAIN.....81.44 13 | | |
| 4.1 Sustainability..... | 83.77 | 10 |
| 4.1.1 Pension system..... | 90.82 | 15 |
| 4.1.2 Social protection..... | 93.76 | 6 |
| 4.1.3 Brain retention..... | 66.74 | 22 |
| 4.2 Lifestyle..... | 79.11 | 25 |
| 4.2.1 Environmental performance..... | 80.35 | 40 |
| 4.2.2 Personal safety..... | 89.37 | 21 |
| 4.2.3 Physician density..... | 47.28 | 33 |
| 4.2.4 Sanitation..... | 99.43 | 17 |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....67.99 12 | | |
| 5.1 Mid-Level Skills..... | 51.28 | 25 |
| 5.1.1 Workforce with secondary education..... | 34.48 | 46 |
| 5.1.2 Population with secondary education..... | 46.79 | 38 |
| 5.1.3 Technicians and associate professionals..... | 60.09 | 25 |
| 5.1.4 Labour productivity per employee..... | 63.74 | 10 |
| 5.2 Employability..... | 84.70 | 9 |
| 5.2.1 Ease of finding skilled employees..... | 80.53 | 13 |
| 5.2.2 Relevance of education system to the economy..... | 86.54 | 4 |
| 5.2.3 Skills matching with secondary education..... | 84.00 | 8 |
| 5.2.4 Skills matching with tertiary education..... | 87.75 | 15 |
| 6 GLOBAL KNOWLEDGE SKILLS.....48.70 20 | | |
| 6.1 High-Level Skills..... | 54.96 | 18 |
| 6.1.1 Workforce with tertiary education..... | 59.81 | 13 |
| 6.1.2 Population with tertiary education..... | 30.87 | 40 |
| 6.1.3 Professionals..... | 66.47 | 10 |
| 6.1.4 Researchers..... | 59.00 | 12 |
| 6.1.5 Senior officials and managers..... | 51.25 | 19 |
| 6.1.6 Availability of scientists and engineers..... | 62.35 | 22 |
| 6.2 Talent Impact..... | 42.44 | 27 |
| 6.2.1 Innovation output..... | 55.01 | 26 |
| 6.2.2 High-value exports..... | 24.48 | 33 |
| 6.2.3 New product entrepreneurial activity..... | 59.59 | 19 |
| 6.2.4 New business density..... | 11.72 | 45 |
| 6.2.5 Scientific journal articles..... | 61.38 | 21 |

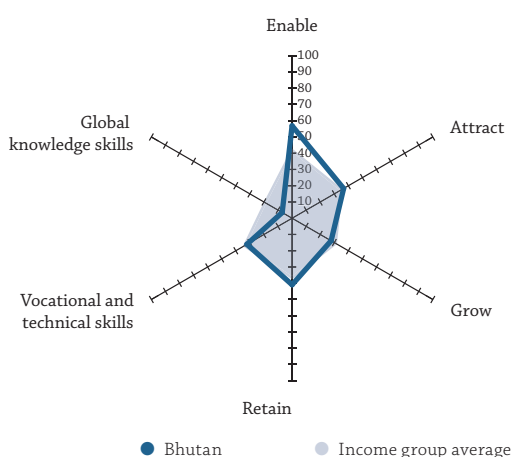
BHUTAN

Key Indicators

| | |
|-----------------------------|----------------------------------|
| Rank (out of 119)..... | 91 |
| Income group | Lower middle income |
| Regional group | Central and Southern Asia |
| Population (millions) | 0.77 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 8,076.96 |
| GDP (US\$ billions) | 1.96 |
| GTCI score | 33.54 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 56.86 | 44 |
| 1.1 Regulatory Landscape..... | 59.66 | 42 |
| 1.1.1 Government effectiveness | 52.70 | 46 |
| 1.1.2 Business-government relations | 60.04 | 56 |
| 1.1.3 Political stability | 90.53 | 9 |
| 1.1.4 Regulatory quality | 27.91 | 104 |
| 1.1.5 Corruption | 67.11 | 25 |
| 1.2 Market Landscape | 41.63 | 77 |
| 1.2.1 Competition intensity | 54.57 | 92 |
| 1.2.2 Ease of doing business | 59.66 | 66 |
| 1.2.3 Cluster development | 38.39 | 76 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 30.42 | 94 |
| 1.2.6 Technology utilisation | 25.09 | 99 |
| 1.3 Business and Labour Landscape..... | 69.29 | 29 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 69.64 | 33 |
| 1.3.4 Labour-employer cooperation | 68.29 | 24 |
| Management Practice | | |
| 1.3.5 Professional management..... | 47.28 | 51 |
| 1.3.6 Relationship of pay to productivity..... | 50.51 | 55 |
| 2 ATTRACT..... | 36.62 | 90 |
| 2.1 External Openness | 26.57 | 94 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 28.98 | 107 |
| 2.1.2 Prevalence of foreign ownership | 16.30 | 116 |
| Attract People | | |
| 2.1.3 Migrant stock | 14.41 | 47 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain | 46.59 | 46 |
| 2.2 Internal Openness | 46.68 | 78 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 24.14 | 95 |
| 2.2.2 Tolerance of immigrants..... | 59.15 | 53 |
| 2.2.3 Social mobility..... | 60.76 | 30 |
| Gender Equality | | |
| 2.2.4 Female graduates | 14.57 | 99 |
| 2.2.5 Gender earnings gap | 49.40 | 67 |
| 2.2.6 Leadership opportunities for women..... | 72.04 | 18 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 27.73 | 99 |
| 3.1 Formal Education..... | 3.11 | 118 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 2.98 | 98 |
| 3.1.2 Tertiary enrolment..... | 8.96 | 97 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 0.51 | 104 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 36.96 | 76 |
| 3.2.1 Quality of management schools..... | 41.01 | 66 |
| 3.2.2 Prevalence of training in firms | 29.82 | 61 |
| 3.2.3 Employee development..... | 40.07 | 60 |
| 3.3 Access to Growth Opportunities | 43.11 | 81 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 48.04 | 47 |
| 3.3.2 Personal rights..... | 45.16 | 80 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 51.52 | 98 |
| 3.3.4 Use of virtual professional networks..... | 9.38 | 71 |
| 3.3.5 Collaboration within organisations | 37.83 | 62 |
| 3.3.6 Collaboration across organisations | 66.75 | 72 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 40.92 | 85 |
| 4.1 Sustainability | 35.68 | 68 |
| 4.1.1 Pension system | 12.24 | 83 |
| 4.1.2 Social protection | 42.86 | 43 |
| 4.1.3 Brain retention | 51.94 | 38 |
| 4.2 Lifestyle | 46.17 | 92 |
| 4.2.1 Environmental performance..... | 52.05 | 91 |
| 4.2.2 Personal safety | 85.13 | 23 |
| 4.2.3 Physician density | 3.85 | 97 |
| 4.2.4 Sanitation | 43.64 | 101 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 32.09 | 97 |
| 5.1 Mid-Level Skills | 9.52 | 106 |
| 5.1.1 Workforce with secondary education | 13.30 | 92 |
| 5.1.2 Population with secondary education | 0.00 | 104 |
| 5.1.3 Technicians and associate professionals | 15.25 | 89 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 54.67 | 60 |
| 5.2.1 Ease of finding skilled employees | 28.05 | 99 |
| 5.2.2 Relevance of education system to the economy | 54.33 | 39 |
| 5.2.3 Skills matching with secondary education..... | 65.21 | 53 |
| 5.2.4 Skills matching with tertiary education | 71.08 | 60 |

| | | |
|--|-------------|------------|
| 6 GLOBAL KNOWLEDGE SKILLS | 7.03 | 114 |
| 6.1 High-Level Skills | 12.32 | 102 |
| 6.1.1 Workforce with tertiary education | 7.30 | 97 |
| 6.1.2 Population with tertiary education | 5.49 | 91 |
| 6.1.3 Professionals | 22.54 | 68 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 11.25 | 87 |
| 6.1.6 Availability of scientists and engineers | 15.00 | 108 |
| 6.2 Talent Impact..... | 1.75 | 117 |
| 6.2.1 Innovation output..... | n/a | n/a |
| 6.2.2 High-value exports..... | 0.00 | 110 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 0.17 | 93 |
| 6.2.5 Scientific journal articles..... | 5.08 | 93 |

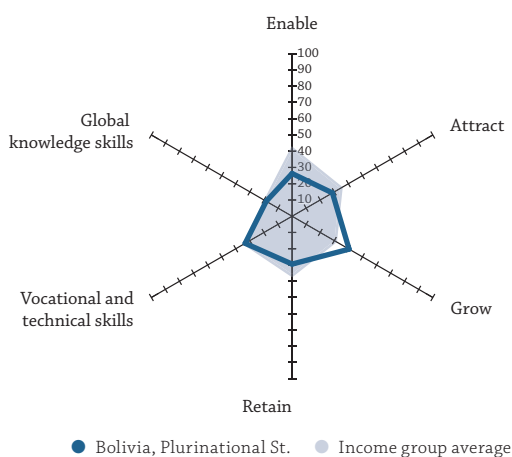
BOLIVIA, PLURINATIONAL ST.

Key Indicators

| | |
|----------------------------|---|
| Rank (out of 119)..... | 102 |
| Income group..... | Lower middle income |
| Regional group..... | Latin, Central America and Caribbean |
| Population (millions)..... | 10.72 |

| | |
|--|-----------------|
| GDP per capita (PPP US\$)..... | 6,880.90 |
| GDP (US\$ billions)..... | 33.20 |
| GTCI score..... | 29.44 |
| GTCI score (income group average)..... | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 26.29 | 117 |
| 1.1 Regulatory Landscape..... | 33.56 | 103 |
| 1.1.1 Government effectiveness..... | 25.19 | 100 |
| 1.1.2 Business-government relations..... | 37.53 | 100 |
| 1.1.3 Political stability..... | 57.04 | 76 |
| 1.1.4 Regulatory quality..... | 23.06 | 110 |
| 1.1.5 Corruption..... | 25.00 | 86 |
| 1.2 Market Landscape..... | 26.97 | 111 |
| 1.2.1 Competition intensity..... | 63.14 | 76 |
| 1.2.2 Ease of doing business..... | 30.72 | 112 |
| 1.2.3 Cluster development..... | 16.10 | 115 |
| 1.2.4 R&D expenditure..... | 3.50 | 86 |
| 1.2.5 ICT infrastructure..... | 34.24 | 89 |
| 1.2.6 Technology utilisation..... | 14.13 | 109 |
| 1.3 Business and Labour Landscape..... | 18.32 | 119 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 11.00 | 114 |
| 1.3.2 Ease of redundancy..... | 0.00 | 118 |
| 1.3.3 Active labour market policies..... | 44.39 | 111 |
| 1.3.4 Labour-employer cooperation..... | 26.02 | 113 |
| Management Practice | | |
| 1.3.5 Professional management..... | 14.04 | 111 |
| 1.3.6 Relationship of pay to productivity..... | 14.48 | 115 |
| 2 ATTRACT..... | 28.67 | 110 |
| 2.1 External Openness..... | 19.88 | 113 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 25.33 | 111 |
| 2.1.2 Prevalence of foreign ownership..... | 27.90 | 111 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 2.78 | 88 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 23.49 | 98 |
| 2.2 Internal Openness..... | 37.45 | 103 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 40.23 | 68 |
| 2.2.2 Tolerance of immigrants..... | 66.20 | 45 |
| 2.2.3 Social mobility..... | 30.25 | 99 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | n/a | n/a |
| 2.2.5 Gender earnings gap..... | 50.60 | 62 |
| 2.2.6 Leadership opportunities for women..... | 0.00 | 119 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 40.50 | 59 |
| 3.1 Formal Education..... | 48.85 | 27 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 100.00 | 1 |
| 3.1.2 Tertiary enrolment..... | n/a | n/a |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 46.55 | 10 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 37.01 | 75 |
| 3.2.1 Quality of management schools..... | 26.72 | 102 |
| 3.2.2 Prevalence of training in firms..... | 70.84 | 12 |
| 3.2.3 Employee development..... | 13.47 | 114 |
| 3.3 Access to Growth Opportunities..... | 35.65 | 103 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 24.58 | 101 |
| 3.3.2 Personal rights..... | 42.21 | 82 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 45.76 | 104 |
| 3.3.4 Use of virtual professional networks..... | 8.44 | 75 |
| 3.3.5 Collaboration within organisations..... | 15.89 | 113 |
| 3.3.6 Collaboration across organisations..... | 77.02 | 33 |
| 4 RETAIN..... | 29.44 | 105 |
| 4.1 Sustainability..... | 15.78 | 113 |
| 4.1.1 Pension system..... | 10.20 | 84 |
| 4.1.2 Social protection..... | 13.68 | 108 |
| 4.1.3 Brain retention..... | 23.46 | 98 |
| 4.2 Lifestyle..... | 43.10 | 96 |
| 4.2.1 Environmental performance..... | 63.44 | 67 |
| 4.2.2 Personal safety..... | 58.22 | 76 |
| 4.2.3 Physician density..... | 7.21 | 91 |
| 4.2.4 Sanitation..... | 43.52 | 102 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 33.34 | 93 |
| 5.1 Mid-Level Skills..... | 24.43 | 83 |
| 5.1.1 Workforce with secondary education..... | 32.91 | 53 |
| 5.1.2 Population with secondary education..... | 26.25 | 70 |
| 5.1.3 Technicians and associate professionals..... | 31.39 | 69 |
| 5.1.4 Labour productivity per employee..... | 7.17 | 86 |
| 5.2 Employability..... | 42.26 | 100 |
| 5.2.1 Ease of finding skilled employees..... | 28.71 | 97 |
| 5.2.2 Relevance of education system to the economy..... | 19.23 | 105 |
| 5.2.3 Skills matching with secondary education..... | 58.00 | 80 |
| 5.2.4 Skills matching with tertiary education..... | 63.08 | 91 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 18.39 | 84 |
| 6.1 High-Level Skills..... | 14.93 | 96 |
| 6.1.1 Workforce with tertiary education..... | 20.47 | 82 |
| 6.1.2 Population with tertiary education..... | 35.85 | 27 |
| 6.1.3 Professionals..... | 18.21 | 74 |
| 6.1.4 Researchers..... | 1.86 | 80 |
| 6.1.5 Senior officials and managers..... | 4.38 | 99 |
| 6.1.6 Availability of scientists and engineers..... | 8.82 | 114 |
| 6.2 Talent Impact..... | 21.85 | 71 |
| 6.2.1 Innovation output..... | 17.22 | 95 |
| 6.2.2 High-value exports..... | 12.24 | 58 |
| 6.2.3 New product entrepreneurial activity..... | 74.86 | 8 |
| 6.2.4 New business density..... | 3.13 | 79 |
| 6.2.5 Scientific journal articles..... | 1.80 | 111 |

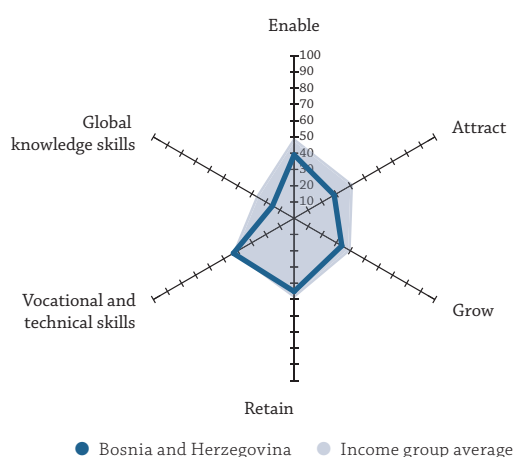
BOSNIA AND HERZEGOVINA

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 89 |
| Income group | Upper middle income |
| Regional group | Europe |
| Population (millions) | 3.81 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 10,509.70 |
| GDP (US\$ billions) | 16.00 |
| GTCI score | 34.15 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 38.95 | 97 |
| 1.1 Regulatory Landscape..... | 43.33 | 81 |
| 1.1.1 Government effectiveness | 28.28 | 96 |
| 1.1.2 Business-government relations | 61.81 | 48 |
| 1.1.3 Political stability | 52.91 | 83 |
| 1.1.4 Regulatory quality | 40.78 | 77 |
| 1.1.5 Corruption | 32.89 | 67 |
| 1.2 Market Landscape..... | 38.20 | 90 |
| 1.2.1 Competition intensity | 49.43 | 106 |
| 1.2.2 Ease of doing business | 56.86 | 73 |
| 1.2.3 Cluster development | 25.39 | 97 |
| 1.2.4 R&D expenditure | 5.84 | 76 |
| 1.2.5 ICT infrastructure | 51.02 | 67 |
| 1.2.6 Technology utilisation | 40.64 | 70 |
| 1.3 Business and Labour Landscape..... | 35.32 | 111 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 44.33 | 94 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 46.01 | 107 |
| 1.3.4 Labour-employer cooperation | 30.35 | 108 |
| Management Practice | | |
| 1.3.5 Professional management..... | 7.45 | 117 |
| 1.3.6 Relationship of pay to productivity..... | 13.80 | 116 |
| 2 ATTRACT..... | 28.49 | 111 |
| 2.1 External Openness | 22.66 | 105 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 26.89 | 109 |
| 2.1.2 Prevalence of foreign ownership | 37.04 | 101 |
| Attract People | | |
| 2.1.3 Migrant stock | 1.85 | 94 |
| 2.1.4 International students..... | 38.87 | 23 |
| 2.1.5 Brain gain | 8.63 | 116 |
| 2.2 Internal Openness | 34.32 | 109 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 33.33 | 79 |
| 2.2.2 Tolerance of immigrants | 36.62 | 94 |
| 2.2.3 Social mobility..... | 11.99 | 116 |
| Gender Equality | | |
| 2.2.4 Female graduates | 82.01 | 37 |
| 2.2.5 Gender earnings gap | 33.73 | 96 |
| 2.2.6 Leadership opportunities for women | 8.24 | 109 |

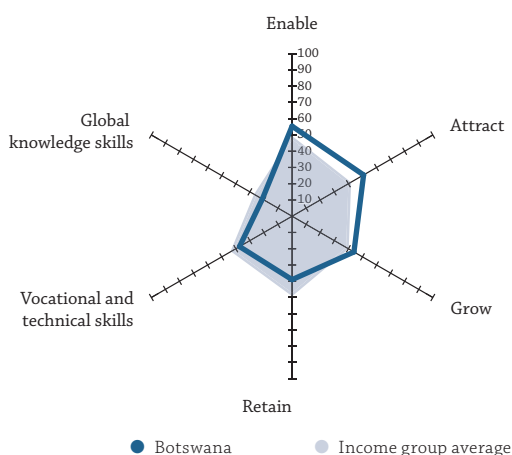
| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 33.90 | 83 |
| 3.1 Formal Education..... | 30.88 | 59 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 61.76 | 9 |
| 3.1.2 Tertiary enrolment..... | n/a | n/a |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | n/a | n/a |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 32.77 | 91 |
| 3.2.1 Quality of management schools..... | 22.22 | 108 |
| 3.2.2 Prevalence of training in firms..... | 64.64 | 20 |
| 3.2.3 Employee development..... | 11.45 | 117 |
| 3.3 Access to Growth Opportunities | 38.06 | 98 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 24.02 | 103 |
| 3.3.2 Personal rights..... | 51.20 | 70 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 61.52 | 83 |
| 3.3.4 Use of virtual professional networks..... | 10.29 | 69 |
| 3.3.5 Collaboration within organisations | 24.11 | 101 |
| 3.3.6 Collaboration across organisations | 57.23 | 101 |
| 4 RETAIN..... | 45.07 | 70 |
| 4.1 Sustainability | 29.06 | 84 |
| 4.1.1 Pension system | 70.41 | 33 |
| 4.1.2 Social protection | 10.84 | 110 |
| 4.1.3 Brain retention | 5.92 | 115 |
| 4.2 Lifestyle | 61.09 | 63 |
| 4.2.1 Environmental performance..... | 48.86 | 97 |
| 4.2.2 Personal safety | 71.42 | 45 |
| 4.2.3 Physician density | 29.97 | 60 |
| 4.2.4 Sanitation | 94.09 | 51 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 43.13 | 61 |
| 5.1 Mid-Level Skills | 49.76 | 27 |
| 5.1.1 Workforce with secondary education | 58.16 | 5 |
| 5.1.2 Population with secondary education | 70.33 | 13 |
| 5.1.3 Technicians and associate professionals | 40.81 | 54 |
| 5.1.4 Labour productivity per employee..... | 29.74 | 54 |
| 5.2 Employability..... | 36.51 | 112 |
| 5.2.1 Ease of finding skilled employees | 20.13 | 111 |
| 5.2.2 Relevance of education system to the economy | 11.78 | 113 |
| 5.2.3 Skills matching with secondary education..... | 58.49 | 77 |
| 5.2.4 Skills matching with tertiary education | 55.63 | 112 |
| 6 GLOBAL KNOWLEDGE SKILLS | 15.33 | 95 |
| 6.1 High-Level Skills | 17.60 | 87 |
| 6.1.1 Workforce with tertiary education | 20.32 | 83 |
| 6.1.2 Population with tertiary education | 15.61 | 74 |
| 6.1.3 Professionals | 30.92 | 54 |
| 6.1.4 Researchers | 3.84 | 69 |
| 6.1.5 Senior officials and managers | 18.13 | 67 |
| 6.1.6 Availability of scientists and engineers | 16.76 | 105 |
| 6.2 Talent Impact..... | 13.07 | 91 |
| 6.2.1 Innovation output..... | 18.28 | 92 |
| 6.2.2 High-value exports..... | 5.27 | 84 |
| 6.2.3 New product entrepreneurial activity | 18.91 | 80 |
| 6.2.4 New business density | 4.64 | 74 |
| 6.2.5 Scientific journal articles..... | 18.25 | 60 |

BOTSWANA

Key Indicators

| | |
|----------------------------|----------------------------|
| Rank (out of 119)..... | 62 |
| Income group | Upper middle income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions)..... | 2.26 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 55.40 | 46 |
| 1.1 Regulatory Landscape..... | 66.37 | 29 |
| 1.1.1 Government effectiveness..... | 55.27 | 41 |
| 1.1.2 Business-government relations..... | 70.20 | 27 |
| 1.1.3 Political stability..... | 88.83 | 12 |
| 1.1.4 Regulatory quality..... | 57.04 | 46 |
| 1.1.5 Corruption..... | 60.53 | 31 |
| 1.2 Market Landscape..... | 41.46 | 78 |
| 1.2.1 Competition intensity..... | 72.57 | 47 |
| 1.2.2 Ease of doing business..... | 59.99 | 65 |
| 1.2.3 Cluster development..... | 34.37 | 84 |
| 1.2.4 R&D expenditure..... | 5.61 | 77 |
| 1.2.5 ICT infrastructure..... | 36.29 | 87 |
| 1.2.6 Technology utilisation..... | 39.93 | 71 |
| 1.3 Business and Labour Landscape..... | 58.35 | 55 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 100.00 | 1 |
| 1.3.2 Ease of redundancy..... | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 56.33 | 71 |
| 1.3.4 Labour-employer cooperation..... | 49.59 | 62 |
| Management Practice | | |
| 1.3.5 Professional management..... | 51.86 | 39 |
| 1.3.6 Relationship of pay to productivity..... | 32.32 | 91 |
| 2 ATTRACT..... | 50.80 | 36 |
| 2.1 External Openness..... | 38.75 | 54 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 40.47 | 85 |
| 2.1.2 Prevalence of foreign ownership..... | 76.79 | 23 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 15.51 | 46 |
| 2.1.4 International students..... | 8.36 | 70 |
| 2.1.5 Brain gain..... | 52.61 | 34 |
| 2.2 Internal Openness..... | 62.85 | 25 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 52.87 | 46 |
| 2.2.2 Tolerance of immigrants..... | 74.65 | 34 |
| 2.2.3 Social mobility..... | 52.32 | 43 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | n/a | n/a |
| 2.2.5 Gender earnings gap..... | 86.75 | 3 |
| 2.2.6 Leadership opportunities for women..... | 47.67 | 51 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 15,807.10 |
| GDP (US\$ billions)..... | 14.39 |
| GTCI score..... | 41.27 |
| GTCI score (income group average)..... | 40.93 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 43.95 | 48 |
| 3.1 Formal Education..... | 33.17 | 54 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 9.05 | 81 |
| 3.1.2 Tertiary enrolment..... | 23.62 | 81 |
| 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 | 76 |
| 3.2 Lifelong Learning..... | 48.01 | 51 |
| 3.2.1 Quality of management schools..... | 31.22 | 94 |
| 3.2.2 Prevalence of training in firms..... | 63.98 | 21 |
| 3.2.3 Employee development..... | 48.82 | 44 |
| 3.3 Access to Growth Opportunities..... | 50.69 | 53 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 47.77 | 48 |
| 3.3.2 Personal rights..... | 76.03 | 34 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 56.97 | 90 |
| 3.3.4 Use of virtual professional networks..... | 17.10 | 57 |
| 3.3.5 Collaboration within organisations..... | 39.26 | 59 |
| 3.3.6 Collaboration across organisations..... | 67.00 | 70 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 39.01 | 90 |
| 4.1 Sustainability..... | 29.02 | 85 |
| 4.1.1 Pension system..... | 7.14 | 90 |
| 4.1.2 Social protection..... | 35.05 | 67 |
| 4.1.3 Brain retention..... | 44.87 | 52 |
| 4.2 Lifestyle..... | 49.00 | 89 |
| 4.2.1 Environmental performance..... | 62.75 | 70 |
| 4.2.2 Personal safety..... | 69.09 | 54 |
| 4.2.3 Physician density..... | 5.77 | 94 |
| 4.2.4 Sanitation..... | 58.41 | 94 |

| | | |
|---|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 37.33 | 82 |
| 5.1 Mid-Level Skills..... | 24.36 | 84 |
| 5.1.1 Workforce with secondary education..... | 14.64 | 89 |
| 5.1.2 Population with secondary education..... | n/a | n/a |
| 5.1.3 Technicians and associate professionals..... | 34.08 | 61 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 50.29 | 74 |
| 5.2.1 Ease of finding skilled employees..... | 35.31 | 83 |
| 5.2.2 Relevance of education system to the economy..... | 41.83 | 57 |
| 5.2.3 Skills matching with secondary education..... | 54.60 | 96 |
| 5.2.4 Skills matching with tertiary education..... | 69.43 | 68 |

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|---|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS..... | 21.15 | 77 |
| 6.1 High-Level Skills..... | 17.30 | 88 |
| 6.1.1 Workforce with tertiary education..... | 22.46 | 79 |
| 6.1.2 Population with tertiary education..... | n/a | n/a |
| 6.1.3 Professionals..... | 17.05 | 78 |
| 6.1.4 Researchers..... | 1.98 | 79 |
| 6.1.5 Senior officials and managers..... | 20.00 | 64 |
| 6.1.6 Availability of scientists and engineers..... | 25.00 | 95 |
| 6.2 Talent Impact..... | 25.00 | 58 |
| 6.2.1 Innovation output..... | 13.18 | 105 |
| 6.2.2 High-value exports..... | 1.13 | 104 |
| 6.2.3 New product entrepreneurial activity..... | 27.26 | 70 |
| 6.2.4 New business density..... | 75.91 | 7 |
| 6.2.5 Scientific journal articles..... | 7.50 | 81 |

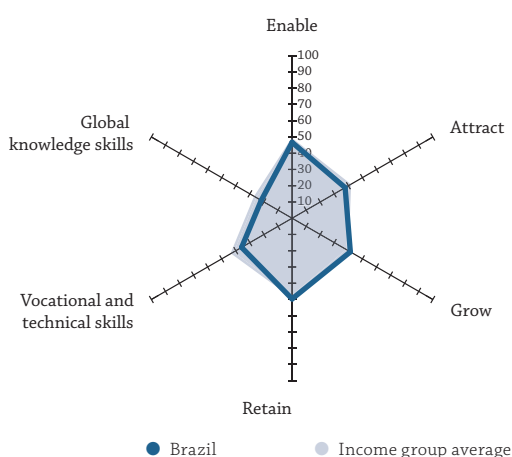
BRAZIL

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 73 |
| Income group | Upper middle income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 207.85 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 15,359.30 |
| GDP (US\$ billions) | 1,774.73 |
| GTCI score | 38.86 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE | 46.66 | 79 |
| 1.1 Regulatory Landscape..... | 42.24 | 83 |
| 1.1.1 Government effectiveness | 37.28 | 79 |
| 1.1.2 Business-government relations | 45.03 | 89 |
| 1.1.3 Political stability | 54.61 | 79 |
| 1.1.4 Regulatory quality | 40.05 | 80 |
| 1.1.5 Corruption | 34.21 | 64 |
| 1.2 Market Landscape | 50.17 | 55 |
| 1.2.1 Competition intensity | 72.29 | 49 |
| 1.2.2 Ease of doing business | 43.18 | 99 |
| 1.2.3 Cluster development | 50.46 | 42 |
| 1.2.4 R&D expenditure | 28.74 | 30 |
| 1.2.5 ICT infrastructure | 61.12 | 56 |
| 1.2.6 Technology utilisation | 45.23 | 61 |
| 1.3 Business and Labour Landscape..... | 47.58 | 88 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 22.33 | 105 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 47.43 | 99 |
| 1.3.4 Labour-employer cooperation | 33.33 | 100 |
| Management Practice | | |
| 1.3.5 Professional management..... | 46.70 | 54 |
| 1.3.6 Relationship of pay to productivity..... | 35.69 | 81 |
| 2 ATTRACT | 37.69 | 86 |
| 2.1 External Openness | 26.58 | 93 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 51.70 | 59 |
| 2.1.2 Prevalence of foreign ownership | 50.62 | 78 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.60 | 108 |
| 2.1.4 International students..... | 1.10 | 89 |
| 2.1.5 Brain gain | 28.92 | 85 |
| 2.2 Internal Openness | 48.79 | 65 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 47.13 | 56 |
| 2.2.2 Tolerance of immigrants..... | 71.83 | 37 |
| 2.2.3 Social mobility..... | 33.24 | 90 |
| Gender Equality | | |
| 2.2.4 Female graduates | 84.72 | 27 |
| 2.2.5 Gender earnings gap | 49.40 | 67 |
| 2.2.6 Leadership opportunities for women..... | 6.45 | 113 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW | 41.39 | 56 |
| 3.1 Formal Education..... | 30.69 | 61 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 5.91 | 93 |
| 3.1.2 Tertiary enrolment..... | 42.88 | 52 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 25.58 | 51 |
| 3.1.4 Reading, maths, and science | 26.34 | 62 |
| 3.1.5 University ranking | 52.74 | 25 |
| 3.2 Lifelong Learning..... | 42.20 | 61 |
| 3.2.1 Quality of management schools..... | 33.33 | 87 |
| 3.2.2 Prevalence of training in firms..... | 51.19 | 32 |
| 3.2.3 Employee development..... | 42.09 | 55 |
| 3.3 Access to Growth Opportunities | 51.28 | 51 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 43.58 | 63 |
| 3.3.2 Personal rights..... | 64.55 | 52 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 80.61 | 31 |
| 3.3.4 Use of virtual professional networks..... | 26.88 | 34 |
| 3.3.5 Collaboration within organisations | 28.90 | 86 |
| 3.3.6 Collaboration across organisations | 63.17 | 83 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN | 49.64 | 61 |
| 4.1 Sustainability | 45.22 | 49 |
| 4.1.1 Pension system | 54.08 | 46 |
| 4.1.2 Social protection | 33.06 | 73 |
| 4.1.3 Brain retention | 48.52 | 41 |
| 4.2 Lifestyle | 54.06 | 79 |
| 4.2.1 Environmental performance..... | 78.01 | 44 |
| 4.2.2 Personal safety | 28.45 | 112 |
| 4.2.3 Physician density | 29.33 | 61 |
| 4.2.4 Sanitation | 80.45 | 75 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS | 35.86 | 88 |
| 5.1 Mid-Level Skills | 32.57 | 67 |
| 5.1.1 Workforce with secondary education | 35.79 | 40 |
| 5.1.2 Population with secondary education | 41.80 | 46 |
| 5.1.3 Technicians and associate professionals | 36.32 | 58 |
| 5.1.4 Labour productivity per employee..... | 16.38 | 73 |
| 5.2 Employability..... | 39.16 | 110 |
| 5.2.1 Ease of finding skilled employees | 30.03 | 93 |
| 5.2.2 Relevance of education system to the economy | 13.46 | 112 |
| 5.2.3 Skills matching with secondary education..... | 51.29 | 102 |
| 5.2.4 Skills matching with tertiary education | 61.84 | 96 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 21.92 | 74 |
| 6.1 High-Level Skills | 22.95 | 77 |
| 6.1.1 Workforce with tertiary education | 26.01 | 72 |
| 6.1.2 Population with tertiary education | 21.44 | 62 |
| 6.1.3 Professionals | 27.46 | 59 |
| 6.1.4 Researchers | 8.32 | 55 |
| 6.1.5 Senior officials and managers | 31.25 | 41 |
| 6.1.6 Availability of scientists and engineers | 23.24 | 98 |
| 6.2 Talent Impact..... | 20.89 | 74 |
| 6.2.1 Innovation output..... | 24.25 | 79 |
| 6.2.2 High-value exports..... | 23.16 | 35 |
| 6.2.3 New product entrepreneurial activity | 13.63 | 83 |
| 6.2.4 New business density | 16.54 | 37 |
| 6.2.5 Scientific journal articles..... | 26.86 | 50 |

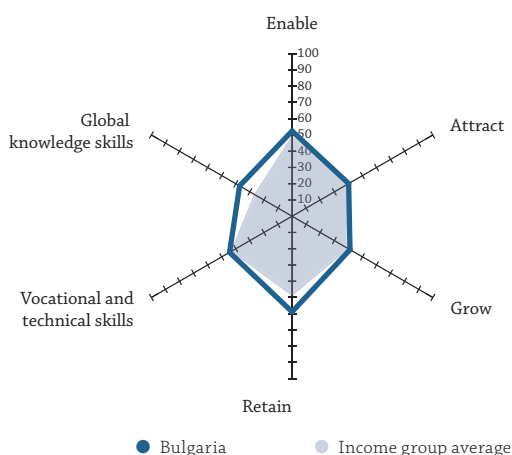
BULGARIA

Key Indicators

| | |
|----------------------------|----------------------------|
| Rank (out of 119)..... | 47 |
| Income group..... | Upper middle income |
| Regional group..... | Europe |
| Population (millions)..... | 7.18 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 17,511.80 |
| GDP (US\$ billions)..... | 48.95 |
| GTCI score..... | 45.72 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 52.42 | 53 |
| 1.1 Regulatory Landscape..... | 47.85 | 62 |
| 1.1.1 Government effectiveness..... | 47.81 | 56 |
| 1.1.2 Business-government relations..... | 33.11 | 110 |
| 1.1.3 Political stability..... | 64.32 | 57 |
| 1.1.4 Regulatory quality..... | 58.50 | 45 |
| 1.1.5 Corruption..... | 35.53 | 60 |
| 1.2 Market Landscape..... | 51.28 | 51 |
| 1.2.1 Competition intensity..... | 54.00 | 95 |
| 1.2.2 Ease of doing business..... | 74.83 | 36 |
| 1.2.3 Cluster development..... | 40.25 | 72 |
| 1.2.4 R&D expenditure..... | 18.46 | 41 |
| 1.2.5 ICT infrastructure..... | 70.67 | 42 |
| 1.2.6 Technology utilisation..... | 49.47 | 52 |
| 1.3 Business and Labour Landscape..... | 58.13 | 57 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 72.33 | 48 |
| 1.3.2 Ease of redundancy..... | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 62.40 | 54 |
| 1.3.4 Labour-employer cooperation..... | 44.72 | 79 |
| Management Practice | | |
| 1.3.5 Professional management..... | 25.21 | 89 |
| 1.3.6 Relationship of pay to productivity..... | 44.11 | 64 |
| 2 ATTRACT..... | 40.19 | 71 |
| 2.1 External Openness..... | 31.96 | 75 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 57.96 | 41 |
| 2.1.2 Prevalence of foreign ownership..... | 52.10 | 75 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 3.00 | 87 |
| 2.1.4 International students..... | 22.05 | 41 |
| 2.1.5 Brain gain..... | 24.70 | 93 |
| 2.2 Internal Openness..... | 48.41 | 67 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 55.17 | 45 |
| 2.2.2 Tolerance of immigrants..... | 29.58 | 103 |
| 2.2.3 Social mobility..... | 20.44 | 111 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 82.99 | 32 |
| 2.2.5 Gender earnings gap..... | 57.83 | 38 |
| 2.2.6 Leadership opportunities for women..... | 44.44 | 58 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 41.15 | 57 |
| 3.1 Formal Education..... | 39.25 | 40 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 49.76 | 19 |
| 3.1.2 Tertiary enrolment..... | 64.68 | 21 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 14.32 | 81 |
| 3.1.4 Reading, maths, and science..... | 47.29 | 43 |
| 3.1.5 University ranking..... | 20.18 | 63 |
| 3.2 Lifelong Learning..... | 35.82 | 77 |
| 3.2.1 Quality of management schools..... | 29.37 | 97 |
| 3.2.2 Prevalence of training in firms..... | 51.85 | 31 |
| 3.2.3 Employee development..... | 26.26 | 89 |
| 3.3 Access to Growth Opportunities..... | 48.37 | 59 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 32.12 | 89 |
| 3.3.2 Personal rights..... | 60.94 | 62 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 73.94 | 50 |
| 3.3.4 Use of virtual professional networks..... | 17.90 | 55 |
| 3.3.5 Collaboration within organisations..... | 36.98 | 65 |
| 3.3.6 Collaboration across organisations..... | 68.33 | 64 |
| 4 RETAIN..... | 58.82 | 46 |
| 4.1 Sustainability..... | 41.48 | 57 |
| 4.1.1 Pension system..... | 78.57 | 30 |
| 4.1.2 Social protection..... | 26.04 | 82 |
| 4.1.3 Brain retention..... | 19.82 | 107 |
| 4.2 Lifestyle..... | 76.17 | 35 |
| 4.2.1 Environmental performance..... | 86.41 | 33 |
| 4.2.2 Personal safety..... | 70.39 | 48 |
| 4.2.3 Physician density..... | 63.78 | 10 |
| 4.2.4 Sanitation..... | 84.09 | 71 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 44.43 | 57 |
| 5.1 Mid-Level Skills..... | 46.53 | 34 |
| 5.1.1 Workforce with secondary education..... | 49.37 | 15 |
| 5.1.2 Population with secondary education..... | 71.75 | 11 |
| 5.1.3 Technicians and associate professionals..... | 41.26 | 52 |
| 5.1.4 Labour productivity per employee..... | 23.74 | 62 |
| 5.2 Employability..... | 42.33 | 99 |
| 5.2.1 Ease of finding skilled employees..... | 21.45 | 109 |
| 5.2.2 Relevance of education system to the economy..... | 32.45 | 81 |
| 5.2.3 Skills matching with secondary education..... | 57.50 | 85 |
| 5.2.4 Skills matching with tertiary education..... | 57.91 | 107 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 37.30 | 38 |
| 6.1 High-Level Skills..... | 38.29 | 37 |
| 6.1.1 Workforce with tertiary education..... | 43.98 | 34 |
| 6.1.2 Population with tertiary education..... | 40.99 | 21 |
| 6.1.3 Professionals..... | 46.53 | 32 |
| 6.1.4 Researchers..... | 23.99 | 38 |
| 6.1.5 Senior officials and managers..... | 36.88 | 35 |
| 6.1.6 Availability of scientists and engineers..... | 37.35 | 66 |
| 6.2 Talent Impact..... | 36.31 | 44 |
| 6.2.1 Innovation output..... | 51.32 | 31 |
| 6.2.2 High-value exports..... | 14.31 | 49 |
| 6.2.3 New product entrepreneurial activity..... | 25.95 | 73 |
| 6.2.4 New business density..... | 51.25 | 12 |
| 6.2.5 Scientific journal articles..... | 38.73 | 43 |

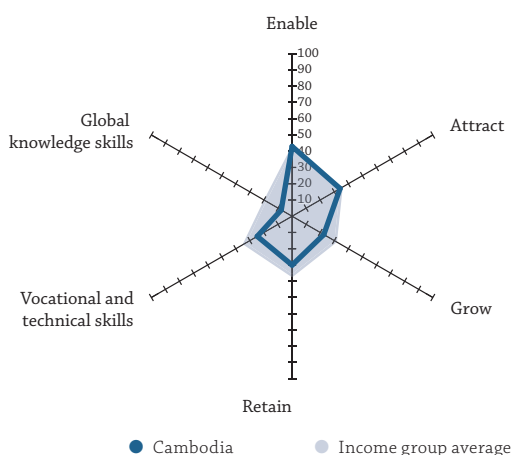
CAMBODIA

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 108 |
| Income group | Lower middle income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 15.58 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 3,483.33 |
| GDP (US\$ billions) | 18.05 |
| GTCI score | 27.02 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 42.95 | 88 |
| 1.1 Regulatory Landscape..... | 35.55 | 100 |
| 1.1.1 Government effectiveness | 24.42 | 104 |
| 1.1.2 Business-government relations | 49.23 | 78 |
| 1.1.3 Political stability | 61.41 | 67 |
| 1.1.4 Regulatory quality | 33.50 | 96 |
| 1.1.5 Corruption | 9.21 | 117 |
| 1.2 Market Landscape | 40.41 | 83 |
| 1.2.1 Competition intensity | 57.14 | 88 |
| 1.2.2 Ease of doing business | 39.93 | 103 |
| 1.2.3 Cluster development | 50.15 | 43 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 21.96 | 98 |
| 1.2.6 Technology utilisation | 32.86 | 89 |
| 1.3 Business and Labour Landscape..... | 52.89 | 68 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 57.68 | 68 |
| 1.3.4 Labour-employer cooperation | 49.32 | 64 |
| Management Practice | | |
| 1.3.5 Professional management..... | 27.22 | 86 |
| 1.3.6 Relationship of pay to productivity..... | 46.46 | 59 |
| 2 ATTRACT..... | 34.08 | 97 |
| 2.1 External Openness | 33.14 | 71 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 54.83 | 50 |
| 2.1.2 Prevalence of foreign ownership | 64.20 | 46 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.88 | 104 |
| 2.1.4 International students..... | 0.21 | 99 |
| 2.1.5 Brain gain | 45.58 | 48 |
| 2.2 Internal Openness | 35.01 | 107 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 29.89 | 84 |
| 2.2.2 Tolerance of immigrants..... | 0.00 | 117 |
| 2.2.3 Social mobility..... | 30.52 | 98 |
| Gender Equality | | |
| 2.2.4 Female graduates | 37.33 | 93 |
| 2.2.5 Gender earnings gap | 61.45 | 30 |
| 2.2.6 Leadership opportunities for women..... | 50.90 | 40 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 22.54 | 111 |
| 3.1 Formal Education..... | 3.62 | 117 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 3.61 | 97 |
| 3.1.2 Tertiary enrolment..... | 10.87 | 96 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 0.00 | 105 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 23.71 | 113 |
| 3.2.1 Quality of management schools..... | 19.05 | 112 |
| 3.2.2 Prevalence of training in firms..... | 24.80 | 69 |
| 3.2.3 Employee development..... | 27.27 | 88 |
| 3.3 Access to Growth Opportunities | 40.29 | 93 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 30.73 | 90 |
| 3.3.2 Personal rights..... | 35.99 | 88 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 69.39 | 61 |
| 3.3.4 Use of virtual professional networks..... | 1.98 | 100 |
| 3.3.5 Collaboration within organisations | 37.18 | 64 |
| 3.3.6 Collaboration across organisations | 66.49 | 73 |

| | | |
|--------------------------------------|--------------|------------|
| 4 RETAIN..... | 30.06 | 103 |
| 4.1 Sustainability | 32.48 | 70 |
| 4.1.1 Pension system | n/a | n/a |
| 4.1.2 Social protection | 19.40 | 96 |
| 4.1.3 Brain retention | 45.56 | 50 |
| 4.2 Lifestyle | 27.65 | 111 |
| 4.2.1 Environmental performance..... | 26.39 | 108 |
| 4.2.2 Personal safety | 47.25 | 96 |
| 4.2.3 Physician density | 2.40 | 101 |
| 4.2.4 Sanitation | 34.55 | 105 |

| | | |
|--|--------------|------------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 24.75 | 113 |
| 5.1 Mid-Level Skills | 7.27 | 109 |
| 5.1.1 Workforce with secondary education | 5.26 | 100 |
| 5.1.2 Population with secondary education | 5.85 | 95 |
| 5.1.3 Technicians and associate professionals | 15.70 | 88 |
| 5.1.4 Labour productivity per employee..... | 2.28 | 95 |
| 5.2 Employability..... | 42.23 | 101 |
| 5.2.1 Ease of finding skilled employees | 21.12 | 110 |
| 5.2.2 Relevance of education system to the economy | 32.93 | 77 |
| 5.2.3 Skills matching with secondary education..... | 44.80 | 112 |
| 5.2.4 Skills matching with tertiary education | 70.06 | 64 |

| | | |
|--|-------------|------------|
| 6 GLOBAL KNOWLEDGE SKILLS | 7.71 | 113 |
| 6.1 High-Level Skills | 7.05 | 113 |
| 6.1.1 Workforce with tertiary education | 3.82 | 102 |
| 6.1.2 Population with tertiary education | 1.54 | 102 |
| 6.1.3 Professionals..... | 10.12 | 91 |
| 6.1.4 Researchers..... | 0.22 | 97 |
| 6.1.5 Senior officials and managers | 11.88 | 85 |
| 6.1.6 Availability of scientists and engineers | 14.71 | 109 |
| 6.2 Talent Impact..... | 8.38 | 108 |
| 6.2.1 Innovation output..... | 21.09 | 85 |
| 6.2.2 High-value exports..... | 1.51 | 99 |
| 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..... | 2.53 | 107 |

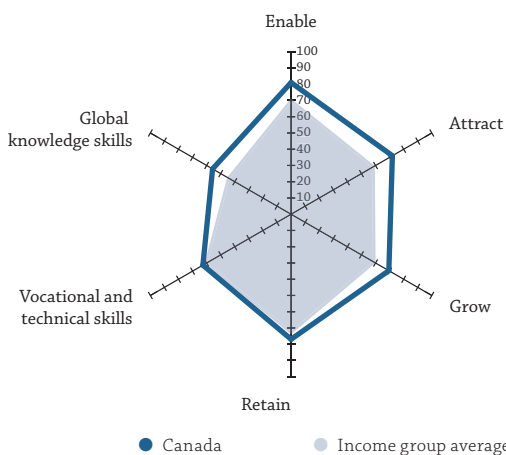
CANADA

Key Indicators

Rank (out of 119)..... **15**
 Income group..... **High income**
 Regional group..... **Northern America**
 Population (millions)..... **35.85**

GDP per capita (PPP US\$) **44,310.10**
 GDP (US\$ billions) **1,550.54**
 GTCI score..... **69.63**
 GTCI score (income group average) **60.92**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....81.01 14 | | |
| 1.1 Regulatory Landscape..... 87.39 | 8 | |
| 1.1.1 Government effectiveness 87.66 | 10 | |
| 1.1.2 Business-government relations 79.25 | 16 | |
| 1.1.3 Political stability 93.93 | 5 | |
| 1.1.4 Regulatory quality 86.65 | 11 | |
| 1.1.5 Corruption 89.47 | 9 | |
| 1.2 Market Landscape 71.23 | 23 | |
| 1.2.1 Competition intensity 77.71 | 28 | |
| 1.2.2 Ease of doing business 84.27 | 20 | |
| 1.2.3 Cluster development 73.99 | 18 | |
| 1.2.4 R&D expenditure 37.38 | 22 | |
| 1.2.5 ICT infrastructure 83.36 | 23 | |
| 1.2.6 Technology utilisation 70.67 | 29 | |
| 1.3 Business and Labour Landscape..... 84.40 | 11 | |
| Labour Market | | |
| 1.3.1 Ease of hiring 89.00 | 25 | |
| 1.3.2 Ease of redundancy 100.00 | 1 | |
| 1.3.3 Active labour market policies..... 81.95 | 13 | |
| 1.3.4 Labour-employer cooperation 73.17 | 18 | |
| Management Practice | | |
| 1.3.5 Professional management..... 84.81 | 14 | |
| 1.3.6 Relationship of pay to productivity..... 77.44 | 12 | |
| 2 ATTRACT.....71.96 10 | | |
| 2.1 External Openness 69.20 | 11 | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... 69.19 | 19 | |
| 2.1.2 Prevalence of foreign ownership 82.96 | 13 | |
| Attract People | | |
| 2.1.3 Migrant stock..... 47.95 | 15 | |
| 2.1.4 International students..... n/a | n/a | |
| 2.1.5 Brain gain..... 76.71 | 9 | |
| 2.2 Internal Openness..... 74.72 | 11 | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities 70.11 | 17 | |
| 2.2.2 Tolerance of immigrants..... 95.77 | 2 | |
| 2.2.3 Social mobility..... 83.11 | 13 | |
| Gender Equality | | |
| 2.2.4 Female graduates n/a | n/a | |
| 2.2.5 Gender earnings gap 59.04 | 37 | |
| 2.2.6 Leadership opportunities for women..... 65.59 | 24 | |

| | Score | Rank |
|--|-------|------|
| 3 GROW.....69.45 14 | | |
| 3.1 Formal Education..... 52.97 | 20 | |
| Enrolment | | |
| 3.1.1 Vocational enrolment 7.07 | 89 | |
| 3.1.2 Tertiary enrolment..... n/a | n/a | |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... 31.71 | 31 | |
| 3.1.4 Reading, maths, and science 86.70 | 4 | |
| 3.1.5 University ranking 86.41 | 5 | |
| 3.2 Lifelong Learning..... 73.65 | 20 | |
| 3.2.1 Quality of management schools..... 83.33 | 8 | |
| 3.2.2 Prevalence of training in firms..... n/a | n/a | |
| 3.2.3 Employee development..... 63.97 | 26 | |
| 3.3 Access to Growth Opportunities 81.71 | 12 | |
| Empowerment | | |
| 3.3.1 Delegation of authority..... 75.42 | 15 | |
| 3.3.2 Personal rights..... 98.80 | 2 | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... 88.48 | 16 | |
| 3.3.4 Use of virtual professional networks..... 79.67 | 7 | |
| 3.3.5 Collaboration within organisations 67.33 | 23 | |
| 3.3.6 Collaboration across organisations 80.56 | 25 | |
| 4 RETAIN.....76.93 18 | | |
| 4.1 Sustainability 72.76 | 20 | |
| 4.1.1 Pension system 66.33 | 37 | |
| 4.1.2 Social protection 79.73 | 18 | |
| 4.1.3 Brain retention 72.21 | 15 | |
| 4.2 Lifestyle 81.10 | 21 | |
| 4.2.1 Environmental performance..... 89.51 | 25 | |
| 4.2.2 Personal safety 95.68 | 12 | |
| 4.2.3 Physician density 39.42 | 48 | |
| 4.2.4 Sanitation 99.77 | 14 | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....62.67 22 | | |
| 5.1 Mid-Level Skills 45.38 | 37 | |
| 5.1.1 Workforce with secondary education 22.05 | 73 | |
| 5.1.2 Population with secondary education..... 32.81 | 60 | |
| 5.1.3 Technicians and associate professionals 74.44 | 14 | |
| 5.1.4 Labour productivity per employee..... 52.23 | 20 | |
| 5.2 Employability..... 79.96 | 16 | |
| 5.2.1 Ease of finding skilled employees 79.87 | 16 | |
| 5.2.2 Relevance of education system to the economy 75.96 | 15 | |
| 5.2.3 Skills matching with secondary education..... 78.61 | 18 | |
| 5.2.4 Skills matching with tertiary education 85.41 | 19 | |
| 6 GLOBAL KNOWLEDGE SKILLS55.79 11 | | |
| 6.1 High-Level Skills 68.10 | 4 | |
| 6.1.1 Workforce with tertiary education 91.67 | 2 | |
| 6.1.2 Population with tertiary education 80.79 | 2 | |
| 6.1.3 Professionals..... 51.45 | 22 | |
| 6.1.4 Researchers..... 54.67 | 16 | |
| 6.1.5 Senior officials and managers 50.00 | 21 | |
| 6.1.6 Availability of scientists and engineers 80.00 | 6 | |
| 6.2 Talent Impact..... 43.48 | 25 | |
| 6.2.1 Innovation output..... 57.64 | 23 | |
| 6.2.2 High-value exports..... 25.99 | 27 | |
| 6.2.3 New product entrepreneurial activity 59.69 | 18 | |
| 6.2.4 New business density 7.25 | 60 | |
| 6.2.5 Scientific journal articles..... 66.81 | 17 | |

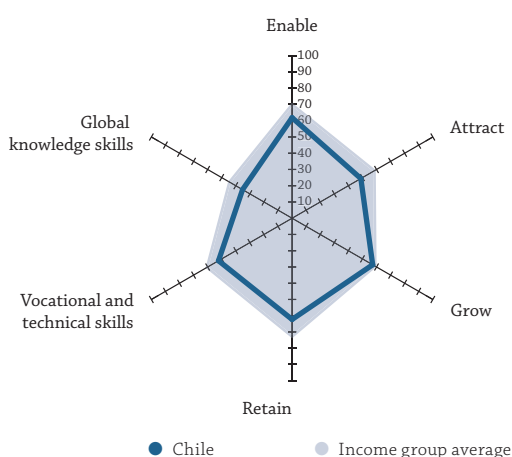
CHILE

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 33 |
| Income group | High income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 17.95 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 22,316.20 |
| GDP (US\$ billions) | 240.22 |
| GTCI score | 52.95 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 61.86 | 32 |
| 1.1 Regulatory Landscape..... | 72.71 | 23 |
| 1.1.1 Government effectiveness | 69.92 | 28 |
| 1.1.2 Business-government relations | 73.73 | 21 |
| 1.1.3 Political stability | 73.54 | 44 |
| 1.1.4 Regulatory quality | 77.91 | 17 |
| 1.1.5 Corruption | 68.42 | 23 |
| 1.2 Market Landscape..... | 51.88 | 48 |
| 1.2.1 Competition intensity | 70.57 | 59 |
| 1.2.2 Ease of doing business | 67.47 | 53 |
| 1.2.3 Cluster development | 32.82 | 85 |
| 1.2.4 R&D expenditure | 8.64 | 65 |
| 1.2.5 ICT infrastructure | 66.03 | 49 |
| 1.2.6 Technology utilisation | 65.72 | 32 |
| 1.3 Business and Labour Landscape..... | 60.99 | 45 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 57.96 | 67 |
| 1.3.4 Labour-employer cooperation | 53.12 | 53 |
| Management Practice | | |
| 1.3.5 Professional management..... | 53.30 | 35 |
| 1.3.6 Relationship of pay to productivity..... | 54.88 | 47 |
| 2 ATTRACT..... | 48.86 | 42 |
| 2.1 External Openness | 43.93 | 40 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 69.71 | 16 |
| 2.1.2 Prevalence of foreign ownership | 82.22 | 14 |
| Attract People | | |
| 2.1.3 Migrant stock | 5.63 | 71 |
| 2.1.4 International students..... | 1.46 | 86 |
| 2.1.5 Brain gain..... | 60.64 | 23 |
| 2.2 Internal Openness..... | 53.79 | 47 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 67.82 | 22 |
| 2.2.2 Tolerance of immigrants..... | 77.46 | 30 |
| 2.2.3 Social mobility..... | 54.77 | 37 |
| Gender Equality | | |
| 2.2.4 Female graduates | 71.56 | 64 |
| 2.2.5 Gender earnings gap | 42.17 | 81 |
| 2.2.6 Leadership opportunities for women..... | 8.96 | 108 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 57.25 | 24 |
| 3.1 Formal Education..... | 46.86 | 31 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 32.38 | 35 |
| 3.1.2 Tertiary enrolment..... | 77.63 | 5 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 27.88 | 40 |
| 3.1.4 Reading, maths, and science | 48.78 | 41 |
| 3.1.5 University ranking | 47.63 | 30 |
| 3.2 Lifelong Learning..... | 62.10 | 28 |
| 3.2.1 Quality of management schools..... | 71.16 | 25 |
| 3.2.2 Prevalence of training in firms | 71.37 | 11 |
| 3.2.3 Employee development..... | 43.77 | 53 |
| 3.3 Access to Growth Opportunities | 62.80 | 29 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 50.56 | 40 |
| 3.3.2 Personal rights..... | 97.59 | 8 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 78.18 | 38 |
| 3.3.4 Use of virtual professional networks..... | 47.19 | 18 |
| 3.3.5 Collaboration within organisations | 29.63 | 84 |
| 3.3.6 Collaboration across organisations | 73.64 | 40 |
| 4 RETAIN..... | 62.26 | 39 |
| 4.1 Sustainability | 58.45 | 31 |
| 4.1.1 Pension system | 59.18 | 42 |
| 4.1.2 Social protection | 42.58 | 45 |
| 4.1.3 Brain retention | 73.58 | 14 |
| 4.2 Lifestyle..... | 66.06 | 55 |
| 4.2.1 Environmental performance..... | 75.72 | 50 |
| 4.2.2 Personal safety | 73.38 | 42 |
| 4.2.3 Physician density | 16.19 | 81 |
| 4.2.4 Sanitation | 98.98 | 23 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 52.27 | 38 |
| 5.1 Mid-Level Skills | 43.38 | 42 |
| 5.1.1 Workforce with secondary education | 44.73 | 23 |
| 5.1.2 Population with secondary education | 50.50 | 32 |
| 5.1.3 Technicians and associate professionals | 47.53 | 44 |
| 5.1.4 Labour productivity per employee..... | 30.75 | 51 |
| 5.2 Employability..... | 61.15 | 44 |
| 5.2.1 Ease of finding skilled employees | 66.01 | 30 |
| 5.2.2 Relevance of education system to the economy | 32.93 | 77 |
| 5.2.3 Skills matching with secondary education..... | 62.76 | 60 |
| 5.2.4 Skills matching with tertiary education | 82.92 | 24 |
| 6 GLOBAL KNOWLEDGE SKILLS | 35.19 | 45 |
| 6.1 High-Level Skills | 26.94 | 66 |
| 6.1.1 Workforce with tertiary education | 22.89 | 78 |
| 6.1.2 Population with tertiary education | 28.47 | 47 |
| 6.1.3 Professionals..... | 30.64 | 56 |
| 6.1.4 Researchers..... | 5.38 | 63 |
| 6.1.5 Senior officials and managers | 12.50 | 82 |
| 6.1.6 Availability of scientists and engineers | 61.76 | 23 |
| 6.2 Talent Impact..... | 43.44 | 26 |
| 6.2.1 Innovation output..... | 35.50 | 52 |
| 6.2.2 High-value exports..... | 11.11 | 62 |
| 6.2.3 New product entrepreneurial activity | 100.00 | 1 |
| 6.2.4 New business density | 46.43 | 13 |
| 6.2.5 Scientific journal articles..... | 24.15 | 54 |

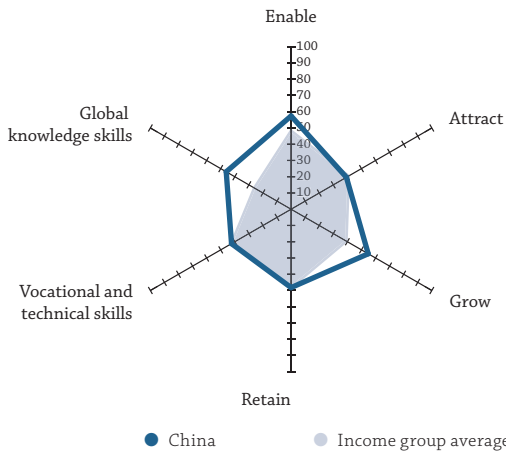
CHINA

Key Indicators

Rank (out of 119)..... **43**
 Income group **Upper middle income**
 Regional group **East, Southeastern Asia and Oceania**
 Population (millions) **1,371.22**

GDP per capita (PPP US\$) **14,238.70**
 GDP (US\$ billions) **10,866.44**
 GTCI score **48.01**
 GTCI score (income group average) **40.93**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....57.37 43 | | |
| 1.1 Regulatory Landscape.....49.02 60 | | |
| 1.1.1 Government effectiveness52.96 45 | | |
| 1.1.2 Business-government relations69.09 32 | | |
| 1.1.3 Political stability50.24 88 | | |
| 1.1.4 Regulatory quality38.59 84 | | |
| 1.1.5 Corruption34.21 64 | | |
| 1.2 Market Landscape.....58.53 36 | | |
| 1.2.1 Competition intensity76.57 33 | | |
| 1.2.2 Ease of doing business57.62 71 | | |
| 1.2.3 Cluster development72.14 19 | | |
| 1.2.4 R&D expenditure47.66 16 | | |
| 1.2.5 ICT infrastructure50.20 68 | | |
| 1.2.6 Technology utilisation47.00 56 | | |
| 1.3 Business and Labour Landscape.....64.55 34 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring89.00 25 | | |
| 1.3.2 Ease of redundancy50.00 98 | | |
| 1.3.3 Active labour market policies.....78.64 19 | | |
| 1.3.4 Labour-employer cooperation56.37 43 | | |
| Management Practice | | |
| 1.3.5 Professional management.....47.28 51 | | |
| 1.3.6 Relationship of pay to productivity.....65.99 25 | | |
| 2 ATTRACT.....39.29 76 | | |
| 2.1 External Openness34.96 65 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer.....54.05 55 | | |
| 2.1.2 Prevalence of foreign ownership57.78 57 | | |
| Attract People | | |
| 2.1.3 Migrant stock0.00 119 | | |
| 2.1.4 International students1.31 88 | | |
| 2.1.5 Brain gain61.65 22 | | |
| 2.2 Internal Openness43.62 84 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities19.54 100 | | |
| 2.2.2 Tolerance of immigrants30.99 101 | | |
| 2.2.3 Social mobility.....46.87 52 | | |
| Gender Equality | | |
| 2.2.4 Female graduates60.63 77 | | |
| 2.2.5 Gender earnings gap54.22 48 | | |
| 2.2.6 Leadership opportunities for women.....49.46 45 | | |

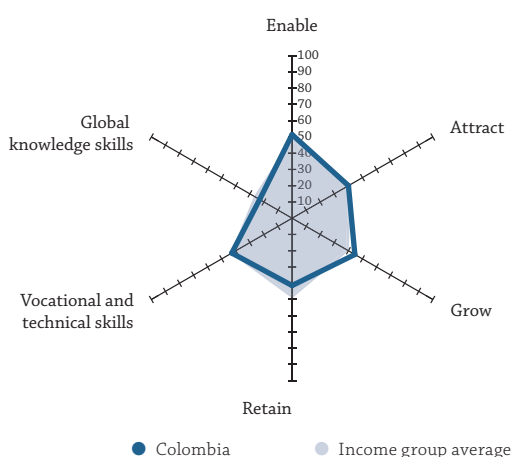
| | Score | Rank |
|--|-------|------|
| 3 GROW.....54.80 29 | | |
| 3.1 Formal Education.....59.52 11 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment32.75 34 | | |
| 3.1.2 Tertiary enrolment.....37.67 61 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure.....n/a n/a | | |
| 3.1.4 Reading, maths, and science82.46 7 | | |
| 3.1.5 University ranking85.20 7 | | |
| 3.2 Lifelong Learning.....66.92 22 | | |
| 3.2.1 Quality of management schools.....46.56 54 | | |
| 3.2.2 Prevalence of training in firms100.00 1 | | |
| 3.2.3 Employee development54.21 37 | | |
| 3.3 Access to Growth Opportunities37.96 99 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority.....41.62 66 | | |
| 3.3.2 Personal rights.....0.00 119 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks.....45.15 106 | | |
| 3.3.4 Use of virtual professional networks.....0.69 111 | | |
| 3.3.5 Collaboration within organisations52.93 34 | | |
| 3.3.6 Collaboration across organisations87.35 16 | | |
| 4 RETAIN.....48.21 64 | | |
| 4.1 Sustainability45.85 47 | | |
| 4.1.1 Pension system25.51 67 | | |
| 4.1.2 Social protection54.41 33 | | |
| 4.1.3 Brain retention57.63 32 | | |
| 4.2 Lifestyle50.57 88 | | |
| 4.2.1 Environmental performance.....52.26 90 | | |
| 4.2.2 Personal safety53.17 85 | | |
| 4.2.3 Physician density23.56 70 | | |
| 4.2.4 Sanitation73.30 82 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....42.33 66 | | |
| 5.1 Mid-Level Skills17.43 93 | | |
| 5.1.1 Workforce with secondary educationn/a n/a | | |
| 5.1.2 Population with secondary education19.12 86 | | |
| 5.1.3 Technicians and associate professionalsn/a n/a | | |
| 5.1.4 Labour productivity per employee.....15.75 74 | | |
| 5.2 Employability.....67.23 31 | | |
| 5.2.1 Ease of finding skilled employees61.39 38 | | |
| 5.2.2 Relevance of education system to the economy54.33 39 | | |
| 5.2.3 Skills matching with secondary education.....76.56 22 | | |
| 5.2.4 Skills matching with tertiary education76.65 36 | | |
| 6 GLOBAL KNOWLEDGE SKILLS46.09 22 | | |
| 6.1 High-Level Skills29.07 60 | | |
| 6.1.1 Workforce with tertiary educationn/a n/a | | |
| 6.1.2 Population with tertiary education13.38 77 | | |
| 6.1.3 Professionalsn/a n/a | | |
| 6.1.4 Researchers14.12 45 | | |
| 6.1.5 Senior officials and managersn/a n/a | | |
| 6.1.6 Availability of scientists and engineers59.71 28 | | |
| 6.2 Talent Impact.....63.11 2 | | |
| 6.2.1 Innovation output73.81 11 | | |
| 6.2.2 High-value exports48.59 11 | | |
| 6.2.3 New product entrepreneurial activity86.46 3 | | |
| 6.2.4 New business densityn/a n/a | | |
| 6.2.5 Scientific journal articles.....43.57 41 | | |

COLOMBIA

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 67 |
| Income group | Upper middle income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 48.23 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 51.47 | 57 |
| 1.1 Regulatory Landscape..... | 45.22 | 75 |
| 1.1.1 Government effectiveness | 41.39 | 70 |
| 1.1.2 Business-government relations | 60.26 | 54 |
| 1.1.3 Political stability | 38.11 | 107 |
| 1.1.4 Regulatory quality | 56.07 | 49 |
| 1.1.5 Corruption | 30.26 | 72 |
| 1.2 Market Landscape | 47.18 | 63 |
| 1.2.1 Competition intensity | 81.43 | 22 |
| 1.2.2 Ease of doing business | 70.00 | 50 |
| 1.2.3 Cluster development | 39.63 | 73 |
| 1.2.4 R&D expenditure | 4.44 | 81 |
| 1.2.5 ICT infrastructure | 49.80 | 70 |
| 1.2.6 Technology utilisation | 37.81 | 77 |
| 1.3 Business and Labour Landscape..... | 62.00 | 40 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 55.35 | 75 |
| 1.3.4 Labour-employer cooperation | 55.83 | 44 |
| Management Practice | | |
| 1.3.5 Professional management..... | 35.82 | 70 |
| 1.3.6 Relationship of pay to productivity..... | 36.03 | 78 |
| 2 ATTRACT..... | 40.05 | 72 |
| 2.1 External Openness | 29.31 | 82 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 49.61 | 64 |
| 2.1.2 Prevalence of foreign ownership | 58.77 | 55 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.46 | 112 |
| 2.1.4 International students..... | 0.78 | 92 |
| 2.1.5 Brain gain | 36.95 | 73 |
| 2.2 Internal Openness | 50.79 | 55 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 22.99 | 97 |
| 2.2.2 Tolerance of immigrants..... | 80.28 | 24 |
| 2.2.3 Social mobility..... | 39.51 | 72 |
| Gender Equality | | |
| 2.2.4 Female graduates | 69.67 | 66 |
| 2.2.5 Gender earnings gap | 61.45 | 30 |
| 2.2.6 Leadership opportunities for women..... | 30.82 | 78 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 13,800.80 |
| GDP (US\$ billions) | 292.08 |
| GTCI score | 40.57 |
| GTCI score (income group average) | 40.93 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 44.59 | 45 |
| 3.1 Formal Education..... | 31.39 | 57 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 11.85 | 76 |
| 3.1.2 Tertiary enrolment..... | 48.46 | 46 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 22.25 | 59 |
| 3.1.4 Reading, maths, and science | 33.43 | 57 |
| 3.1.5 University ranking | 40.97 | 33 |
| 3.2 Lifelong Learning..... | 51.17 | 42 |
| 3.2.1 Quality of management schools..... | 44.18 | 58 |
| 3.2.2 Prevalence of training in firms | 81.40 | 5 |
| 3.2.3 Employee development | 27.95 | 86 |
| 3.3 Access to Growth Opportunities | 51.20 | 52 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 48.32 | 45 |
| 3.3.2 Personal rights..... | 62.10 | 60 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 65.45 | 76 |
| 3.3.4 Use of virtual professional networks..... | 24.29 | 42 |
| 3.3.5 Collaboration within organisations | 35.93 | 71 |
| 3.3.6 Collaboration across organisations | 71.10 | 49 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 41.41 | 82 |
| 4.1 Sustainability | 31.44 | 74 |
| 4.1.1 Pension system | 29.59 | 65 |
| 4.1.2 Social protection | 23.96 | 88 |
| 4.1.3 Brain retention | 40.77 | 64 |
| 4.2 Lifestyle | 51.37 | 85 |
| 4.2.1 Environmental performance..... | 72.47 | 54 |
| 4.2.2 Personal safety | 29.66 | 111 |
| 4.2.3 Physician density | 24.84 | 67 |
| 4.2.4 Sanitation | 78.52 | 77 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 42.84 | 64 |
| 5.1 Mid-Level Skills | 29.11 | 72 |
| 5.1.1 Workforce with secondary education | 26.25 | 66 |
| 5.1.2 Population with secondary education | 36.66 | 53 |
| 5.1.3 Technicians and associate professionals | 36.77 | 57 |
| 5.1.4 Labour productivity per employee..... | 16.75 | 71 |
| 5.2 Employability..... | 56.56 | 56 |
| 5.2.1 Ease of finding skilled employees | 52.48 | 50 |
| 5.2.2 Relevance of education system to the economy | 30.29 | 87 |
| 5.2.3 Skills matching with secondary education..... | 68.73 | 39 |
| 5.2.4 Skills matching with tertiary education | 74.76 | 43 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 23.05 | 71 |
| 6.1 High-Level Skills | 22.71 | 78 |
| 6.1.1 Workforce with tertiary education | 31.01 | 62 |
| 6.1.2 Population with tertiary education | 26.93 | 50 |
| 6.1.3 Professionals..... | 4.34 | 102 |
| 6.1.4 Researchers..... | 1.24 | 84 |
| 6.1.5 Senior officials and managers | 36.25 | 36 |
| 6.1.6 Availability of scientists and engineers | 36.47 | 70 |
| 6.2 Talent Impact..... | 23.38 | 67 |
| 6.2.1 Innovation output..... | 26.19 | 74 |
| 6.2.2 High-value exports..... | 17.89 | 43 |
| 6.2.3 New product entrepreneurial activity | 48.56 | 37 |
| 6.2.4 New business density | 11.43 | 46 |
| 6.2.5 Scientific journal articles..... | 12.85 | 68 |

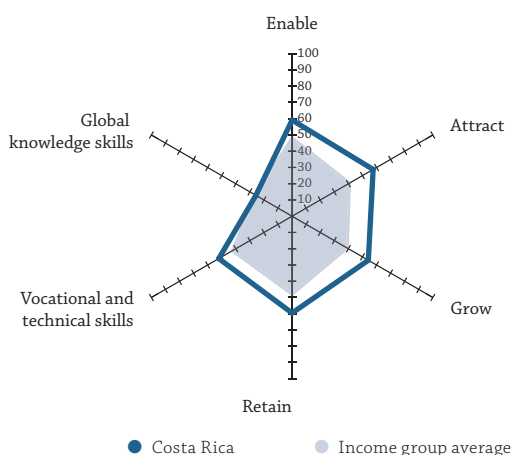
COSTA RICA

Key Indicators

| | |
|----------------------------|---|
| Rank (out of 119)..... | 35 |
| Income group..... | Upper middle income |
| Regional group..... | Latin, Central America and Caribbean |
| Population (millions)..... | 4.81 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 15,377.20 |
| GDP (US\$ billions)..... | 51.11 |
| GTCI score..... | 51.38 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 59.15 | 39 |
| 1.1 Regulatory Landscape..... | 61.80 | 39 |
| 1.1.1 Government effectiveness..... | 51.93 | 48 |
| 1.1.2 Business-government relations..... | 64.24 | 38 |
| 1.1.3 Political stability..... | 77.91 | 37 |
| 1.1.4 Regulatory quality..... | 57.04 | 46 |
| 1.1.5 Corruption..... | 57.89 | 33 |
| 1.2 Market Landscape..... | 54.23 | 43 |
| 1.2.1 Competition intensity..... | 73.43 | 45 |
| 1.2.2 Ease of doing business..... | 65.49 | 57 |
| 1.2.3 Cluster development..... | 49.23 | 47 |
| 1.2.4 R&D expenditure..... | 12.85 | 54 |
| 1.2.5 ICT infrastructure..... | 65.35 | 50 |
| 1.2.6 Technology utilisation..... | 59.01 | 39 |
| 1.3 Business and Labour Landscape..... | 61.41 | 42 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 22.33 | 105 |
| 1.3.2 Ease of redundancy..... | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 63.40 | 53 |
| 1.3.4 Labour-employer cooperation..... | 71.00 | 21 |
| Management Practice | | |
| 1.3.5 Professional management..... | 50.14 | 41 |
| 1.3.6 Relationship of pay to productivity..... | 61.62 | 33 |
| 2 ATTRACT..... | 57.58 | 24 |
| 2.1 External Openness..... | 52.92 | 25 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 70.50 | 15 |
| 2.1.2 Prevalence of foreign ownership..... | 72.59 | 29 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 19.20 | 42 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 49.40 | 38 |
| 2.2 Internal Openness..... | 62.24 | 26 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 60.92 | 37 |
| 2.2.2 Tolerance of immigrants..... | 74.65 | 34 |
| 2.2.3 Social mobility..... | 60.76 | 30 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 90.79 | 18 |
| 2.2.5 Gender earnings gap..... | 49.40 | 67 |
| 2.2.6 Leadership opportunities for women..... | 36.92 | 69 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 54.17 | 31 |
| 3.1 Formal Education..... | 36.86 | 46 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 38.68 | 28 |
| 3.1.2 Tertiary enrolment..... | 46.72 | 48 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 40.92 | 14 |
| 3.1.4 Reading, maths, and science..... | 36.10 | 53 |
| 3.1.5 University ranking..... | 21.90 | 60 |
| 3.2 Lifelong Learning..... | 64.02 | 27 |
| 3.2.1 Quality of management schools..... | 69.84 | 27 |
| 3.2.2 Prevalence of training in firms..... | 67.68 | 18 |
| 3.2.3 Employee development..... | 54.55 | 36 |
| 3.3 Access to Growth Opportunities..... | 61.62 | 30 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 54.19 | 32 |
| 3.3.2 Personal rights..... | 89.15 | 14 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 79.09 | 35 |
| 3.3.4 Use of virtual professional networks..... | 30.59 | 31 |
| 3.3.5 Collaboration within organisations..... | 39.46 | 58 |
| 3.3.6 Collaboration across organisations..... | 77.24 | 30 |
| 4 RETAIN..... | 59.56 | 42 |
| 4.1 Sustainability..... | 53.53 | 38 |
| 4.1.1 Pension system..... | 55.10 | 45 |
| 4.1.2 Social protection..... | 41.70 | 50 |
| 4.1.3 Brain retention..... | 63.78 | 26 |
| 4.2 Lifestyle..... | 65.60 | 56 |
| 4.2.1 Environmental performance..... | 80.12 | 41 |
| 4.2.2 Personal safety..... | 70.40 | 47 |
| 4.2.3 Physician density..... | 18.11 | 79 |
| 4.2.4 Sanitation..... | 93.75 | 53 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 52.09 | 39 |
| 5.1 Mid-Level Skills..... | 28.22 | 73 |
| 5.1.1 Workforce with secondary education..... | 17.28 | 85 |
| 5.1.2 Population with secondary education..... | 22.68 | 80 |
| 5.1.3 Technicians and associate professionals..... | 49.33 | 42 |
| 5.1.4 Labour productivity per employee..... | 23.58 | 63 |
| 5.2 Employability..... | 75.96 | 21 |
| 5.2.1 Ease of finding skilled employees..... | 77.23 | 21 |
| 5.2.2 Relevance of education system to the economy..... | 62.26 | 25 |
| 5.2.3 Skills matching with secondary education..... | 78.85 | 16 |
| 5.2.4 Skills matching with tertiary education..... | 85.50 | 18 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 25.72 | 64 |
| 6.1 High-Level Skills..... | 26.98 | 65 |
| 6.1.1 Workforce with tertiary education..... | 28.91 | 64 |
| 6.1.2 Population with tertiary education..... | 31.73 | 37 |
| 6.1.3 Professionals..... | 21.39 | 70 |
| 6.1.4 Researchers..... | 6.80 | 61 |
| 6.1.5 Senior officials and managers..... | 11.88 | 85 |
| 6.1.6 Availability of scientists and engineers..... | 61.18 | 24 |
| 6.2 Talent Impact..... | 24.45 | 61 |
| 6.2.1 Innovation output..... | 37.43 | 49 |
| 6.2.2 High-value exports..... | 31.64 | 19 |
| 6.2.3 New product entrepreneurial activity..... | 40.48 | 56 |
| 6.2.4 New business density..... | 6.21 | 65 |
| 6.2.5 Scientific journal articles..... | 6.52 | 86 |

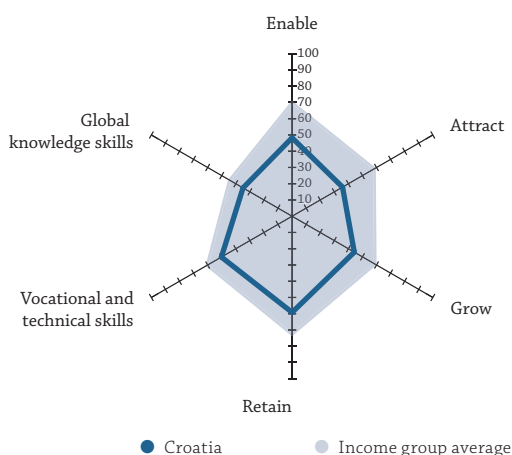
CROATIA

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 48 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 4.22 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 21,880.50 |
| GDP (US\$ billions) | 48.73 |
| GTCI score | 45.42 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 48.24 | 71 |
| 1.1 Regulatory Landscape..... | 52.67 | 51 |
| 1.1.1 Government effectiveness | 55.27 | 41 |
| 1.1.2 Business-government relations | 30.24 | 114 |
| 1.1.3 Political stability | 77.91 | 37 |
| 1.1.4 Regulatory quality | 53.88 | 55 |
| 1.1.5 Corruption | 46.05 | 45 |
| 1.2 Market Landscape | 47.27 | 61 |
| 1.2.1 Competition intensity | 59.14 | 84 |
| 1.2.2 Ease of doing business | 73.86 | 40 |
| 1.2.3 Cluster development | 19.50 | 109 |
| 1.2.4 R&D expenditure | 18.22 | 42 |
| 1.2.5 ICT infrastructure | 75.44 | 34 |
| 1.2.6 Technology utilisation | 37.46 | 78 |
| 1.3 Business and Labour Landscape..... | 44.77 | 96 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 52.62 | 83 |
| 1.3.4 Labour-employer cooperation | 26.02 | 113 |
| Management Practice | | |
| 1.3.5 Professional management..... | 29.51 | 82 |
| 1.3.6 Relationship of pay to productivity..... | 44.78 | 63 |
| 2 ATTRACT..... | 35.84 | 92 |
| 2.1 External Openness | 24.44 | 102 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 30.81 | 103 |
| 2.1.2 Prevalence of foreign ownership | 47.65 | 88 |
| Attract People | | |
| 2.1.3 Migrant stock | 29.85 | 25 |
| 2.1.4 International students..... | 1.83 | 83 |
| 2.1.5 Brain gain | 12.05 | 115 |
| 2.2 Internal Openness | 47.23 | 74 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 49.43 | 52 |
| 2.2.2 Tolerance of immigrants..... | 39.44 | 91 |
| 2.2.3 Social mobility..... | 23.16 | 108 |
| Gender Equality | | |
| 2.2.4 Female graduates | 82.41 | 35 |
| 2.2.5 Gender earnings gap | 67.47 | 18 |
| 2.2.6 Leadership opportunities for women..... | 21.51 | 96 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 44.19 | 46 |
| 3.1 Formal Education..... | 46.70 | 33 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 64.70 | 7 |
| 3.1.2 Tertiary enrolment..... | 60.79 | 27 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 23.27 | 55 |
| 3.1.4 Reading, maths, and science | 64.16 | 33 |
| 3.1.5 University ranking | 20.59 | 62 |
| 3.2 Lifelong Learning..... | 40.04 | 66 |
| 3.2.1 Quality of management schools..... | 38.36 | 74 |
| 3.2.2 Prevalence of training in firms..... | 60.55 | 25 |
| 3.2.3 Employee development..... | 21.21 | 106 |
| 3.3 Access to Growth Opportunities | 45.82 | 65 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 32.96 | 85 |
| 3.3.2 Personal rights..... | 74.91 | 36 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 59.09 | 87 |
| 3.3.4 Use of virtual professional networks..... | 26.81 | 35 |
| 3.3.5 Collaboration within organisations | 25.95 | 96 |
| 3.3.6 Collaboration across organisations | 55.17 | 107 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 59.17 | 45 |
| 4.1 Sustainability | 38.13 | 63 |
| 4.1.1 Pension system | 82.65 | 28 |
| 4.1.2 Social protection | 21.02 | 94 |
| 4.1.3 Brain retention | 10.71 | 113 |
| 4.2 Lifestyle | 80.20 | 23 |
| 4.2.1 Environmental performance..... | 93.09 | 15 |
| 4.2.2 Personal safety | 81.29 | 31 |
| 4.2.3 Physician density | 49.84 | 30 |
| 4.2.4 Sanitation | 96.59 | 41 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 50.22 | 42 |
| 5.1 Mid-Level Skills | 56.72 | 17 |
| 5.1.1 Workforce with secondary education | 54.90 | 9 |
| 5.1.2 Population with secondary education | 74.47 | 8 |
| 5.1.3 Technicians and associate professionals | 64.13 | 21 |
| 5.1.4 Labour productivity per employee..... | 33.38 | 47 |
| 5.2 Employability..... | 43.72 | 97 |
| 5.2.1 Ease of finding skilled employees | 30.36 | 92 |
| 5.2.2 Relevance of education system to the economy | 27.16 | 94 |
| 5.2.3 Skills matching with secondary education..... | 57.52 | 84 |
| 5.2.4 Skills matching with tertiary education | 59.84 | 101 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 34.86 | 46 |
| 6.1 High-Level Skills | 31.70 | 50 |
| 6.1.1 Workforce with tertiary education | 37.15 | 43 |
| 6.1.2 Population with tertiary education | 30.36 | 41 |
| 6.1.3 Professionals | 45.66 | 36 |
| 6.1.4 Researchers | 18.07 | 42 |
| 6.1.5 Senior officials and managers | 27.50 | 49 |
| 6.1.6 Availability of scientists and engineers | 31.47 | 82 |
| 6.2 Talent Impact..... | 38.02 | 35 |
| 6.2.1 Innovation output..... | 39.89 | 45 |
| 6.2.2 High-value exports..... | 16.95 | 44 |
| 6.2.3 New product entrepreneurial activity | 23.55 | 75 |
| 6.2.4 New business density | 26.70 | 23 |
| 6.2.5 Scientific journal articles..... | 83.02 | 5 |

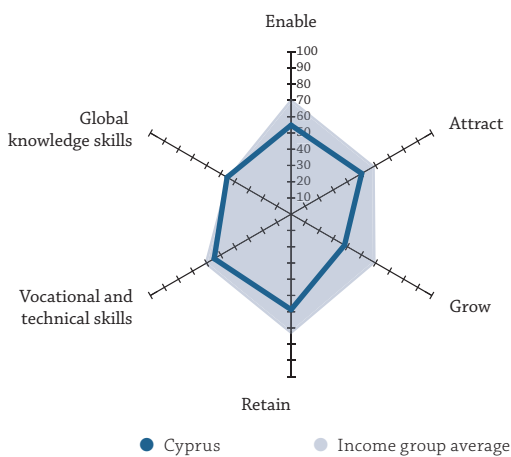
CYPRUS

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 37 |
| Income group | High income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 1.17 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 30,734.20 |
| GDP (US\$ billions) | 19.32 |
| GTCI score | 50.29 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....54.79 47 | | |
| 1.1 Regulatory Landscape.....66.54 28 | | |
| 1.1.1 Government effectiveness68.89 30 | | |
| 1.1.2 Business-government relations62.03 46 | | |
| 1.1.3 Political stability76.94 40 | | |
| 1.1.4 Regulatory quality70.87 31 | | |
| 1.1.5 Corruption53.95 37 | | |
| 1.2 Market Landscape.....50.58 53 | | |
| 1.2.1 Competition intensity73.71 40 | | |
| 1.2.2 Ease of doing business73.23 42 | | |
| 1.2.3 Cluster development45.51 55 | | |
| 1.2.4 R&D expenditure10.75 60 | | |
| 1.2.5 ICT infrastructure68.49 47 | | |
| 1.2.6 Technology utilisation31.80 92 | | |
| 1.3 Business and Labour Landscape.....47.25 89 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring55.67 69 | | |
| 1.3.2 Ease of redundancy60.00 81 | | |
| 1.3.3 Active labour market policies.....61.60 56 | | |
| 1.3.4 Labour-employer cooperation50.41 59 | | |
| Management Practice | | |
| 1.3.5 Professional management.....19.48 103 | | |
| 1.3.6 Relationship of pay to productivity.....36.36 76 | | |
| 2 ATTRACT.....50.16 38 | | |
| 2.1 External Openness50.20 30 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer.....42.04 79 | | |
| 2.1.2 Prevalence of foreign ownership46.67 91 | | |
| Attract People | | |
| 2.1.3 Migrant stock.....36.98 18 | | |
| 2.1.4 International students.....91.59 8 | | |
| 2.1.5 Brain gain.....33.73 80 | | |
| 2.2 Internal Openness.....50.13 60 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities.....34.48 75 | | |
| 2.2.2 Tolerance of immigrants.....53.52 66 | | |
| 2.2.3 Social mobility.....37.87 77 | | |
| Gender Equality | | |
| 2.2.4 Female graduates90.85 17 | | |
| 2.2.5 Gender earnings gap61.45 30 | | |
| 2.2.6 Leadership opportunities for women.....22.58 93 | | |

| | Score | Rank |
|---|-------|------|
| 3 GROW.....37.99 67 | | |
| 3.1 Formal Education.....29.29 65 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment13.14 72 | | |
| 3.1.2 Tertiary enrolment.....52.45 41 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure.....34.53 22 | | |
| 3.1.4 Reading, maths, and science46.32 44 | | |
| 3.1.5 University ranking0.00 76 | | |
| 3.2 Lifelong Learning.....33.24 88 | | |
| 3.2.1 Quality of management schools.....32.80 89 | | |
| 3.2.2 Prevalence of training in firms.....n/a n/a | | |
| 3.2.3 Employee development.....33.67 72 | | |
| 3.3 Access to Growth Opportunities51.43 50 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority.....33.80 83 | | |
| 3.3.2 Personal rights.....93.98 10 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks.....60.61 86 | | |
| 3.3.4 Use of virtual professional networks.....37.07 25 | | |
| 3.3.5 Collaboration within organisations23.15 104 | | |
| 3.3.6 Collaboration across organisations59.99 93 | | |
| 4 RETAIN.....58.69 47 | | |
| 4.1 Sustainability41.47 58 | | |
| 4.1.1 Pension systemn/a n/a | | |
| 4.1.2 Social protection42.61 44 | | |
| 4.1.3 Brain retention40.32 67 | | |
| 4.2 Lifestyle.....75.91 36 | | |
| 4.2.1 Environmental performance.....80.52 39 | | |
| 4.2.2 Personal safety83.38 27 | | |
| 4.2.3 Physician density39.74 47 | | |
| 4.2.4 Sanitation100.00 1 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....54.63 32 | | |
| 5.1 Mid-Level Skills.....45.73 36 | | |
| 5.1.1 Workforce with secondary education32.98 52 | | |
| 5.1.2 Population with secondary education.....45.79 40 | | |
| 5.1.3 Technicians and associate professionals.....59.19 26 | | |
| 5.1.4 Labour productivity per employee.....44.96 29 | | |
| 5.2 Employability.....63.52 37 | | |
| 5.2.1 Ease of finding skilled employees66.67 28 | | |
| 5.2.2 Relevance of education system to the economy.....50.96 47 | | |
| 5.2.3 Skills matching with secondary education.....64.57 55 | | |
| 5.2.4 Skills matching with tertiary education.....71.89 57 | | |
| 6 GLOBAL KNOWLEDGE SKILLS45.46 24 | | |
| 6.1 High-Level Skills.....39.13 35 | | |
| 6.1.1 Workforce with tertiary education.....63.18 8 | | |
| 6.1.2 Population with tertiary education.....40.99 21 | | |
| 6.1.3 Professionals.....48.27 30 | | |
| 6.1.4 Researchers.....12.15 48 | | |
| 6.1.5 Senior officials and managers.....23.75 59 | | |
| 6.1.6 Availability of scientists and engineers.....46.47 50 | | |
| 6.2 Talent Impact.....51.79 16 | | |
| 6.2.1 Innovation output.....54.13 27 | | |
| 6.2.2 High-value exports.....11.68 61 | | |
| 6.2.3 New product entrepreneurial activity.....60.53 17 | | |
| 6.2.4 New business density79.34 6 | | |
| 6.2.5 Scientific journal articles.....53.28 29 | | |

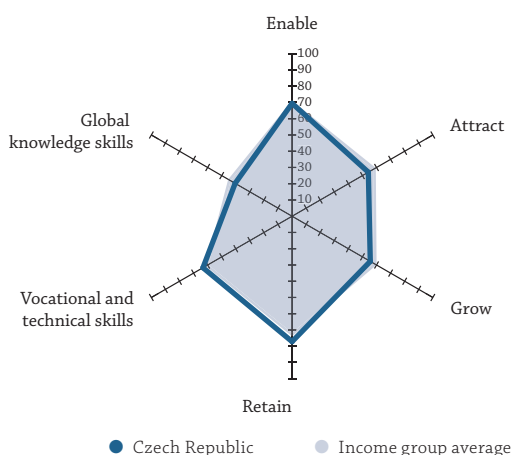
CZECH REPUBLIC

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 25 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 10.55 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 32,167.10 |
| GDP (US\$ billions) | 181.81 |
| GTCI score | 60.02 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 69.45 | 26 |
| 1.1 Regulatory Landscape..... | 65.24 | 33 |
| 1.1.1 Government effectiveness | 69.15 | 29 |
| 1.1.2 Business-government relations | 44.59 | 91 |
| 1.1.3 Political stability | 87.14 | 17 |
| 1.1.4 Regulatory quality | 71.36 | 30 |
| 1.1.5 Corruption | 53.95 | 37 |
| 1.2 Market Landscape..... | 66.88 | 26 |
| 1.2.1 Competition intensity | 86.57 | 12 |
| 1.2.2 Ease of doing business | 80.80 | 25 |
| 1.2.3 Cluster development | 45.51 | 55 |
| 1.2.4 R&D expenditure | 46.50 | 17 |
| 1.2.5 ICT infrastructure | 78.31 | 27 |
| 1.2.6 Technology utilisation | 63.60 | 35 |
| 1.3 Business and Labour Landscape..... | 76.24 | 21 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 69.85 | 32 |
| 1.3.4 Labour-employer cooperation | 57.99 | 40 |
| Management Practice | | |
| 1.3.5 Professional management..... | 70.20 | 27 |
| 1.3.6 Relationship of pay to productivity..... | 70.37 | 19 |
| 2 ATTRACT..... | 54.18 | 29 |
| 2.1 External Openness | 52.45 | 27 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 67.36 | 22 |
| 2.1.2 Prevalence of foreign ownership | 94.81 | 5 |
| Attract People | | |
| 2.1.3 Migrant stock | 8.32 | 60 |
| 2.1.4 International students..... | 51.20 | 20 |
| 2.1.5 Brain gain..... | 40.56 | 59 |
| 2.2 Internal Openness..... | 55.90 | 43 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 71.26 | 15 |
| 2.2.2 Tolerance of immigrants..... | 18.31 | 113 |
| 2.2.3 Social mobility..... | 64.03 | 27 |
| Gender Equality | | |
| 2.2.4 Female graduates | 83.39 | 30 |
| 2.2.5 Gender earnings gap | 51.81 | 55 |
| 2.2.6 Leadership opportunities for women..... | 46.59 | 52 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 55.55 | 27 |
| 3.1 Formal Education..... | 49.32 | 25 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 63.03 | 8 |
| 3.1.2 Tertiary enrolment..... | 57.68 | 33 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 20.20 | 66 |
| 3.1.4 Reading, maths, and science | 71.39 | 27 |
| 3.1.5 University ranking | 34.28 | 37 |
| 3.2 Lifelong Learning..... | 57.54 | 32 |
| 3.2.1 Quality of management schools..... | 45.50 | 55 |
| 3.2.2 Prevalence of training in firms | 68.21 | 16 |
| 3.2.3 Employee development..... | 58.92 | 33 |
| 3.3 Access to Growth Opportunities | 59.80 | 32 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 58.94 | 26 |
| 3.3.2 Personal rights..... | 75.44 | 35 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 80.61 | 31 |
| 3.3.4 Use of virtual professional networks..... | 21.92 | 45 |
| 3.3.5 Collaboration within organisations | 53.87 | 31 |
| 3.3.6 Collaboration across organisations | 68.06 | 65 |
| 4 RETAIN..... | 77.15 | 17 |
| 4.1 Sustainability | 67.69 | 22 |
| 4.1.1 Pension system | 94.90 | 3 |
| 4.1.2 Social protection | 63.31 | 26 |
| 4.1.3 Brain retention | 44.87 | 52 |
| 4.2 Lifestyle..... | 86.60 | 9 |
| 4.2.1 Environmental performance..... | 88.78 | 27 |
| 4.2.2 Personal safety | 100.00 | 1 |
| 4.2.3 Physician density | 58.65 | 17 |
| 4.2.4 Sanitation | 98.98 | 23 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 63.32 | 19 |
| 5.1 Mid-Level Skills | 69.41 | 3 |
| 5.1.1 Workforce with secondary education | 62.50 | 4 |
| 5.1.2 Population with secondary education | 100.00 | 1 |
| 5.1.3 Technicians and associate professionals | 76.23 | 11 |
| 5.1.4 Labour productivity per employee..... | 38.89 | 39 |
| 5.2 Employability..... | 57.24 | 51 |
| 5.2.1 Ease of finding skilled employees | 37.95 | 72 |
| 5.2.2 Relevance of education system to the economy | 46.63 | 51 |
| 5.2.3 Skills matching with secondary education..... | 70.56 | 32 |
| 5.2.4 Skills matching with tertiary education | 73.80 | 48 |
| 6 GLOBAL KNOWLEDGE SKILLS | 40.46 | 33 |
| 6.1 High-Level Skills | 31.50 | 52 |
| 6.1.1 Workforce with tertiary education | 33.40 | 54 |
| 6.1.2 Population with tertiary education | 6.69 | 88 |
| 6.1.3 Professionals..... | 41.62 | 38 |
| 6.1.4 Researchers..... | 43.67 | 25 |
| 6.1.5 Senior officials and managers | 31.25 | 41 |
| 6.1.6 Availability of scientists and engineers | 32.35 | 81 |
| 6.2 Talent Impact..... | 49.42 | 18 |
| 6.2.1 Innovation output..... | 65.55 | 16 |
| 6.2.2 High-value exports..... | 28.06 | 24 |
| 6.2.3 New product entrepreneurial activity | 54.51 | 27 |
| 6.2.4 New business density | 19.67 | 33 |
| 6.2.5 Scientific journal articles..... | 79.31 | 10 |

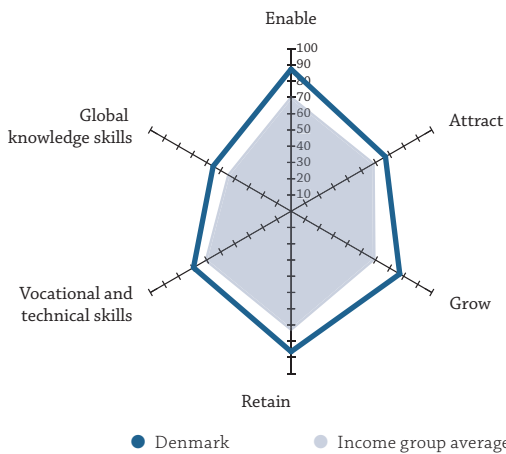
DENMARK

Key Indicators

| | |
|----------------------------|--------------------|
| Rank (out of 119)..... | 7 |
| Income group..... | High income |
| Regional group..... | Europe |
| Population (millions)..... | 5.68 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 46,635.20 |
| GDP (US\$ billions)..... | 295.16 |
| GTCI score..... | 73.79 |
| GTCI score (income group average)..... | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-----------|------|
| 1 ENABLE.....87.37 | 3 | |
| 1.1 Regulatory Landscape..... | 87.34 | 9 |
| 1.1.1 Government effectiveness..... | 89.72 | 5 |
| 1.1.2 Business-government relations..... | 74.39 | 20 |
| 1.1.3 Political stability..... | 85.44 | 24 |
| 1.1.4 Regulatory quality..... | 87.14 | 10 |
| 1.1.5 Corruption..... | 100.00 | 1 |
| 1.2 Market Landscape..... | 83.76 | 8 |
| 1.2.1 Competition intensity..... | 77.71 | 28 |
| 1.2.2 Ease of doing business..... | 96.01 | 3 |
| 1.2.3 Cluster development..... | 71.52 | 20 |
| 1.2.4 R&D expenditure..... | 71.73 | 6 |
| 1.2.5 ICT infrastructure..... | 98.64 | 3 |
| 1.2.6 Technology utilisation..... | 86.93 | 10 |
| 1.3 Business and Labour Landscape..... | 91.02 | 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..... | 82.91 | 11 |
| 1.3.4 Labour-employer cooperation..... | 95.66 | 4 |
| Management Practice | | |
| 1.3.5 Professional management..... | 89.11 | 13 |
| 1.3.6 Relationship of pay to productivity..... | 78.45 | 10 |
| 2 ATTRACT.....67.05 | 13 | |
| 2.1 External Openness..... | 54.64 | 20 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 63.45 | 30 |
| 2.1.2 Prevalence of foreign ownership..... | 80.49 | 18 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 22.13 | 37 |
| 2.1.4 International students..... | 51.72 | 17 |
| 2.1.5 Brain gain..... | 55.42 | 29 |
| 2.2 Internal Openness..... | 79.45 | 8 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 73.56 | 11 |
| 2.2.2 Tolerance of immigrants..... | 90.14 | 10 |
| 2.2.3 Social mobility..... | 86.38 | 11 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 78.56 | 46 |
| 2.2.5 Gender earnings gap..... | 60.24 | 35 |
| 2.2.6 Leadership opportunities for women..... | 87.81 | 8 |

| | Score | Rank |
|---|-----------|------|
| 3 GROW.....77.20 | 8 | |
| 3.1 Formal Education..... | 62.98 | 5 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 38.12 | 29 |
| 3.1.2 Tertiary enrolment..... | 71.39 | 13 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 57.03 | 3 |
| 3.1.4 Reading, maths, and science..... | 77.73 | 15 |
| 3.1.5 University ranking..... | 70.61 | 14 |
| 3.2 Lifelong Learning..... | 81.02 | 11 |
| 3.2.1 Quality of management schools..... | 79.89 | 11 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 82.15 | 13 |
| 3.3 Access to Growth Opportunities..... | 87.59 | 6 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 93.85 | 2 |
| 3.3.2 Personal rights..... | 89.38 | 13 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 89.09 | 15 |
| 3.3.4 Use of virtual professional networks..... | 85.74 | 4 |
| 3.3.5 Collaboration within organisations..... | 86.47 | 5 |
| 3.3.6 Collaboration across organisations..... | 81.02 | 24 |
| 4 RETAIN.....86.39 | 6 | |
| 4.1 Sustainability..... | 84.73 | 7 |
| 4.1.1 Pension system..... | 92.86 | 8 |
| 4.1.2 Social protection..... | 92.76 | 8 |
| 4.1.3 Brain retention..... | 68.56 | 21 |
| 4.2 Lifestyle..... | 88.06 | 8 |
| 4.2.1 Environmental performance..... | 97.26 | 4 |
| 4.2.2 Personal safety..... | 97.26 | 4 |
| 4.2.3 Physician density..... | 58.17 | 18 |
| 4.2.4 Sanitation..... | 99.55 | 16 |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....69.34 | 10 | |
| 5.1 Mid-Level Skills..... | 56.87 | 16 |
| 5.1.1 Workforce with secondary education..... | 36.29 | 38 |
| 5.1.2 Population with secondary education..... | 60.06 | 22 |
| 5.1.3 Technicians and associate professionals..... | 75.78 | 12 |
| 5.1.4 Labour productivity per employee..... | 55.35 | 17 |
| 5.2 Employability..... | 81.81 | 15 |
| 5.2.1 Ease of finding skilled employees..... | 80.20 | 15 |
| 5.2.2 Relevance of education system to the economy..... | 75.48 | 16 |
| 5.2.3 Skills matching with secondary education..... | 82.42 | 12 |
| 5.2.4 Skills matching with tertiary education..... | 89.15 | 10 |
| 6 GLOBAL KNOWLEDGE SKILLS.....55.37 | 13 | |
| 6.1 High-Level Skills..... | 55.96 | 15 |
| 6.1.1 Workforce with tertiary education..... | 48.09 | 27 |
| 6.1.2 Population with tertiary education..... | 55.57 | 8 |
| 6.1.3 Professionals..... | 70.52 | 7 |
| 6.1.4 Researchers..... | 90.64 | 2 |
| 6.1.5 Senior officials and managers..... | 15.63 | 70 |
| 6.1.6 Availability of scientists and engineers..... | 55.29 | 36 |
| 6.2 Talent Impact..... | 54.78 | 12 |
| 6.2.1 Innovation output..... | 69.95 | 12 |
| 6.2.2 High-value exports..... | 30.13 | 22 |
| 6.2.3 New product entrepreneurial activity..... | 61.13 | 16 |
| 6.2.4 New business density..... | 25.13 | 26 |
| 6.2.5 Scientific journal articles..... | 87.55 | 4 |

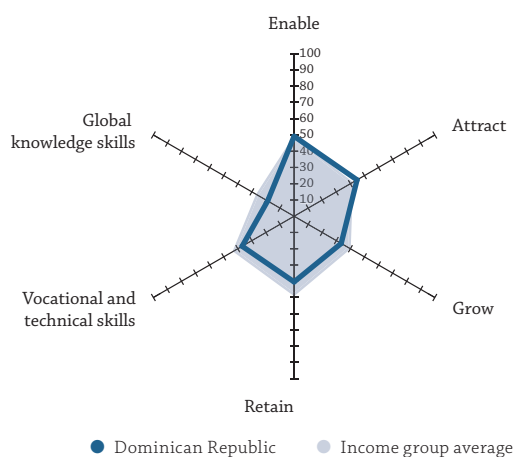
DOMINICAN REPUBLIC

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 79 |
| Income group | Upper middle income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 10.53 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 14,211.70 |
| GDP (US\$ billions) | 67.10 |
| GTCI score | 37.25 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 49.20 | 66 |
| 1.1 Regulatory Landscape..... | 46.39 | 69 |
| 1.1.1 Government effectiveness | 33.42 | 87 |
| 1.1.2 Business-government relations | 64.02 | 39 |
| 1.1.3 Political stability | 67.96 | 53 |
| 1.1.4 Regulatory quality | 44.17 | 70 |
| 1.1.5 Corruption | 22.37 | 92 |
| 1.2 Market Landscape | 51.96 | 47 |
| 1.2.1 Competition intensity | 82.00 | 19 |
| 1.2.2 Ease of doing business | 48.43 | 86 |
| 1.2.3 Cluster development | 43.96 | 61 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 38.06 | 84 |
| 1.2.6 Technology utilisation | 47.35 | 55 |
| 1.3 Business and Labour Landscape..... | 49.25 | 83 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 51.52 | 87 |
| 1.3.4 Labour-employer cooperation | 49.32 | 64 |
| Management Practice | | |
| 1.3.5 Professional management..... | 19.48 | 103 |
| 1.3.6 Relationship of pay to productivity..... | 19.53 | 110 |
| 2 ATTRACT..... | 44.72 | 52 |
| 2.1 External Openness | 38.88 | 52 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 58.75 | 38 |
| 2.1.2 Prevalence of foreign ownership | 71.85 | 36 |
| Attract People | | |
| 2.1.3 Migrant stock | 8.56 | 59 |
| 2.1.4 International students..... | 12.07 | 60 |
| 2.1.5 Brain gain | 43.17 | 56 |
| 2.2 Internal Openness | 50.56 | 56 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 48.28 | 54 |
| 2.2.2 Tolerance of immigrants..... | 54.93 | 62 |
| 2.2.3 Social mobility..... | 29.43 | 100 |
| Gender Equality | | |
| 2.2.4 Female graduates | 91.06 | 15 |
| 2.2.5 Gender earnings gap | 57.83 | 38 |
| 2.2.6 Leadership opportunities for women..... | 21.86 | 95 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 33.47 | 85 |
| 3.1 Formal Education..... | 10.93 | 107 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 7.94 | 84 |
| 3.1.2 Tertiary enrolment..... | 41.32 | 54 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 5.37 | 98 |
| 3.1.4 Reading, maths, and science | 0.00 | 68 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 44.36 | 58 |
| 3.2.1 Quality of management schools..... | 36.77 | 77 |
| 3.2.2 Prevalence of training in firms | 70.71 | 13 |
| 3.2.3 Employee development..... | 25.59 | 93 |
| 3.3 Access to Growth Opportunities | 45.12 | 68 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 38.27 | 72 |
| 3.3.2 Personal rights..... | 45.83 | 79 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 71.21 | 57 |
| 3.3.4 Use of virtual professional networks..... | 12.73 | 66 |
| 3.3.5 Collaboration within organisations | 31.01 | 81 |
| 3.3.6 Collaboration across organisations | 71.66 | 48 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 40.39 | 87 |
| 4.1 Sustainability | 26.99 | 93 |
| 4.1.1 Pension system | 24.49 | 69 |
| 4.1.2 Social protection | 17.29 | 100 |
| 4.1.3 Brain retention | 39.18 | 70 |
| 4.2 Lifestyle | 53.79 | 81 |
| 4.2.1 Environmental performance..... | 71.33 | 55 |
| 4.2.2 Personal safety | 38.45 | 105 |
| 4.2.3 Physician density | 23.56 | 70 |
| 4.2.4 Sanitation | 81.82 | 74 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 36.90 | 84 |
| 5.1 Mid-Level Skills | 28.12 | 74 |
| 5.1.1 Workforce with secondary education | 30.45 | 61 |
| 5.1.2 Population with secondary education | 31.95 | 63 |
| 5.1.3 Technicians and associate professionals | 29.15 | 71 |
| 5.1.4 Labour productivity per employee..... | 20.91 | 66 |
| 5.2 Employability..... | 45.69 | 88 |
| 5.2.1 Ease of finding skilled employees | 37.95 | 72 |
| 5.2.2 Relevance of education system to the economy | 17.31 | 108 |
| 5.2.3 Skills matching with secondary education..... | 59.91 | 72 |
| 5.2.4 Skills matching with tertiary education | 67.61 | 75 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 18.79 | 83 |
| 6.1 High-Level Skills | 21.85 | 80 |
| 6.1.1 Workforce with tertiary education | 31.69 | 60 |
| 6.1.2 Population with tertiary education | 20.24 | 65 |
| 6.1.3 Professionals..... | 18.21 | 74 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 15.00 | 74 |
| 6.1.6 Availability of scientists and engineers | 24.12 | 96 |
| 6.2 Talent Impact..... | 15.72 | 87 |
| 6.2.1 Innovation output..... | 27.42 | 71 |
| 6.2.2 High-value exports..... | 7.16 | 77 |
| 6.2.3 New product entrepreneurial activity | 37.24 | 58 |
| 6.2.4 New business density | 6.79 | 61 |
| 6.2.5 Scientific journal articles..... | 0.00 | 119 |

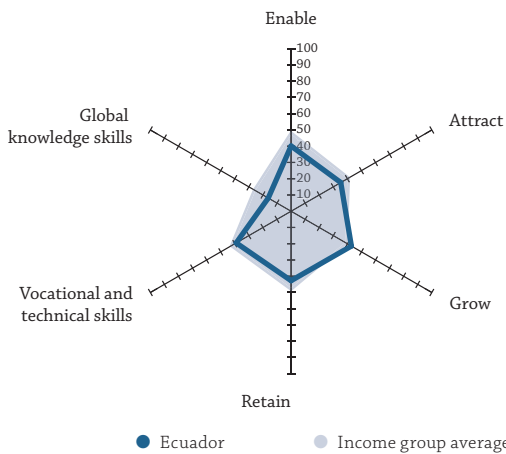
ECUADOR

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 85 |
| Income group | Upper middle income |
| Regional group..... | Latin, Central America and Caribbean |
| Population (millions) | 16.14 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 11,388.20 |
| GDP (US\$ billions) | 100.87 |
| GTCI score..... | 36.03 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 40.13 | 95 |
| 1.1 Regulatory Landscape..... | 35.43 | 101 |
| 1.1.1 Government effectiveness | 30.85 | 89 |
| 1.1.2 Business-government relations | 45.03 | 89 |
| 1.1.3 Political stability | 61.41 | 67 |
| 1.1.4 Regulatory quality | 17.48 | 115 |
| 1.1.5 Corruption | 22.37 | 92 |
| 1.2 Market Landscape..... | 37.10 | 95 |
| 1.2.1 Competition intensity | 65.43 | 70 |
| 1.2.2 Ease of doing business | 45.86 | 93 |
| 1.2.3 Cluster development | 28.79 | 91 |
| 1.2.4 R&D expenditure | 7.71 | 70 |
| 1.2.5 ICT infrastructure | 41.61 | 80 |
| 1.2.6 Technology utilisation | 33.22 | 87 |
| 1.3 Business and Labour Landscape..... | 47.87 | 86 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 44.33 | 94 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 46.10 | 105 |
| 1.3.4 Labour-employer cooperation | 50.68 | 58 |
| Management Practice | | |
| 1.3.5 Professional management..... | 26.36 | 88 |
| 1.3.6 Relationship of pay to productivity..... | 39.73 | 71 |
| 2 ATTRACT..... | 35.30 | 93 |
| 2.1 External Openness | 21.38 | 110 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 29.24 | 106 |
| 2.1.2 Prevalence of foreign ownership | 31.85 | 107 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 5.14 | 73 |
| 2.1.4 International students..... | 2.93 | 78 |
| 2.1.5 Brain gain..... | 37.75 | 69 |
| 2.2 Internal Openness..... | 49.21 | 64 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 25.29 | 91 |
| 2.2.2 Tolerance of immigrants..... | 74.65 | 34 |
| 2.2.3 Social mobility..... | 38.15 | 76 |
| Gender Equality | | |
| 2.2.4 Female graduates | 79.36 | 41 |
| 2.2.5 Gender earnings gap | 50.60 | 62 |
| 2.2.6 Leadership opportunities for women..... | 27.24 | 85 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 42.84 | 51 |
| 3.1 Formal Education..... | 32.70 | 55 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 24.51 | 50 |
| 3.1.2 Tertiary enrolment..... | 35.09 | 64 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 52.43 | 4 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 18.77 | 66 |
| 3.2 Lifelong Learning..... | 53.26 | 38 |
| 3.2.1 Quality of management schools..... | 43.65 | 61 |
| 3.2.2 Prevalence of training in firms..... | 82.45 | 4 |
| 3.2.3 Employee development..... | 33.67 | 72 |
| 3.3 Access to Growth Opportunities | 42.56 | 86 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 41.06 | 68 |
| 3.3.2 Personal rights..... | 53.66 | 67 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 53.33 | 95 |
| 3.3.4 Use of virtual professional networks..... | 20.37 | 48 |
| 3.3.5 Collaboration within organisations | 30.34 | 82 |
| 3.3.6 Collaboration across organisations | 56.59 | 102 |
| 4 RETAIN..... | 42.72 | 76 |
| 4.1 Sustainability | 31.26 | 75 |
| 4.1.1 Pension system | 24.49 | 69 |
| 4.1.2 Social protection | 35.13 | 66 |
| 4.1.3 Brain retention | 34.17 | 82 |
| 4.2 Lifestyle | 54.18 | 78 |
| 4.2.1 Environmental performance..... | 55.02 | 85 |
| 4.2.2 Personal safety | 52.63 | 87 |
| 4.2.3 Physician density | 26.44 | 64 |
| 4.2.4 Sanitation | 82.61 | 73 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 38.98 | 77 |
| 5.1 Mid-Level Skills | 24.62 | 82 |
| 5.1.1 Workforce with secondary education | 25.55 | 68 |
| 5.1.2 Population with secondary education | 40.80 | 49 |
| 5.1.3 Technicians and associate professionals | 19.73 | 83 |
| 5.1.4 Labour productivity per employee..... | 12.42 | 77 |
| 5.2 Employability..... | 53.33 | 64 |
| 5.2.1 Ease of finding skilled employees | 40.26 | 70 |
| 5.2.2 Relevance of education system to the economy | 37.50 | 71 |
| 5.2.3 Skills matching with secondary education..... | 65.56 | 52 |
| 5.2.4 Skills matching with tertiary education | 70.00 | 65 |
| 6 GLOBAL KNOWLEDGE SKILLS | 16.23 | 94 |
| 6.1 High-Level Skills | 16.18 | 90 |
| 6.1.1 Workforce with tertiary education | 22.94 | 77 |
| 6.1.2 Population with tertiary education | 20.24 | 65 |
| 6.1.3 Professionals..... | 20.81 | 71 |
| 6.1.4 Researchers..... | 4.71 | 65 |
| 6.1.5 Senior officials and managers | 6.88 | 93 |
| 6.1.6 Availability of scientists and engineers | 21.47 | 100 |
| 6.2 Talent Impact..... | 16.28 | 85 |
| 6.2.1 Innovation output..... | 23.37 | 82 |
| 6.2.2 High-value exports..... | 13.56 | 53 |
| 6.2.3 New product entrepreneurial activity | 26.09 | 72 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 2.11 | 108 |

EGYPT

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 104 |
| Income group | Lower middle income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 91.51 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 10,891.30 |
| GDP (US\$ billions) | 330.78 |
| GTCI score | 28.42 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1. ENABLE | 34.89 | 108 |
| 1.1 Regulatory Landscape..... | 29.19 | 112 |
| 1.1.1 Government effectiveness | 22.62 | 108 |
| 1.1.2 Business-government relations | 39.96 | 97 |
| 1.1.3 Political stability | 31.31 | 113 |
| 1.1.4 Regulatory quality | 25.73 | 107 |
| 1.1.5 Corruption | 26.32 | 83 |
| 1.2 Market Landscape | 40.44 | 82 |
| 1.2.1 Competition intensity | 43.14 | 111 |
| 1.2.2 Ease of doing business | 43.38 | 98 |
| 1.2.3 Cluster development | 60.06 | 30 |
| 1.2.4 R&D expenditure | 15.65 | 49 |
| 1.2.5 ICT infrastructure | 39.97 | 81 |
| 1.2.6 Technology utilisation | n/a | n/a |
| 1.3 Business and Labour Landscape..... | 35.03 | 112 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 0.00 | 118 |
| 1.3.4 Labour-employer cooperation | 43.09 | 85 |
| Management Practice | | |
| 1.3.5 Professional management..... | 8.60 | 116 |
| 1.3.6 Relationship of pay to productivity..... | 18.52 | 111 |
| 2. ATTRACT | 26.37 | 115 |
| 2.1 External Openness | 23.61 | 103 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 49.35 | 65 |
| 2.1.2 Prevalence of foreign ownership | 29.88 | 109 |
| Attract People | | |
| 2.1.3 Migrant stock | 1.04 | 101 |
| 2.1.4 International students..... | 9.67 | 65 |
| 2.1.5 Brain gain | 28.11 | 87 |
| 2.2 Internal Openness | 29.13 | 116 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 14.94 | 109 |
| 2.2.2 Tolerance of immigrants..... | 32.39 | 99 |
| 2.2.3 Social mobility..... | 11.17 | 117 |
| Gender Equality | | |
| 2.2.4 Female graduates | 63.97 | 73 |
| 2.2.5 Gender earnings gap | 13.25 | 107 |
| 2.2.6 Leadership opportunities for women | 39.07 | 65 |

| | Score | Rank |
|---|--------------|------------|
| 3. GROW | 17.95 | 118 |
| 3.1 Formal Education..... | 31.30 | 58 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 33.82 | 32 |
| 3.1.2 Tertiary enrolment..... | 31.33 | 71 |
| 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 | 28.76 | 48 |
| 3.2 Lifelong Learning..... | 0.79 | 119 |
| 3.2.1 Quality of management schools..... | 0.00 | 119 |
| 3.2.2 Prevalence of training in firms | 2.37 | 91 |
| 3.2.3 Employee development | 0.00 | 119 |
| 3.3 Access to Growth Opportunities | 21.77 | 118 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 16.76 | 114 |
| 3.3.2 Personal rights..... | 8.78 | 113 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 74.85 | 49 |
| 3.3.4 Use of virtual professional networks..... | 6.54 | 88 |
| 3.3.5 Collaboration within organisations | 23.66 | 103 |
| 3.3.6 Collaboration across organisations | 0.00 | 118 |

| | | |
|--------------------------------------|--------------|-----------|
| 4. RETAIN | 41.97 | 80 |
| 4.1 Sustainability | 30.91 | 78 |
| 4.1.1 Pension system | 54.08 | 46 |
| 4.1.2 Social protection | 9.96 | 112 |
| 4.1.3 Brain retention | 28.70 | 89 |
| 4.2 Lifestyle | 53.02 | 83 |
| 4.2.1 Environmental performance..... | 54.78 | 86 |
| 4.2.2 Personal safety | 50.66 | 92 |
| 4.2.3 Physician density | 12.66 | 85 |
| 4.2.4 Sanitation | 93.98 | 52 |

| | | |
|--|--------------|------------|
| 5. VOCATIONAL AND TECHNICAL SKILLS | 20.91 | 116 |
| 5.1 Mid-Level Skills | 31.66 | 68 |
| 5.1.1 Workforce with secondary education | 33.87 | 49 |
| 5.1.2 Population with secondary education | 34.09 | 58 |
| 5.1.3 Technicians and associate professionals | 34.53 | 60 |
| 5.1.4 Labour productivity per employee..... | 24.13 | 58 |
| 5.2 Employability..... | 10.16 | 118 |
| 5.2.1 Ease of finding skilled employees | 37.29 | 75 |
| 5.2.2 Relevance of education system to the economy | 3.37 | 117 |
| 5.2.3 Skills matching with secondary education..... | 0.00 | 118 |
| 5.2.4 Skills matching with tertiary education | 0.00 | 118 |

| | | |
|--|--------------|-----------|
| 6. GLOBAL KNOWLEDGE SKILLS | 28.42 | 59 |
| 6.1 High-Level Skills | 37.31 | 41 |
| 6.1.1 Workforce with tertiary education | 27.01 | 70 |
| 6.1.2 Population with tertiary education | 21.61 | 60 |
| 6.1.3 Professionals | 32.37 | 52 |
| 6.1.4 Researchers | 8.10 | 57 |
| 6.1.5 Senior officials and managers | 86.25 | 4 |
| 6.1.6 Availability of scientists and engineers | 48.53 | 44 |
| 6.2 Talent Impact..... | 19.52 | 77 |
| 6.2.1 Innovation output..... | 18.28 | 92 |
| 6.2.2 High-value exports..... | 1.51 | 99 |
| 6.2.3 New product entrepreneurial activity | 40.52 | 55 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 17.78 | 61 |

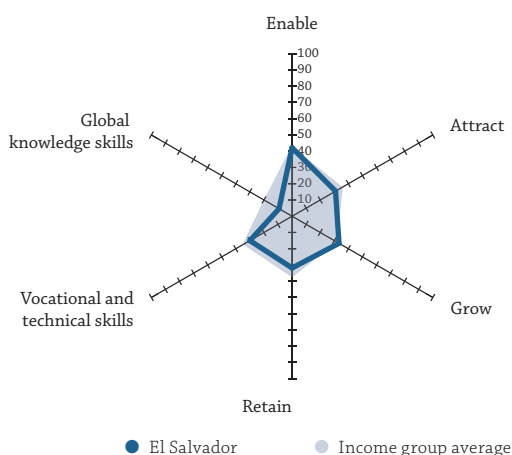
EL SALVADOR

Key Indicators

| | |
|----------------------------|---|
| Rank (out of 119)..... | 100 |
| Income group..... | Lower middle income |
| Regional group..... | Latin, Central America and Caribbean |
| Population (millions)..... | 6.13 |

| | |
|--|-----------------|
| GDP per capita (PPP US\$)..... | 8,602.07 |
| GDP (US\$ billions)..... | 25.85 |
| GTCI score..... | 29.56 |
| GTCI score (income group average)..... | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 42.14 | 90 |
| 1.1 Regulatory Landscape..... | 45.40 | 74 |
| 1.1.1 Government effectiveness..... | 35.99 | 83 |
| 1.1.2 Business-government relations..... | 49.45 | 77 |
| 1.1.3 Political stability..... | 62.62 | 63 |
| 1.1.4 Regulatory quality..... | 50.00 | 62 |
| 1.1.5 Corruption..... | 28.95 | 76 |
| 1.2 Market Landscape..... | 34.83 | 99 |
| 1.2.1 Competition intensity..... | 72.29 | 49 |
| 1.2.2 Ease of doing business..... | 51.55 | 81 |
| 1.2.3 Cluster development..... | 26.01 | 96 |
| 1.2.4 R&D expenditure..... | 1.64 | 95 |
| 1.2.5 ICT infrastructure..... | 30.29 | 95 |
| 1.2.6 Technology utilisation..... | 27.21 | 97 |
| 1.3 Business and Labour Landscape..... | 46.18 | 94 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 55.67 | 69 |
| 1.3.2 Ease of redundancy..... | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 47.48 | 98 |
| 1.3.4 Labour-employer cooperation..... | 38.21 | 93 |
| Management Practice | | |
| 1.3.5 Professional management..... | 20.92 | 100 |
| 1.3.6 Relationship of pay to productivity..... | 14.81 | 114 |
| 2 ATTRACT..... | 30.86 | 107 |
| 2.1 External Openness..... | 22.52 | 106 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 34.20 | 98 |
| 2.1.2 Prevalence of foreign ownership..... | 53.83 | 70 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 1.37 | 97 |
| 2.1.4 International students..... | 1.93 | 81 |
| 2.1.5 Brain gain..... | 21.29 | 104 |
| 2.2 Internal Openness..... | 39.20 | 100 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 42.53 | 62 |
| 2.2.2 Tolerance of immigrants..... | 52.11 | 71 |
| 2.2.3 Social mobility..... | 20.16 | 112 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 73.44 | 57 |
| 2.2.5 Gender earnings gap..... | 39.76 | 86 |
| 2.2.6 Leadership opportunities for women..... | 7.17 | 111 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 33.34 | 86 |
| 3.1 Formal Education..... | 14.63 | 97 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 28.86 | 42 |
| 3.1.2 Tertiary enrolment..... | 24.81 | 78 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 4.86 | 100 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 39.17 | 69 |
| 3.2.1 Quality of management schools..... | 26.46 | 103 |
| 3.2.2 Prevalence of training in firms..... | 66.49 | 19 |
| 3.2.3 Employee development..... | 24.58 | 96 |
| 3.3 Access to Growth Opportunities..... | 46.22 | 62 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 34.08 | 80 |
| 3.3.2 Personal rights..... | 71.24 | 42 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 62.12 | 82 |
| 3.3.4 Use of virtual professional networks..... | 12.30 | 67 |
| 3.3.5 Collaboration within organisations..... | 24.27 | 100 |
| 3.3.6 Collaboration across organisations..... | 73.31 | 41 |
| 4 RETAIN..... | 31.82 | 100 |
| 4.1 Sustainability..... | 19.52 | 111 |
| 4.1.1 Pension system..... | 21.43 | 74 |
| 4.1.2 Social protection..... | 15.72 | 105 |
| 4.1.3 Brain retention..... | 21.41 | 103 |
| 4.2 Lifestyle..... | 44.12 | 94 |
| 4.2.1 Environmental performance..... | 57.80 | 83 |
| 4.2.2 Personal safety..... | 16.62 | 115 |
| 4.2.3 Physician density..... | 30.45 | 58 |
| 4.2.4 Sanitation..... | 71.59 | 85 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 29.96 | 104 |
| 5.1 Mid-Level Skills..... | 20.68 | 88 |
| 5.1.1 Workforce with secondary education..... | 11.30 | 94 |
| 5.1.2 Population with secondary education..... | 23.82 | 75 |
| 5.1.3 Technicians and associate professionals..... | 26.91 | 73 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 39.24 | 109 |
| 5.2.1 Ease of finding skilled employees..... | 31.35 | 91 |
| 5.2.2 Relevance of education system to the economy..... | 6.97 | 115 |
| 5.2.3 Skills matching with secondary education..... | 56.00 | 92 |
| 5.2.4 Skills matching with tertiary education..... | 62.64 | 93 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 9.27 | 110 |
| 6.1 High-Level Skills..... | 6.58 | 114 |
| 6.1.1 Workforce with tertiary education..... | 0.00 | 107 |
| 6.1.2 Population with tertiary education..... | 15.95 | 71 |
| 6.1.3 Professionals..... | 8.96 | 93 |
| 6.1.4 Researchers..... | 0.64 | 88 |
| 6.1.5 Senior officials and managers..... | 11.25 | 87 |
| 6.1.6 Availability of scientists and engineers..... | 2.65 | 118 |
| 6.2 Talent Impact..... | 11.96 | 95 |
| 6.2.1 Innovation output..... | 14.76 | 101 |
| 6.2.2 High-value exports..... | 8.29 | 71 |
| 6.2.3 New product entrepreneurial activity..... | 33.21 | 64 |
| 6.2.4 New business density..... | 2.84 | 81 |
| 6.2.5 Scientific journal articles..... | 0.67 | 117 |

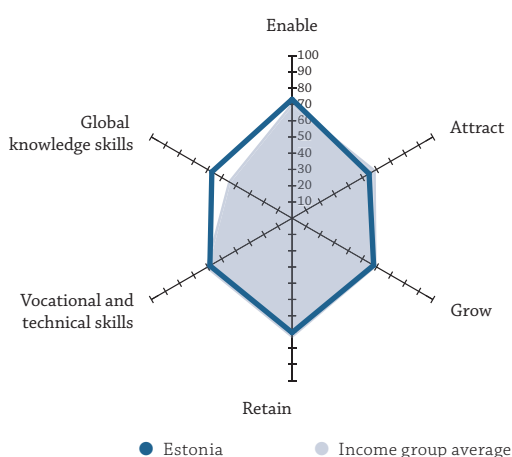
ESTONIA

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 22 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 1.31 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 28,094.80 |
| GDP (US\$ billions) | 22.69 |
| GTCI score | 61.93 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 73.17 | 23 |
| 1.1 Regulatory Landscape..... | 75.24 | 19 |
| 1.1.1 Government effectiveness | 70.18 | 27 |
| 1.1.2 Business-government relations | 67.99 | 34 |
| 1.1.3 Political stability | 78.88 | 35 |
| 1.1.4 Regulatory quality | 85.44 | 14 |
| 1.1.5 Corruption | 73.68 | 21 |
| 1.2 Market Landscape..... | 69.54 | 25 |
| 1.2.1 Competition intensity | 86.29 | 14 |
| 1.2.2 Ease of doing business | 88.89 | 10 |
| 1.2.3 Cluster development | 44.27 | 60 |
| 1.2.4 R&D expenditure | 33.41 | 24 |
| 1.2.5 ICT infrastructure | 89.50 | 17 |
| 1.2.6 Technology utilisation | 74.91 | 22 |
| 1.3 Business and Labour Landscape..... | 74.72 | 25 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 80.33 | 16 |
| 1.3.4 Labour-employer cooperation | 71.00 | 21 |
| Management Practice | | |
| 1.3.5 Professional management..... | 72.21 | 25 |
| 1.3.6 Relationship of pay to productivity..... | 78.11 | 11 |
| 2 ATTRACT..... | 54.70 | 27 |
| 2.1 External Openness | 50.00 | 31 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 59.27 | 37 |
| 2.1.2 Prevalence of foreign ownership | 89.38 | 8 |
| Attract People | | |
| 2.1.3 Migrant stock | 33.87 | 21 |
| 2.1.4 International students..... | 26.91 | 32 |
| 2.1.5 Brain gain | 40.56 | 59 |
| 2.2 Internal Openness | 59.41 | 33 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 40.23 | 68 |
| 2.2.2 Tolerance of immigrants..... | 7.04 | 115 |
| 2.2.3 Social mobility..... | 81.47 | 16 |
| Gender Equality | | |
| 2.2.4 Female graduates | 100.00 | 1 |
| 2.2.5 Gender earnings gap | 54.22 | 48 |
| 2.2.6 Leadership opportunities for women..... | 73.48 | 14 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 57.92 | 22 |
| 3.1 Formal Education..... | 48.23 | 28 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 30.92 | 37 |
| 3.1.2 Tertiary enrolment..... | 60.80 | 26 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 32.48 | 27 |
| 3.1.4 Reading, maths, and science | 87.14 | 3 |
| 3.1.5 University ranking | 29.82 | 45 |
| 3.2 Lifelong Learning..... | 56.50 | 35 |
| 3.2.1 Quality of management schools..... | 63.23 | 29 |
| 3.2.2 Prevalence of training in firms | 41.95 | 44 |
| 3.2.3 Employee development..... | 64.31 | 25 |
| 3.3 Access to Growth Opportunities | 69.04 | 20 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 59.22 | 25 |
| 3.3.2 Personal rights..... | 98.80 | 2 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 86.97 | 19 |
| 3.3.4 Use of virtual professional networks..... | 26.10 | 39 |
| 3.3.5 Collaboration within organisations | 65.38 | 24 |
| 3.3.6 Collaboration across organisations | 77.77 | 29 |
| 4 RETAIN..... | 70.37 | 27 |
| 4.1 Sustainability | 58.99 | 30 |
| 4.1.1 Pension system | 93.88 | 6 |
| 4.1.2 Social protection | 46.42 | 40 |
| 4.1.3 Brain retention | 36.67 | 74 |
| 4.2 Lifestyle | 81.75 | 19 |
| 4.2.1 Environmental performance..... | 96.10 | 8 |
| 4.2.2 Personal safety | 81.18 | 32 |
| 4.2.3 Physician density | 52.88 | 24 |
| 4.2.4 Sanitation | 96.82 | 39 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 58.39 | 27 |
| 5.1 Mid-Level Skills | 51.49 | 24 |
| 5.1.1 Workforce with secondary education | 44.05 | 25 |
| 5.1.2 Population with secondary education | 74.18 | 9 |
| 5.1.3 Technicians and associate professionals | 52.02 | 36 |
| 5.1.4 Labour productivity per employee..... | 35.73 | 46 |
| 5.2 Employability..... | 65.29 | 35 |
| 5.2.1 Ease of finding skilled employees | 41.58 | 68 |
| 5.2.2 Relevance of education system to the economy | 62.98 | 24 |
| 5.2.3 Skills matching with secondary education..... | 77.36 | 19 |
| 5.2.4 Skills matching with tertiary education | 79.24 | 29 |
| 6 GLOBAL KNOWLEDGE SKILLS | 57.02 | 10 |
| 6.1 High-Level Skills | 55.87 | 16 |
| 6.1.1 Workforce with tertiary education | 55.19 | 19 |
| 6.1.2 Population with tertiary education | 63.46 | 5 |
| 6.1.3 Professionals | 56.07 | 18 |
| 6.1.4 Researchers | 38.54 | 27 |
| 6.1.5 Senior officials and managers | 73.13 | 7 |
| 6.1.6 Availability of scientists and engineers | 48.82 | 43 |
| 6.2 Talent Impact..... | 58.18 | 6 |
| 6.2.1 Innovation output | 63.27 | 18 |
| 6.2.2 High-value exports..... | 21.47 | 39 |
| 6.2.3 New product entrepreneurial activity | 48.01 | 39 |
| 6.2.4 New business density | 92.98 | 3 |
| 6.2.5 Scientific journal articles..... | 65.17 | 18 |

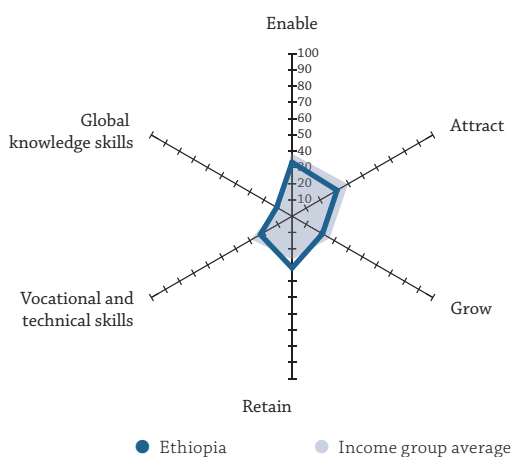
ETHIOPIA

Key Indicators

Rank (out of 119)..... **112**
 Income group..... **Low income**
 Regional group..... **Sub-Saharan Africa**
 Population (millions)..... **99.39**

GDP per capita (PPP US\$)..... **1,625.61**
 GDP (US\$ billions)..... **61.54**
 GTCI score..... **25.34**
 GTCI score (income group average)..... **27.42**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....33.18 110 | | |
| 1.1 Regulatory Landscape.....30.14 107 | | |
| 1.1.1 Government effectiveness.....25.71 99 | | |
| 1.1.2 Business-government relations.....49.89 76 | | |
| 1.1.3 Political stability.....27.91 114 | | |
| 1.1.4 Regulatory quality.....20.87 113 | | |
| 1.1.5 Corruption.....26.32 83 | | |
| 1.2 Market Landscape.....19.68 117 | | |
| 1.2.1 Competition intensity.....32.86 117 | | |
| 1.2.2 Ease of doing business.....25.88 114 | | |
| 1.2.3 Cluster development.....37.46 77 | | |
| 1.2.4 R&D expenditure.....13.79 53 | | |
| 1.2.5 ICT infrastructure.....0.00 119 | | |
| 1.2.6 Technology utilisation.....8.13 112 | | |
| 1.3 Business and Labour Landscape.....49.70 81 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring.....66.67 51 | | |
| 1.3.2 Ease of redundancy.....70.00 63 | | |
| 1.3.3 Active labour market policies.....65.60 45 | | |
| 1.3.4 Labour-employer cooperation.....33.33 100 | | |
| Management Practice | | |
| 1.3.5 Professional management.....23.21 94 | | |
| 1.3.6 Relationship of pay to productivity.....39.39 72 | | |
| 2 ATTRACT.....31.94 105 | | |
| 2.1 External Openness.....32.66 72 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer.....37.08 93 | | |
| 2.1.2 Prevalence of foreign ownership.....41.73 96 | | |
| Attract People | | |
| 2.1.3 Migrant stock.....2.23 92 | | |
| 2.1.4 International students.....n/a n/a | | |
| 2.1.5 Brain gain.....49.60 37 | | |
| 2.2 Internal Openness.....31.22 115 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities.....17.24 105 | | |
| 2.2.2 Tolerance of immigrants.....59.15 53 | | |
| 2.2.3 Social mobility.....37.60 78 | | |
| Gender Equality | | |
| 2.2.4 Female graduates.....0.00 102 | | |
| 2.2.5 Gender earnings gap.....51.81 55 | | |
| 2.2.6 Leadership opportunities for women.....21.51 96 | | |

| | Score | Rank |
|---|-------|------|
| 3 GROW.....21.61 112 | | |
| 3.1 Formal Education.....16.52 92 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment.....12.80 74 | | |
| 3.1.2 Tertiary enrolment.....6.48 104 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure.....46.80 9 | | |
| 3.1.4 Reading, maths, and science.....n/a n/a | | |
| 3.1.5 University ranking.....0.00 76 | | |
| 3.2 Lifelong Learning.....25.08 110 | | |
| 3.2.1 Quality of management schools.....24.34 105 | | |
| 3.2.2 Prevalence of training in firms.....22.96 73 | | |
| 3.2.3 Employee development.....27.95 86 | | |
| 3.3 Access to Growth Opportunities.....23.24 116 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority.....19.83 112 | | |
| 3.3.2 Personal rights.....12.66 108 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks.....23.94 118 | | |
| 3.3.4 Use of virtual professional networks.....0.00 113 | | |
| 3.3.5 Collaboration within organisations.....10.72 117 | | |
| 3.3.6 Collaboration across organisations.....72.29 45 | | |
| 4 RETAIN.....31.82 100 | | |
| 4.1 Sustainability.....40.16 60 | | |
| 4.1.1 Pension system.....n/a n/a | | |
| 4.1.2 Social protection.....37.50 59 | | |
| 4.1.3 Brain retention.....42.82 56 | | |
| 4.2 Lifestyle.....23.47 115 | | |
| 4.2.1 Environmental performance.....16.29 115 | | |
| 4.2.2 Personal safety.....59.24 74 | | |
| 4.2.3 Physician density.....0.16 110 | | |
| 4.2.4 Sanitation.....18.18 112 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....22.53 114 | | |
| 5.1 Mid-Level Skills.....3.76 114 | | |
| 5.1.1 Workforce with secondary education.....3.21 103 | | |
| 5.1.2 Population with secondary education.....3.99 98 | | |
| 5.1.3 Technicians and associate professionals.....7.62 98 | | |
| 5.1.4 Labour productivity per employee.....0.23 100 | | |
| 5.2 Employability.....41.30 104 | | |
| 5.2.1 Ease of finding skilled employees.....26.73 103 | | |
| 5.2.2 Relevance of education system to the economy.....37.26 72 | | |
| 5.2.3 Skills matching with secondary education.....44.29 113 | | |
| 5.2.4 Skills matching with tertiary education.....56.92 111 | | |
| 6 GLOBAL KNOWLEDGE SKILLS.....10.96 103 | | |
| 6.1 High-Level Skills.....10.86 106 | | |
| 6.1.1 Workforce with tertiary education.....23.21 76 | | |
| 6.1.2 Population with tertiary education.....0.86 103 | | |
| 6.1.3 Professionals.....1.16 108 | | |
| 6.1.4 Researchers.....0.40 91 | | |
| 6.1.5 Senior officials and managers.....2.50 103 | | |
| 6.1.6 Availability of scientists and engineers.....37.06 68 | | |
| 6.2 Talent Impact.....11.06 99 | | |
| 6.2.1 Innovation output.....19.86 87 | | |
| 6.2.2 High-value exports.....7.53 74 | | |
| 6.2.3 New product entrepreneurial activity.....17.51 81 | | |
| 6.2.4 New business density.....0.00 95 | | |
| 6.2.5 Scientific journal articles.....10.37 76 | | |

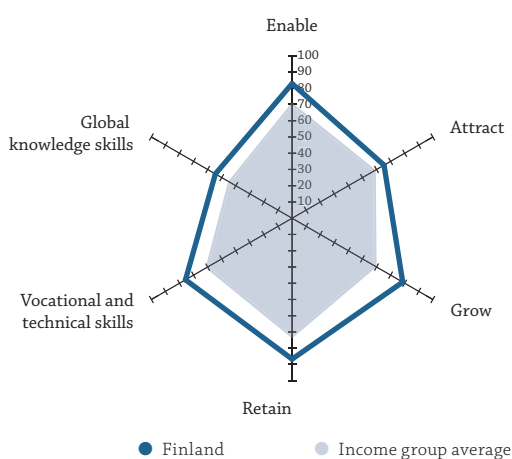
FINLAND

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 6 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 5.48 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 40,600.90 |
| GDP (US\$ billions) | 229.81 |
| GTCI score | 73.95 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 82.81 | 9 |
| 1.1 Regulatory Landscape..... | 91.58 | 4 |
| 1.1.1 Government effectiveness | 88.95 | 7 |
| 1.1.2 Business-government relations | 91.61 | 5 |
| 1.1.3 Political stability | 89.08 | 10 |
| 1.1.4 Regulatory quality | 89.56 | 4 |
| 1.1.5 Corruption | 98.68 | 3 |
| 1.2 Market Landscape..... | 80.22 | 11 |
| 1.2.1 Competition intensity | 58.57 | 86 |
| 1.2.2 Ease of doing business | 88.50 | 11 |
| 1.2.3 Cluster development | 79.26 | 16 |
| 1.2.4 R&D expenditure | 73.83 | 4 |
| 1.2.5 ICT infrastructure | 89.63 | 16 |
| 1.2.6 Technology utilisation | 91.52 | 6 |
| 1.3 Business and Labour Landscape..... | 76.62 | 20 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 79.13 | 18 |
| 1.3.4 Labour-employer cooperation | 71.54 | 20 |
| Management Practice | | |
| 1.3.5 Professional management..... | 100.00 | 1 |
| 1.3.6 Relationship of pay to productivity..... | 73.40 | 16 |
| 2 ATTRACT..... | 65.33 | 16 |
| 2.1 External Openness | 44.40 | 35 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 54.31 | 52 |
| 2.1.2 Prevalence of foreign ownership | 71.60 | 37 |
| Attract People | | |
| 2.1.3 Migrant stock | 12.51 | 52 |
| 2.1.4 International students..... | 39.81 | 22 |
| 2.1.5 Brain gain..... | 43.78 | 54 |
| 2.2 Internal Openness..... | 86.25 | 3 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 96.55 | 3 |
| 2.2.2 Tolerance of immigrants..... | 76.06 | 33 |
| 2.2.3 Social mobility..... | 100.00 | 1 |
| Gender Equality | | |
| 2.2.4 Female graduates | 84.13 | 29 |
| 2.2.5 Gender earnings gap | 65.06 | 22 |
| 2.2.6 Leadership opportunities for women..... | 95.70 | 4 |

| | Score | Rank |
|---|--------------|----------|
| 3 GROW..... | 78.60 | 4 |
| 3.1 Formal Education..... | 70.02 | 1 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 76.80 | 3 |
| 3.1.2 Tertiary enrolment..... | 76.49 | 6 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 49.10 | 6 |
| 3.1.4 Reading, maths, and science | 86.41 | 5 |
| 3.1.5 University ranking | 61.32 | 17 |
| 3.2 Lifelong Learning..... | 82.97 | 9 |
| 3.2.1 Quality of management schools..... | 76.72 | 17 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 89.23 | 6 |
| 3.3 Access to Growth Opportunities | 82.80 | 11 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 85.47 | 5 |
| 3.3.2 Personal rights..... | 98.80 | 2 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 91.21 | 11 |
| 3.3.4 Use of virtual professional networks..... | 36.65 | 26 |
| 3.3.5 Collaboration within organisations | 86.23 | 6 |
| 3.3.6 Collaboration across organisations | 98.42 | 3 |

| | | |
|--------------------------------------|--------------|----------|
| 4 RETAIN..... | 86.69 | 5 |
| 4.1 Sustainability | 88.04 | 4 |
| 4.1.1 Pension system | 89.80 | 18 |
| 4.1.2 Social protection | 94.83 | 4 |
| 4.1.3 Brain retention | 79.50 | 10 |
| 4.2 Lifestyle | 85.34 | 14 |
| 4.2.1 Environmental performance..... | 100.00 | 1 |
| 4.2.2 Personal safety | 96.19 | 9 |
| 4.2.3 Physician density | 47.92 | 31 |
| 4.2.4 Sanitation | 97.27 | 35 |

| | | |
|--|--------------|----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 75.74 | 5 |
| 5.1 Mid-Level Skills | 58.20 | 14 |
| 5.1.1 Workforce with secondary education | 40.39 | 28 |
| 5.1.2 Population with secondary education | 55.06 | 27 |
| 5.1.3 Technicians and associate professionals | 83.86 | 7 |
| 5.1.4 Labour productivity per employee..... | 53.50 | 18 |
| 5.2 Employability..... | 93.28 | 2 |
| 5.2.1 Ease of finding skilled employees | 98.35 | 2 |
| 5.2.2 Relevance of education system to the economy | 90.14 | 3 |
| 5.2.3 Skills matching with secondary education..... | 93.20 | 3 |
| 5.2.4 Skills matching with tertiary education | 91.42 | 4 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 54.51 | 14 |
| 6.1 High-Level Skills | 60.99 | 8 |
| 6.1.1 Workforce with tertiary education | 59.10 | 15 |
| 6.1.2 Population with tertiary education | 38.42 | 23 |
| 6.1.3 Professionals..... | 66.47 | 10 |
| 6.1.4 Researchers..... | 82.55 | 5 |
| 6.1.5 Senior officials and managers | 19.38 | 66 |
| 6.1.6 Availability of scientists and engineers | 100.00 | 1 |
| 6.2 Talent Impact..... | 48.04 | 19 |
| 6.2.1 Innovation output..... | 68.89 | 13 |
| 6.2.2 High-value exports..... | 16.38 | 47 |
| 6.2.3 New product entrepreneurial activity | 53.87 | 28 |
| 6.2.4 New business density | 19.73 | 32 |
| 6.2.5 Scientific journal articles..... | 81.33 | 8 |

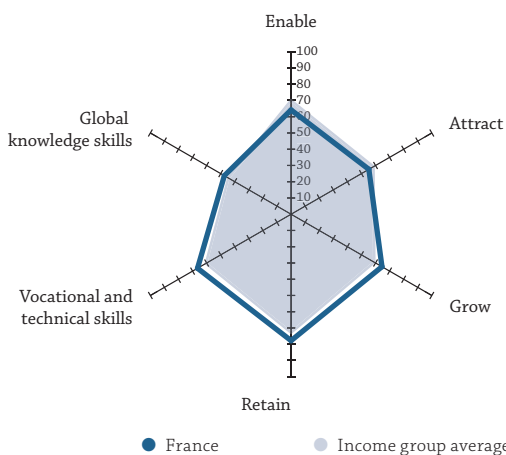
FRANCE

Key Indicators

| | |
|----------------------------|--------------------|
| Rank (out of 119)..... | 21 |
| Income group..... | High income |
| Regional group..... | Europe |
| Population (millions)..... | 66.81 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 39,678.00 |
| GDP (US\$ billions)..... | 2,421.68 |
| GTCI score..... | 62.61 |
| GTCI score (income group average)..... | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 64.16 | 29 |
| 1.1 Regulatory Landscape..... | 66.24 | 30 |
| 1.1.1 Government effectiveness..... | 79.18 | 20 |
| 1.1.2 Business-government relations..... | 36.20 | 103 |
| 1.1.3 Political stability..... | 70.39 | 48 |
| 1.1.4 Regulatory quality..... | 73.06 | 26 |
| 1.1.5 Corruption..... | 72.37 | 22 |
| 1.2 Market Landscape..... | 74.11 | 18 |
| 1.2.1 Competition intensity..... | 86.57 | 12 |
| 1.2.2 Ease of doing business..... | 79.98 | 27 |
| 1.2.3 Cluster development..... | 69.04 | 24 |
| 1.2.4 R&D expenditure..... | 52.57 | 13 |
| 1.2.5 ICT infrastructure..... | 90.04 | 15 |
| 1.2.6 Technology utilisation..... | 66.43 | 31 |
| 1.3 Business and Labour Landscape..... | 52.12 | 73 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 22.33 | 105 |
| 1.3.2 Ease of redundancy..... | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 61.82 | 55 |
| 1.3.4 Labour-employer cooperation..... | 37.94 | 94 |
| Management Practice | | |
| 1.3.5 Professional management..... | 76.79 | 22 |
| 1.3.6 Relationship of pay to productivity..... | 53.87 | 50 |
| 2 ATTRACT..... | 55.25 | 25 |
| 2.1 External Openness..... | 54.64 | 20 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 64.75 | 27 |
| 2.1.2 Prevalence of foreign ownership..... | 83.70 | 12 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 26.52 | 31 |
| 2.1.4 International students..... | 51.25 | 19 |
| 2.1.5 Brain gain..... | 46.99 | 43 |
| 2.2 Internal Openness..... | 55.86 | 44 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 36.78 | 73 |
| 2.2.2 Tolerance of immigrants..... | 78.87 | 27 |
| 2.2.3 Social mobility..... | 55.31 | 35 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 72.11 | 62 |
| 2.2.5 Gender earnings gap..... | 66.27 | 19 |
| 2.2.6 Leadership opportunities for women..... | 25.81 | 87 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 64.57 | 17 |
| 3.1 Formal Education..... | 53.75 | 19 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 29.95 | 38 |
| 3.1.2 Tertiary enrolment..... | 56.24 | 35 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 29.41 | 37 |
| 3.1.4 Reading, maths, and science..... | 73.71 | 23 |
| 3.1.5 University ranking..... | 79.45 | 10 |
| 3.2 Lifelong Learning..... | 73.97 | 18 |
| 3.2.1 Quality of management schools..... | 78.57 | 14 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 69.36 | 22 |
| 3.3 Access to Growth Opportunities..... | 65.99 | 22 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 61.17 | 24 |
| 3.3.2 Personal rights..... | 80.64 | 30 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 77.88 | 42 |
| 3.3.4 Use of virtual professional networks..... | 43.98 | 22 |
| 3.3.5 Collaboration within organisations..... | 57.29 | 26 |
| 3.3.6 Collaboration across organisations..... | 74.99 | 36 |
| 4 RETAIN..... | 77.78 | 16 |
| 4.1 Sustainability..... | 73.40 | 17 |
| 4.1.1 Pension system..... | 86.73 | 23 |
| 4.1.2 Social protection..... | 97.46 | 2 |
| 4.1.3 Brain retention..... | 35.99 | 75 |
| 4.2 Lifestyle..... | 82.17 | 18 |
| 4.2.1 Environmental performance..... | 95.37 | 10 |
| 4.2.2 Personal safety..... | 83.36 | 28 |
| 4.2.3 Physician density..... | 51.44 | 28 |
| 4.2.4 Sanitation..... | 98.52 | 29 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 66.48 | 15 |
| 5.1 Mid-Level Skills..... | 60.47 | 11 |
| 5.1.1 Workforce with secondary education..... | 38.94 | 32 |
| 5.1.2 Population with secondary education..... | 55.21 | 26 |
| 5.1.3 Technicians and associate professionals..... | 90.13 | 3 |
| 5.1.4 Labour productivity per employee..... | 57.62 | 13 |
| 5.2 Employability..... | 72.49 | 24 |
| 5.2.1 Ease of finding skilled employees..... | 80.53 | 13 |
| 5.2.2 Relevance of education system to the economy..... | 59.38 | 30 |
| 5.2.3 Skills matching with secondary education..... | 70.00 | 35 |
| 5.2.4 Skills matching with tertiary education..... | 80.05 | 27 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 47.42 | 21 |
| 6.1 High-Level Skills..... | 48.86 | 22 |
| 6.1.1 Workforce with tertiary education..... | 53.50 | 22 |
| 6.1.2 Population with tertiary education..... | 36.02 | 25 |
| 6.1.3 Professionals..... | 48.55 | 28 |
| 6.1.4 Researchers..... | 50.42 | 21 |
| 6.1.5 Senior officials and managers..... | 43.75 | 27 |
| 6.1.6 Availability of scientists and engineers..... | 60.88 | 26 |
| 6.2 Talent Impact..... | 45.98 | 21 |
| 6.2.1 Innovation output..... | 63.27 | 18 |
| 6.2.2 High-value exports..... | 50.47 | 7 |
| 6.2.3 New product entrepreneurial activity..... | 52.78 | 30 |
| 6.2.4 New business density..... | 12.94 | 44 |
| 6.2.5 Scientific journal articles..... | 50.46 | 32 |

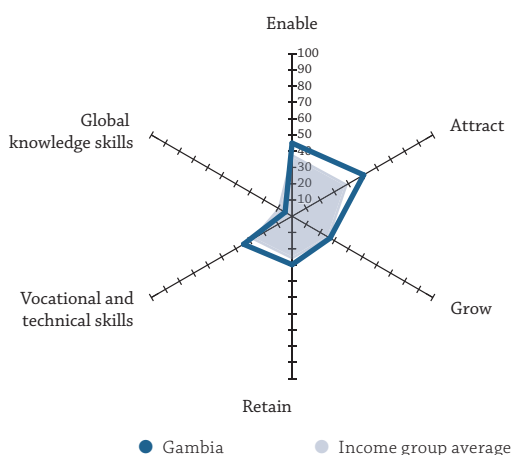
GAMBIA

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 96 |
| Income group | Low income |
| Regional group | Sub-Saharan Africa |
| Population (millions) | 1.99 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 1,636.45 |
| GDP (US\$ billions) | 0.85 |
| GTCI score | 32.00 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 44.98 | 85 |
| 1.1 Regulatory Landscape..... | 41.18 | 86 |
| 1.1.1 Government effectiveness | 19.28 | 111 |
| 1.1.2 Business-government relations | 73.51 | 22 |
| 1.1.3 Political stability | 64.08 | 58 |
| 1.1.4 Regulatory quality | 33.25 | 97 |
| 1.1.5 Corruption | 15.79 | 110 |
| 1.2 Market Landscape..... | 31.62 | 104 |
| 1.2.1 Competition intensity | 60.29 | 79 |
| 1.2.2 Ease of doing business | 34.17 | 110 |
| 1.2.3 Cluster development | 45.20 | 57 |
| 1.2.4 R&D expenditure | 2.80 | 90 |
| 1.2.5 ICT infrastructure | 12.96 | 107 |
| 1.2.6 Technology utilisation | 34.28 | 83 |
| 1.3 Business and Labour Landscape..... | 62.15 | 39 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 60.67 | 58 |
| 1.3.4 Labour-employer cooperation | 50.14 | 60 |
| Management Practice | | |
| 1.3.5 Professional management..... | 49.57 | 44 |
| 1.3.6 Relationship of pay to productivity..... | 52.53 | 52 |
| 2 ATTRACT..... | 50.84 | 35 |
| 2.1 External Openness | 44.05 | 38 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 40.73 | 84 |
| 2.1.2 Prevalence of foreign ownership | 67.90 | 43 |
| Attract People | | |
| 2.1.3 Migrant stock | 21.18 | 40 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain | 46.39 | 47 |
| 2.2 Internal Openness | 57.62 | 37 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 72.41 | 13 |
| 2.2.2 Tolerance of immigrants..... | n/a | n/a |
| 2.2.3 Social mobility..... | 41.14 | 67 |
| Gender Equality | | |
| 2.2.4 Female graduates | 49.67 | 88 |
| 2.2.5 Gender earnings gap | 61.45 | 30 |
| 2.2.6 Leadership opportunities for women..... | 63.44 | 25 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 26.97 | 102 |
| 3.1 Formal Education..... | 5.71 | 113 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 15.43 | 68 |
| 3.1.2 Tertiary enrolment..... | 2.03 | 112 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 5.37 | 98 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 35.18 | 81 |
| 3.2.1 Quality of management schools..... | 43.92 | 59 |
| 3.2.2 Prevalence of training in firms..... | 29.29 | 62 |
| 3.2.3 Employee development..... | 32.32 | 76 |
| 3.3 Access to Growth Opportunities | 40.02 | 96 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 56.70 | 28 |
| 3.3.2 Personal rights..... | 27.21 | 99 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 54.24 | 94 |
| 3.3.4 Use of virtual professional networks..... | 4.35 | 93 |
| 3.3.5 Collaboration within organisations | 37.51 | 63 |
| 3.3.6 Collaboration across organisations | 60.12 | 92 |
| 4 RETAIN..... | 29.79 | 104 |
| 4.1 Sustainability | 27.69 | 90 |
| 4.1.1 Pension system | 1.02 | 103 |
| 4.1.2 Social protection | 39.67 | 53 |
| 4.1.3 Brain retention | 42.37 | 58 |
| 4.2 Lifestyle | 31.89 | 106 |
| 4.2.1 Environmental performance..... | 27.98 | 106 |
| 4.2.2 Personal safety | 44.84 | 99 |
| 4.2.3 Physician density | 1.44 | 103 |
| 4.2.4 Sanitation | 53.30 | 99 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 34.45 | 90 |
| 5.1 Mid-Level Skills | 7.96 | 108 |
| 5.1.1 Workforce with secondary education | 10.09 | 96 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 5.83 | 104 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 60.93 | 45 |
| 5.2.1 Ease of finding skilled employees | 46.53 | 61 |
| 5.2.2 Relevance of education system to the economy | 56.01 | 36 |
| 5.2.3 Skills matching with secondary education..... | 66.80 | 46 |
| 5.2.4 Skills matching with tertiary education | 74.38 | 44 |
| 6 GLOBAL KNOWLEDGE SKILLS | 4.98 | 118 |
| 6.1 High-Level Skills | 4.15 | 119 |
| 6.1.1 Workforce with tertiary education | 0.84 | 106 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals | 8.38 | 94 |
| 6.1.4 Researchers | 0.26 | 96 |
| 6.1.5 Senior officials and managers | 1.88 | 106 |
| 6.1.6 Availability of scientists and engineers | 9.41 | 113 |
| 6.2 Talent Impact..... | 5.81 | 114 |
| 6.2.1 Innovation output..... | n/a | n/a |
| 6.2.2 High-value exports..... | 0.00 | 110 |
| 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..... | 11.63 | 73 |

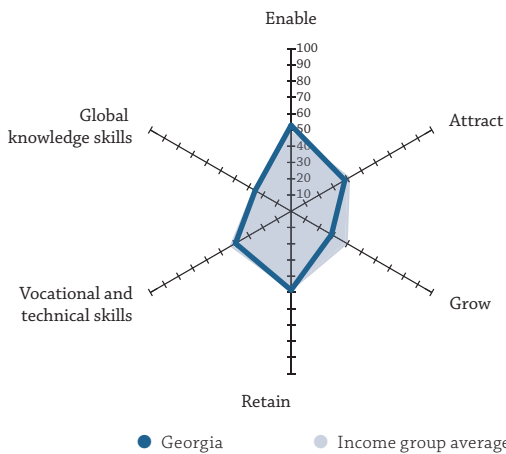
GEORGIA

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 72 |
| Income group | Upper middle income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 3.68 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 9,679.19 |
| GDP (US\$ billions) | 13.97 |
| GTCI score | 38.89 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 52.86 | 50 |
| 1.1 Regulatory Landscape..... | 57.96 | 44 |
| 1.1.1 Government effectiveness | 52.44 | 47 |
| 1.1.2 Business-government relations | 59.16 | 61 |
| 1.1.3 Political stability | 54.13 | 81 |
| 1.1.4 Regulatory quality | 67.48 | 34 |
| 1.1.5 Corruption | 56.58 | 35 |
| 1.2 Market Landscape..... | 42.56 | 74 |
| 1.2.1 Competition intensity | 64.00 | 72 |
| 1.2.2 Ease of doing business | 87.30 | 14 |
| 1.2.3 Cluster development | 19.81 | 108 |
| 1.2.4 R&D expenditure | 2.10 | 92 |
| 1.2.5 ICT infrastructure | 55.66 | 63 |
| 1.2.6 Technology utilisation | 26.50 | 98 |
| 1.3 Business and Labour Landscape..... | 58.06 | 58 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 47.76 | 95 |
| 1.3.4 Labour-employer cooperation | 45.26 | 78 |
| Management Practice | | |
| 1.3.5 Professional management..... | 47.28 | 51 |
| 1.3.6 Relationship of pay to productivity..... | 41.41 | 69 |
| 2 ATTRACT..... | 38.19 | 85 |
| 2.1 External Openness | 29.01 | 84 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 39.16 | 89 |
| 2.1.2 Prevalence of foreign ownership | 50.37 | 79 |
| Attract People | | |
| 2.1.3 Migrant stock | 9.16 | 58 |
| 2.1.4 International students..... | 19.44 | 48 |
| 2.1.5 Brain gain..... | 26.91 | 88 |
| 2.2 Internal Openness..... | 47.37 | 73 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 25.29 | 91 |
| 2.2.2 Tolerance of immigrants..... | 40.85 | 87 |
| 2.2.3 Social mobility..... | 44.96 | 57 |
| Gender Equality | | |
| 2.2.4 Female graduates | 87.03 | 24 |
| 2.2.5 Gender earnings gap | 37.35 | 89 |
| 2.2.6 Leadership opportunities for women..... | 48.75 | 49 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 28.72 | 97 |
| 3.1 Formal Education..... | 16.69 | 90 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 7.13 | 88 |
| 3.1.2 Tertiary enrolment..... | 37.69 | 60 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 7.42 | 93 |
| 3.1.4 Reading, maths, and science | 31.23 | 59 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 20.49 | 115 |
| 3.2.1 Quality of management schools..... | 33.60 | 86 |
| 3.2.2 Prevalence of training in firms..... | 9.37 | 88 |
| 3.2.3 Employee development..... | 18.52 | 109 |
| 3.3 Access to Growth Opportunities | 48.97 | 57 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 34.08 | 80 |
| 3.3.2 Personal rights..... | 70.32 | 44 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 78.18 | 38 |
| 3.3.4 Use of virtual professional networks..... | 8.69 | 74 |
| 3.3.5 Collaboration within organisations | 39.62 | 57 |
| 3.3.6 Collaboration across organisations | 62.93 | 86 |
| 4 RETAIN..... | 48.53 | 62 |
| 4.1 Sustainability | 23.81 | 103 |
| 4.1.1 Pension system | 27.55 | 66 |
| 4.1.2 Social protection | 14.28 | 107 |
| 4.1.3 Brain retention | 29.61 | 86 |
| 4.2 Lifestyle..... | 73.25 | 42 |
| 4.2.1 Environmental performance..... | 52.00 | 92 |
| 4.2.2 Personal safety | 80.28 | 34 |
| 4.2.3 Physician density | 76.28 | 3 |
| 4.2.4 Sanitation | 84.43 | 70 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 39.49 | 72 |
| 5.1 Mid-Level Skills | 38.91 | 55 |
| 5.1.1 Workforce with secondary education | 54.73 | 10 |
| 5.1.2 Population with secondary education | 64.19 | 21 |
| 5.1.3 Technicians and associate professionals | 25.56 | 76 |
| 5.1.4 Labour productivity per employee..... | 11.16 | 80 |
| 5.2 Employability..... | 40.06 | 107 |
| 5.2.1 Ease of finding skilled employees | 24.42 | 107 |
| 5.2.2 Relevance of education system to the economy | 31.01 | 84 |
| 5.2.3 Skills matching with secondary education..... | 47.79 | 108 |
| 5.2.4 Skills matching with tertiary education | 57.04 | 110 |
| 6 GLOBAL KNOWLEDGE SKILLS | 25.53 | 65 |
| 6.1 High-Level Skills | 26.99 | 64 |
| 6.1.1 Workforce with tertiary education | 44.57 | 33 |
| 6.1.2 Population with tertiary education | 26.24 | 53 |
| 6.1.3 Professionals..... | 34.39 | 50 |
| 6.1.4 Researchers..... | 15.48 | 43 |
| 6.1.5 Senior officials and managers | 21.25 | 62 |
| 6.1.6 Availability of scientists and engineers | 20.00 | 102 |
| 6.2 Talent Impact..... | 24.07 | 62 |
| 6.2.1 Innovation output..... | 31.11 | 61 |
| 6.2.2 High-value exports..... | 10.55 | 65 |
| 6.2.3 New product entrepreneurial activity | 22.81 | 76 |
| 6.2.4 New business density | 32.62 | 20 |
| 6.2.5 Scientific journal articles..... | 23.26 | 56 |

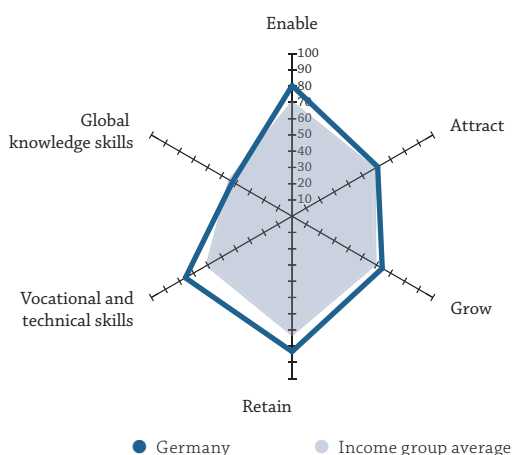
GERMANY

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 19 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 81.41 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 47,268.40 |
| GDP (US\$ billions) | 3,355.77 |
| GTCI score..... | 67.77 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 80.33 | 15 |
| 1.1 Regulatory Landscape..... | 82.76 | 13 |
| 1.1.1 Government effectiveness | 86.89 | 11 |
| 1.1.2 Business-government relations | 71.74 | 25 |
| 1.1.3 Political stability | 81.31 | 29 |
| 1.1.4 Regulatory quality..... | 85.68 | 12 |
| 1.1.5 Corruption | 88.16 | 10 |
| 1.2 Market Landscape..... | 85.91 | 5 |
| 1.2.1 Competition intensity | 90.57 | 7 |
| 1.2.2 Ease of doing business | 86.69 | 15 |
| 1.2.3 Cluster development | 93.81 | 3 |
| 1.2.4 R&D expenditure | 66.82 | 9 |
| 1.2.5 ICT infrastructure..... | 92.77 | 11 |
| 1.2.6 Technology utilisation..... | 84.81 | 12 |
| 1.3 Business and Labour Landscape..... | 72.33 | 26 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 85.13 | 8 |
| 1.3.4 Labour-employer cooperation | 69.65 | 23 |
| Management Practice | | |
| 1.3.5 Professional management..... | 83.09 | 15 |
| 1.3.6 Relationship of pay to productivity..... | 80.47 | 9 |
| 2 ATTRACT..... | 60.80 | 22 |
| 2.1 External Openness | 56.02 | 19 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 69.71 | 16 |
| 2.1.2 Prevalence of foreign ownership | 68.64 | 41 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 32.68 | 22 |
| 2.1.4 International students..... | 39.97 | 21 |
| 2.1.5 Brain gain..... | 69.08 | 15 |
| 2.2 Internal Openness..... | 65.58 | 21 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 62.07 | 33 |
| 2.2.2 Tolerance of immigrants..... | 88.73 | 12 |
| 2.2.3 Social mobility..... | 74.39 | 21 |
| Gender Equality | | |
| 2.2.4 Female graduates | 57.89 | 79 |
| 2.2.5 Gender earnings gap | 60.24 | 35 |
| 2.2.6 Leadership opportunities for women..... | 50.18 | 42 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 64.06 | 18 |
| 3.1 Formal Education..... | 55.39 | 15 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 29.84 | 40 |
| 3.1.2 Tertiary enrolment..... | 59.67 | 30 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 31.20 | 34 |
| 3.1.4 Reading, maths, and science | 79.51 | 10 |
| 3.1.5 University ranking | 76.72 | 11 |
| 3.2 Lifelong Learning..... | 66.55 | 23 |
| 3.2.1 Quality of management schools..... | 74.60 | 22 |
| 3.2.2 Prevalence of training in firms..... | 42.22 | 43 |
| 3.2.3 Employee development..... | 82.83 | 12 |
| 3.3 Access to Growth Opportunities | 70.23 | 17 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 73.46 | 18 |
| 3.3.2 Personal rights..... | 79.06 | 32 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 73.03 | 54 |
| 3.3.4 Use of virtual professional networks..... | 13.23 | 65 |
| 3.3.5 Collaboration within organisations | 83.18 | 7 |
| 3.3.6 Collaboration across organisations | 99.42 | 2 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 83.28 | 10 |
| 4.1 Sustainability | 80.55 | 13 |
| 4.1.1 Pension system | 86.73 | 23 |
| 4.1.2 Social protection | 82.93 | 12 |
| 4.1.3 Brain retention | 71.98 | 16 |
| 4.2 Lifestyle..... | 86.01 | 11 |
| 4.2.1 Environmental performance..... | 88.02 | 30 |
| 4.2.2 Personal safety | 91.06 | 15 |
| 4.2.3 Physician density | 65.87 | 7 |
| 4.2.4 Sanitation | 99.09 | 20 |

| | | |
|--|--------------|----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 75.78 | 4 |
| 5.1 Mid-Level Skills | 68.05 | 4 |
| 5.1.1 Workforce with secondary education | 50.79 | 14 |
| 5.1.2 Population with secondary education | 69.19 | 15 |
| 5.1.3 Technicians and associate professionals | 99.10 | 2 |
| 5.1.4 Labour productivity per employee..... | 53.12 | 19 |
| 5.2 Employability..... | 83.52 | 11 |
| 5.2.1 Ease of finding skilled employees | 81.19 | 12 |
| 5.2.2 Relevance of education system to the economy | 78.37 | 13 |
| 5.2.3 Skills matching with secondary education..... | 85.45 | 5 |
| 5.2.4 Skills matching with tertiary education | 89.07 | 11 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 42.34 | 30 |
| 6.1 High-Level Skills | 43.87 | 31 |
| 6.1.1 Workforce with tertiary education | 40.15 | 40 |
| 6.1.2 Population with tertiary education | 23.67 | 56 |
| 6.1.3 Professionals..... | 48.27 | 30 |
| 6.1.4 Researchers..... | 53.61 | 19 |
| 6.1.5 Senior officials and managers | 27.50 | 49 |
| 6.1.6 Availability of scientists and engineers | 70.00 | 16 |
| 6.2 Talent Impact..... | 40.82 | 30 |
| 6.2.1 Innovation output..... | 78.38 | 6 |
| 6.2.2 High-value exports..... | 31.45 | 21 |
| 6.2.3 New product entrepreneurial activity | 36.86 | 59 |
| 6.2.4 New business density | 7.31 | 59 |
| 6.2.5 Scientific journal articles..... | 50.08 | 33 |

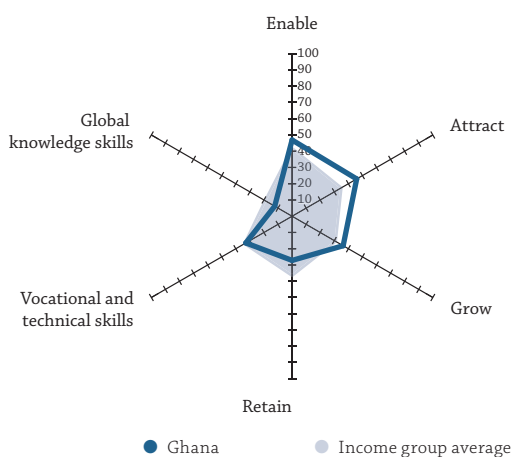
GHANA

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 90 |
| Income group | Lower middle income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 27.41 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 4,200.55 |
| GDP (US\$ billions) | 37.86 |
| GTCI score..... | 33.58 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 46.91 | 76 |
| 1.1 Regulatory Landscape..... | 44.91 | 77 |
| 1.1.1 Government effectiveness | 35.48 | 84 |
| 1.1.2 Business-government relations | 41.94 | 94 |
| 1.1.3 Political stability | 64.56 | 56 |
| 1.1.4 Regulatory quality..... | 44.42 | 68 |
| 1.1.5 Corruption | 38.16 | 57 |
| 1.2 Market Landscape..... | 40.12 | 85 |
| 1.2.1 Competition intensity | 67.43 | 67 |
| 1.2.2 Ease of doing business | 47.45 | 90 |
| 1.2.3 Cluster development | 50.15 | 43 |
| 1.2.4 R&D expenditure | 8.64 | 65 |
| 1.2.5 ICT infrastructure..... | 33.83 | 90 |
| 1.2.6 Technology utilisation..... | 33.22 | 87 |
| 1.3 Business and Labour Landscape..... | 55.71 | 64 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 50.00 | 98 |
| 1.3.3 Active labour market policies..... | 55.57 | 74 |
| 1.3.4 Labour-employer cooperation | 52.30 | 54 |
| Management Practice | | |
| 1.3.5 Professional management..... | 54.73 | 31 |
| 1.3.6 Relationship of pay to productivity..... | 32.66 | 90 |
| 2 ATTRACT..... | 45.89 | 48 |
| 2.1 External Openness | 38.48 | 57 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 45.69 | 72 |
| 2.1.2 Prevalence of foreign ownership | 72.10 | 35 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 3.07 | 86 |
| 2.1.4 International students..... | 22.15 | 38 |
| 2.1.5 Brain gain..... | 49.40 | 38 |
| 2.2 Internal Openness..... | 53.30 | 49 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 62.07 | 33 |
| 2.2.2 Tolerance of immigrants..... | 63.38 | 47 |
| 2.2.3 Social mobility..... | 45.50 | 55 |
| Gender Equality | | |
| 2.2.4 Female graduates | 31.07 | 97 |
| 2.2.5 Gender earnings gap | 68.67 | 17 |
| 2.2.6 Leadership opportunities for women..... | 49.10 | 47 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 36.29 | 74 |
| 3.1 Formal Education..... | 12.46 | 101 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 2.79 | 100 |
| 3.1.2 Tertiary enrolment..... | 13.39 | 93 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 26.60 | 45 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 7.06 | 75 |
| 3.2 Lifelong Learning..... | 47.34 | 53 |
| 3.2.1 Quality of management schools..... | 51.85 | 47 |
| 3.2.2 Prevalence of training in firms..... | 48.42 | 37 |
| 3.2.3 Employee development..... | 41.75 | 56 |
| 3.3 Access to Growth Opportunities | 49.07 | 56 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 45.53 | 56 |
| 3.3.2 Personal rights..... | 73.40 | 40 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 61.52 | 83 |
| 3.3.4 Use of virtual professional networks..... | 6.64 | 87 |
| 3.3.5 Collaboration within organisations | 38.49 | 61 |
| 3.3.6 Collaboration across organisations | 68.87 | 60 |
| 4 RETAIN..... | 27.18 | 108 |
| 4.1 Sustainability | 27.80 | 89 |
| 4.1.1 Pension system | 6.12 | 91 |
| 4.1.2 Social protection | 28.97 | 77 |
| 4.1.3 Brain retention | 48.29 | 43 |
| 4.2 Lifestyle | 26.56 | 112 |
| 4.2.1 Environmental performance..... | 40.67 | 101 |
| 4.2.2 Personal safety | 60.99 | 71 |
| 4.2.3 Physician density | 1.28 | 104 |
| 4.2.4 Sanitation | 3.30 | 117 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 32.86 | 95 |
| 5.1 Mid-Level Skills | 8.09 | 107 |
| 5.1.1 Workforce with secondary education | n/a | n/a |
| 5.1.2 Population with secondary education | 12.98 | 92 |
| 5.1.3 Technicians and associate professionals | 7.17 | 101 |
| 5.1.4 Labour productivity per employee..... | 4.11 | 89 |
| 5.2 Employability..... | 57.63 | 50 |
| 5.2.1 Ease of finding skilled employees | 55.45 | 45 |
| 5.2.2 Relevance of education system to the economy | 44.71 | 52 |
| 5.2.3 Skills matching with secondary education..... | 56.06 | 91 |
| 5.2.4 Skills matching with tertiary education | 74.30 | 45 |
| 6 GLOBAL KNOWLEDGE SKILLS | 12.35 | 99 |
| 6.1 High-Level Skills | 13.33 | 100 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 4.29 | 93 |
| 6.1.3 Professionals..... | 12.72 | 86 |
| 6.1.4 Researchers..... | 0.32 | 94 |
| 6.1.5 Senior officials and managers | 13.75 | 79 |
| 6.1.6 Availability of scientists and engineers | 35.59 | 71 |
| 6.2 Talent Impact..... | 11.36 | 97 |
| 6.2.1 Innovation output..... | n/a | n/a |
| 6.2.2 High-value exports..... | 9.23 | 68 |
| 6.2.3 New product entrepreneurial activity | 15.51 | 82 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 9.35 | 77 |

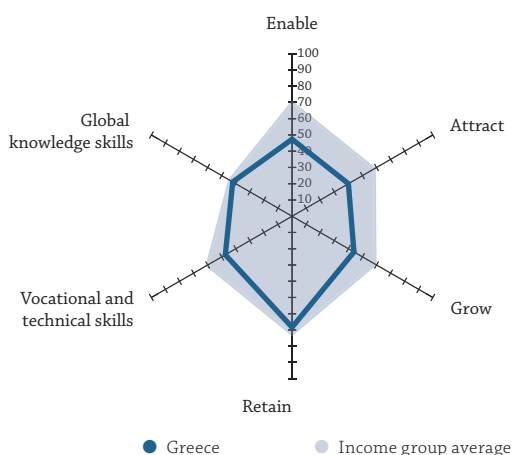
GREECE

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 42 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 10.82 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 26,680.10 |
| GDP (US\$ billions) | 195.21 |
| GTCI score | 48.21 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 47.37 | 75 |
| 1.1 Regulatory Landscape..... | 47.43 | 65 |
| 1.1.1 Government effectiveness | 48.59 | 53 |
| 1.1.2 Business-government relations | 35.98 | 104 |
| 1.1.3 Political stability | 58.25 | 75 |
| 1.1.4 Regulatory quality | 54.85 | 52 |
| 1.1.5 Corruption | 39.47 | 56 |
| 1.2 Market Landscape..... | 48.41 | 58 |
| 1.2.1 Competition intensity | 66.57 | 68 |
| 1.2.2 Ease of doing business | 65.81 | 56 |
| 1.2.3 Cluster development | 21.05 | 105 |
| 1.2.4 R&D expenditure | 19.39 | 39 |
| 1.2.5 ICT infrastructure | 76.67 | 29 |
| 1.2.6 Technology utilisation | 40.99 | 68 |
| 1.3 Business and Labour Landscape..... | 46.28 | 93 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 47.27 | 102 |
| 1.3.4 Labour-employer cooperation | 40.92 | 90 |
| Management Practice | | |
| 1.3.5 Professional management..... | 27.79 | 84 |
| 1.3.6 Relationship of pay to productivity..... | 36.03 | 78 |
| 2 ATTRACT..... | 40.00 | 74 |
| 2.1 External Openness | 29.84 | 80 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 36.55 | 95 |
| 2.1.2 Prevalence of foreign ownership | 50.37 | 79 |
| Attract People | | |
| 2.1.3 Migrant stock | 24.87 | 35 |
| 2.1.4 International students..... | 21.73 | 42 |
| 2.1.5 Brain gain | 15.66 | 112 |
| 2.2 Internal Openness | 50.17 | 59 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 57.47 | 41 |
| 2.2.2 Tolerance of immigrants..... | 54.93 | 62 |
| 2.2.3 Social mobility..... | 32.43 | 92 |
| Gender Equality | | |
| 2.2.4 Female graduates | 77.16 | 52 |
| 2.2.5 Gender earnings gap | 48.19 | 70 |
| 2.2.6 Leadership opportunities for women..... | 30.82 | 78 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 43.96 | 47 |
| 3.1 Formal Education..... | 53.92 | 18 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 27.71 | 43 |
| 3.1.2 Tertiary enrolment..... | 100.00 | 1 |
| 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 | 31.76 | 42 |
| 3.2 Lifelong Learning..... | 33.07 | 89 |
| 3.2.1 Quality of management schools..... | 39.95 | 72 |
| 3.2.2 Prevalence of training in firms | 21.90 | 75 |
| 3.2.3 Employee development..... | 37.37 | 64 |
| 3.3 Access to Growth Opportunities | 44.88 | 69 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 32.96 | 85 |
| 3.3.2 Personal rights..... | 63.34 | 54 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 57.27 | 89 |
| 3.3.4 Use of virtual professional networks..... | 25.53 | 41 |
| 3.3.5 Collaboration within organisations | 26.65 | 94 |
| 3.3.6 Collaboration across organisations | 63.55 | 82 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 68.29 | 29 |
| 4.1 Sustainability | 44.55 | 51 |
| 4.1.1 Pension system | 85.71 | 27 |
| 4.1.2 Social protection | 27.21 | 80 |
| 4.1.3 Brain retention | 20.73 | 106 |
| 4.2 Lifestyle | 92.02 | 2 |
| 4.2.1 Environmental performance..... | 90.91 | 21 |
| 4.2.2 Personal safety | 78.31 | 36 |
| 4.2.3 Physician density | 100.00 | 1 |
| 4.2.4 Sanitation | 98.86 | 26 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 47.44 | 49 |
| 5.1 Mid-Level Skills | 38.25 | 57 |
| 5.1.1 Workforce with secondary education | 37.27 | 35 |
| 5.1.2 Population with secondary education | 38.94 | 51 |
| 5.1.3 Technicians and associate professionals | 35.87 | 59 |
| 5.1.4 Labour productivity per employee..... | 40.90 | 36 |
| 5.2 Employability..... | 56.64 | 55 |
| 5.2.1 Ease of finding skilled employees | 62.38 | 35 |
| 5.2.2 Relevance of education system to the economy | 25.24 | 97 |
| 5.2.3 Skills matching with secondary education..... | 66.15 | 47 |
| 5.2.4 Skills matching with tertiary education | 72.80 | 51 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 42.18 | 31 |
| 6.1 High-Level Skills | 44.33 | 30 |
| 6.1.1 Workforce with tertiary education | 46.28 | 30 |
| 6.1.2 Population with tertiary education | 36.02 | 25 |
| 6.1.3 Professionals | 53.18 | 20 |
| 6.1.4 Researchers | 38.69 | 26 |
| 6.1.5 Senior officials and managers | 15.63 | 70 |
| 6.1.6 Availability of scientists and engineers | 76.18 | 10 |
| 6.2 Talent Impact..... | 40.02 | 32 |
| 6.2.1 Innovation output..... | 33.57 | 58 |
| 6.2.2 High-value exports..... | 20.72 | 40 |
| 6.2.3 New product entrepreneurial activity | 36.69 | 60 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 69.12 | 15 |

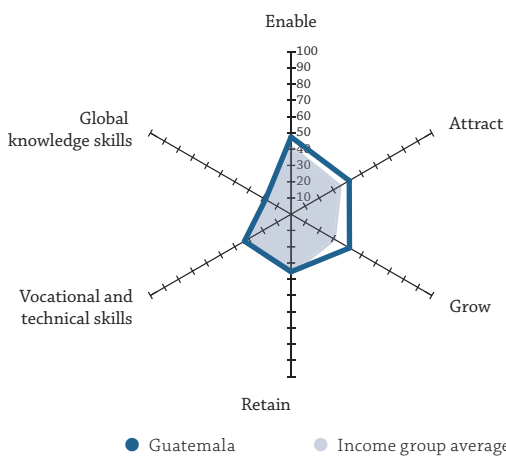
GUATEMALA

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 84 |
| Income group | Lower middle income |
| Regional group..... | Latin, Central America and Caribbean |
| Population (millions) | 16.34 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 7,706.74 |
| GDP (US\$ billions) | 63.79 |
| GTCI score..... | 36.18 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 47.56 | 73 |
| 1.1 Regulatory Landscape..... | 38.59 | 92 |
| 1.1.1 Government effectiveness | 23.91 | 105 |
| 1.1.2 Business-government relations | 62.25 | 44 |
| 1.1.3 Political stability | 48.06 | 93 |
| 1.1.4 Regulatory quality | 40.29 | 79 |
| 1.1.5 Corruption | 18.42 | 106 |
| 1.2 Market Landscape | 44.12 | 69 |
| 1.2.1 Competition intensity | 79.71 | 23 |
| 1.2.2 Ease of doing business | 55.11 | 76 |
| 1.2.3 Cluster development | 46.75 | 51 |
| 1.2.4 R&D expenditure | 0.70 | 100 |
| 1.2.5 ICT infrastructure | 23.06 | 97 |
| 1.2.6 Technology utilisation | 59.36 | 38 |
| 1.3 Business and Labour Landscape..... | 59.98 | 48 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 44.33 | 94 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 53.33 | 81 |
| 1.3.4 Labour-employer cooperation | 68.29 | 24 |
| Management Practice | | |
| 1.3.5 Professional management..... | 42.41 | 60 |
| 1.3.6 Relationship of pay to productivity..... | 51.52 | 54 |
| 2 ATTRACT..... | 41.31 | 67 |
| 2.1 External Openness | 38.83 | 53 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 54.31 | 52 |
| 2.1.2 Prevalence of foreign ownership | 60.99 | 53 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 0.88 | 104 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 39.16 | 65 |
| 2.2 Internal Openness | 43.79 | 83 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 24.14 | 95 |
| 2.2.2 Tolerance of immigrants..... | 42.25 | 85 |
| 2.2.3 Social mobility..... | 52.32 | 43 |
| Gender Equality | | |
| 2.2.4 Female graduates | 78.59 | 45 |
| 2.2.5 Gender earnings gap | 38.55 | 88 |
| 2.2.6 Leadership opportunities for women..... | 26.88 | 86 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 41.50 | 55 |
| 3.1 Formal Education..... | 16.69 | 90 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 43.09 | 26 |
| 3.1.2 Tertiary enrolment..... | 15.50 | 90 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 8.18 | 91 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 57.12 | 33 |
| 3.2.1 Quality of management schools..... | 53.17 | 43 |
| 3.2.2 Prevalence of training in firms..... | 63.98 | 21 |
| 3.2.3 Employee development..... | 54.21 | 37 |
| 3.3 Access to Growth Opportunities | 50.68 | 54 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 49.44 | 44 |
| 3.3.2 Personal rights..... | 51.20 | 70 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 73.33 | 52 |
| 3.3.4 Use of virtual professional networks..... | 9.34 | 73 |
| 3.3.5 Collaboration within organisations | 51.09 | 36 |
| 3.3.6 Collaboration across organisations | 69.67 | 58 |
| 4 RETAIN..... | 35.39 | 94 |
| 4.1 Sustainability | 31.00 | 77 |
| 4.1.1 Pension system | 18.37 | 78 |
| 4.1.2 Social protection | 22.02 | 90 |
| 4.1.3 Brain retention | 52.62 | 37 |
| 4.2 Lifestyle | 39.78 | 98 |
| 4.2.1 Environmental performance..... | 60.73 | 77 |
| 4.2.2 Personal safety | 25.29 | 113 |
| 4.2.3 Physician density | 14.10 | 84 |
| 4.2.4 Sanitation | 58.98 | 92 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 33.11 | 94 |
| 5.1 Mid-Level Skills | 14.49 | 98 |
| 5.1.1 Workforce with secondary education | 12.36 | 93 |
| 5.1.2 Population with secondary education | 23.11 | 78 |
| 5.1.3 Technicians and associate professionals | 12.11 | 92 |
| 5.1.4 Labour productivity per employee..... | 10.37 | 81 |
| 5.2 Employability..... | 51.73 | 71 |
| 5.2.1 Ease of finding skilled employees | 51.49 | 52 |
| 5.2.2 Relevance of education system to the economy | 14.66 | 110 |
| 5.2.3 Skills matching with secondary education..... | 64.13 | 57 |
| 5.2.4 Skills matching with tertiary education | 76.66 | 35 |
| 6 GLOBAL KNOWLEDGE SKILLS | 18.20 | 85 |
| 6.1 High-Level Skills | 12.90 | 101 |
| 6.1.1 Workforce with tertiary education | 5.75 | 100 |
| 6.1.2 Population with tertiary education | 12.86 | 78 |
| 6.1.3 Professionals..... | 13.58 | 82 |
| 6.1.4 Researchers..... | 0.18 | 99 |
| 6.1.5 Senior officials and managers | 5.00 | 97 |
| 6.1.6 Availability of scientists and engineers | 40.00 | 60 |
| 6.2 Talent Impact..... | 23.51 | 66 |
| 6.2.1 Innovation output..... | 19.33 | 89 |
| 6.2.2 High-value exports..... | 9.42 | 67 |
| 6.2.3 New product entrepreneurial activity | 85.23 | 4 |
| 6.2.4 New business density | 2.84 | 81 |
| 6.2.5 Scientific journal articles..... | 0.71 | 116 |

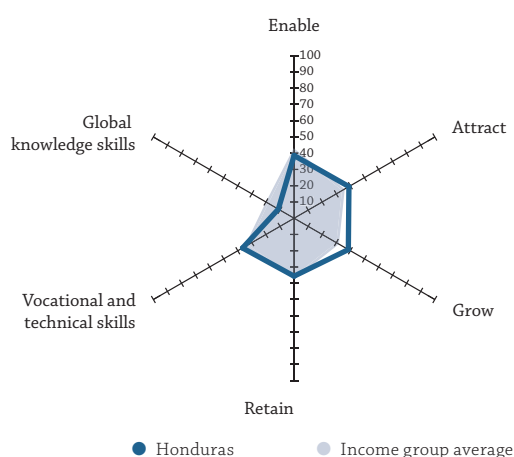
HONDURAS

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 92 |
| Income group | Lower middle income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 8.08 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 5,084.47 |
| GDP (US\$ billions) | 20.15 |
| GTCI score | 33.26 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 38.59 | 100 |
| 1.1 Regulatory Landscape..... | 36.05 | 99 |
| 1.1.1 Government effectiveness | 21.08 | 110 |
| 1.1.2 Business-government relations | 51.21 | 71 |
| 1.1.3 Political stability | 51.46 | 85 |
| 1.1.4 Regulatory quality | 35.44 | 93 |
| 1.1.5 Corruption | 21.05 | 95 |
| 1.2 Market Landscape | 43.67 | 71 |
| 1.2.1 Competition intensity | 63.43 | 73 |
| 1.2.2 Ease of doing business | 47.95 | 87 |
| 1.2.3 Cluster development | 43.34 | 64 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 21.56 | 99 |
| 1.2.6 Technology utilisation | 42.05 | 65 |
| 1.3 Business and Labour Landscape..... | 36.05 | 109 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 0.00 | 116 |
| 1.3.2 Ease of redundancy | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 46.03 | 106 |
| 1.3.4 Labour-employer cooperation | 60.16 | 36 |
| Management Practice | | |
| 1.3.5 Professional management..... | 26.65 | 87 |
| 1.3.6 Relationship of pay to productivity..... | 43.43 | 65 |
| 2 ATTRACT..... | 38.96 | 78 |
| 2.1 External Openness | 30.95 | 77 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 55.09 | 48 |
| 2.1.2 Prevalence of foreign ownership | 56.05 | 66 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.62 | 107 |
| 2.1.4 International students..... | 3.45 | 75 |
| 2.1.5 Brain gain | 39.56 | 62 |
| 2.2 Internal Openness | 46.97 | 76 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 41.38 | 65 |
| 2.2.2 Tolerance of immigrants..... | 29.58 | 103 |
| 2.2.3 Social mobility..... | 44.96 | 57 |
| Gender Equality | | |
| 2.2.4 Female graduates | 95.89 | 6 |
| 2.2.5 Gender earnings gap | 31.33 | 100 |
| 2.2.6 Leadership opportunities for women..... | 38.71 | 66 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 38.55 | 64 |
| 3.1 Formal Education..... | 26.23 | 68 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 65.91 | 6 |
| 3.1.2 Tertiary enrolment..... | 18.02 | 86 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 20.97 | 62 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 41.58 | 65 |
| 3.2.1 Quality of management schools..... | 33.86 | 85 |
| 3.2.2 Prevalence of training in firms..... | 42.74 | 42 |
| 3.2.3 Employee development..... | 48.15 | 46 |
| 3.3 Access to Growth Opportunities | 47.84 | 60 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 47.21 | 51 |
| 3.3.2 Personal rights..... | 62.72 | 57 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 68.48 | 66 |
| 3.3.4 Use of virtual professional networks..... | 7.94 | 80 |
| 3.3.5 Collaboration within organisations | 42.41 | 49 |
| 3.3.6 Collaboration across organisations | 58.27 | 98 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 35.64 | 93 |
| 4.1 Sustainability | 24.29 | 101 |
| 4.1.1 Pension system | 15.31 | 82 |
| 4.1.2 Social protection | 16.34 | 102 |
| 4.1.3 Brain retention | 41.23 | 62 |
| 4.2 Lifestyle | 46.99 | 90 |
| 4.2.1 Environmental performance..... | 60.73 | 77 |
| 4.2.2 Personal safety | 0.00 | 117 |
| 4.2.3 Physician density | n/a | n/a |
| 4.2.4 Sanitation | 80.23 | 76 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 36.61 | 86 |
| 5.1 Mid-Level Skills | 21.68 | 87 |
| 5.1.1 Workforce with secondary education | 20.33 | 77 |
| 5.1.2 Population with secondary education | 18.69 | 89 |
| 5.1.3 Technicians and associate professionals | 26.01 | 74 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 51.54 | 73 |
| 5.2.1 Ease of finding skilled employees | 47.19 | 59 |
| 5.2.2 Relevance of education system to the economy | 29.81 | 88 |
| 5.2.3 Skills matching with secondary education..... | 60.48 | 70 |
| 5.2.4 Skills matching with tertiary education | 68.69 | 72 |

| | | |
|--|--------------|------------|
| 6 GLOBAL KNOWLEDGE SKILLS | 11.19 | 101 |
| 6.1 High-Level Skills | 15.43 | 93 |
| 6.1.1 Workforce with tertiary education | 8.57 | 95 |
| 6.1.2 Population with tertiary education | 15.78 | 73 |
| 6.1.3 Professionals..... | 7.23 | 98 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 15.00 | 74 |
| 6.1.6 Availability of scientists and engineers | 30.59 | 85 |
| 6.2 Talent Impact..... | 6.95 | 112 |
| 6.2.1 Innovation output..... | 15.99 | 99 |
| 6.2.2 High-value exports..... | 4.52 | 88 |
| 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..... | 0.35 | 118 |

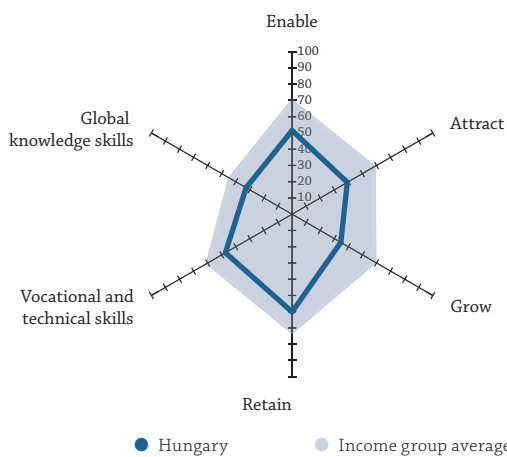
HUNGARY

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 52 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 9.84 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 25,581.50 |
| GDP (US\$ billions) | 120.69 |
| GTCI score..... | 44.25 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 51.49 | 56 |
| 1.1 Regulatory Landscape..... | 56.26 | 48 |
| 1.1.1 Government effectiveness | 54.76 | 43 |
| 1.1.2 Business-government relations | 36.42 | 102 |
| 1.1.3 Political stability | 81.55 | 28 |
| 1.1.4 Regulatory quality..... | 63.83 | 38 |
| 1.1.5 Corruption | 44.74 | 47 |
| 1.2 Market Landscape..... | 42.25 | 75 |
| 1.2.1 Competition intensity | 40.86 | 114 |
| 1.2.2 Ease of doing business | 74.01 | 38 |
| 1.2.3 Cluster development | 31.89 | 86 |
| 1.2.4 R&D expenditure | 31.78 | 25 |
| 1.2.5 ICT infrastructure..... | 71.08 | 41 |
| 1.2.6 Technology utilisation..... | 3.89 | 116 |
| 1.3 Business and Labour Landscape..... | 55.95 | 63 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 48.88 | 92 |
| 1.3.4 Labour-employer cooperation | 46.61 | 74 |
| Management Practice | | |
| 1.3.5 Professional management..... | 22.92 | 95 |
| 1.3.6 Relationship of pay to productivity..... | 28.28 | 97 |
| 2 ATTRACT..... | 39.25 | 77 |
| 2.1 External Openness | 35.12 | 63 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 50.39 | 62 |
| 2.1.2 Prevalence of foreign ownership | 57.53 | 58 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 9.91 | 56 |
| 2.1.4 International students..... | 36.68 | 26 |
| 2.1.5 Brain gain..... | 21.08 | 105 |
| 2.2 Internal Openness..... | 43.39 | 87 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 60.92 | 37 |
| 2.2.2 Tolerance of immigrants..... | 36.62 | 94 |
| 2.2.3 Social mobility..... | 16.08 | 114 |
| Gender Equality | | |
| 2.2.4 Female graduates | 89.89 | 20 |
| 2.2.5 Gender earnings gap..... | 51.81 | 55 |
| 2.2.6 Leadership opportunities for women..... | 5.02 | 114 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 34.62 | 80 |
| 3.1 Formal Education..... | 34.84 | 47 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 20.55 | 56 |
| 3.1.2 Tertiary enrolment..... | 44.27 | 51 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 20.72 | 63 |
| 3.1.4 Reading, maths, and science | 63.66 | 35 |
| 3.1.5 University ranking | 24.99 | 52 |
| 3.2 Lifelong Learning..... | 27.13 | 104 |
| 3.2.1 Quality of management schools..... | 41.80 | 65 |
| 3.2.2 Prevalence of training in firms..... | 16.36 | 84 |
| 3.2.3 Employee development..... | 23.23 | 100 |
| 3.3 Access to Growth Opportunities | 41.90 | 89 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 35.20 | 78 |
| 3.3.2 Personal rights..... | 64.55 | 52 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 42.73 | 111 |
| 3.3.4 Use of virtual professional networks..... | 16.79 | 59 |
| 3.3.5 Collaboration within organisations | 12.99 | 115 |
| 3.3.6 Collaboration across organisations | 79.16 | 26 |
| 4 RETAIN..... | 60.09 | 41 |
| 4.1 Sustainability | 41.36 | 59 |
| 4.1.1 Pension system | 91.84 | 12 |
| 4.1.2 Social protection | 16.08 | 103 |
| 4.1.3 Brain retention | 16.17 | 112 |
| 4.2 Lifestyle | 78.82 | 27 |
| 4.2.1 Environmental performance..... | 88.65 | 28 |
| 4.2.2 Personal safety | 76.01 | 39 |
| 4.2.3 Physician density | 52.88 | 24 |
| 4.2.4 Sanitation | 97.73 | 32 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 47.38 | 50 |
| 5.1 Mid-Level Skills | 55.07 | 19 |
| 5.1.1 Workforce with secondary education | 53.73 | 11 |
| 5.1.2 Population with secondary education | 66.05 | 19 |
| 5.1.3 Technicians and associate professionals | 64.57 | 20 |
| 5.1.4 Labour productivity per employee..... | 35.94 | 45 |
| 5.2 Employability..... | 39.68 | 108 |
| 5.2.1 Ease of finding skilled employees | 16.50 | 115 |
| 5.2.2 Relevance of education system to the economy | 22.84 | 101 |
| 5.2.3 Skills matching with secondary education..... | 56.00 | 92 |
| 5.2.4 Skills matching with tertiary education | 63.40 | 89 |
| 6 GLOBAL KNOWLEDGE SKILLS | 32.67 | 49 |
| 6.1 High-Level Skills | 31.65 | 51 |
| 6.1.1 Workforce with tertiary education | 35.89 | 46 |
| 6.1.2 Population with tertiary education | 20.93 | 64 |
| 6.1.3 Professionals..... | 41.04 | 42 |
| 6.1.4 Researchers..... | 31.01 | 32 |
| 6.1.5 Senior officials and managers | 27.50 | 49 |
| 6.1.6 Availability of scientists and engineers | 33.53 | 75 |
| 6.2 Talent Impact..... | 33.70 | 49 |
| 6.2.1 Innovation output..... | 46.05 | 36 |
| 6.2.2 High-value exports..... | 25.80 | 30 |
| 6.2.3 New product entrepreneurial activity | 29.03 | 67 |
| 6.2.4 New business density | 21.07 | 31 |
| 6.2.5 Scientific journal articles..... | 46.55 | 35 |

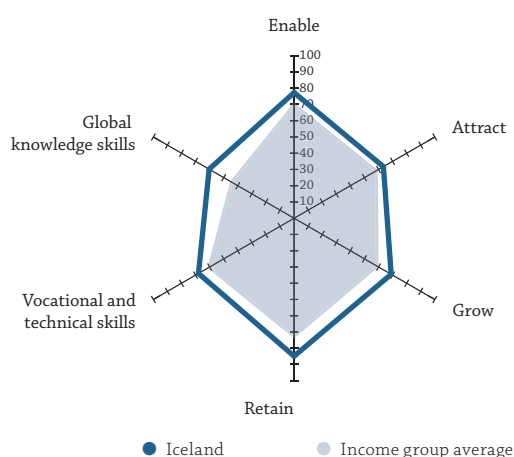
ICELAND

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 14 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 0.33 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 46,547.00 |
| GDP (US\$ billions) | 16.60 |
| GTCI score..... | 70.48 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 77.30 | 19 |
| 1.1 Regulatory Landscape..... | 78.24 | 18 |
| 1.1.1 Government effectiveness | 80.72 | 17 |
| 1.1.2 Business-government relations | 55.63 | 65 |
| 1.1.3 Political stability | 94.66 | 4 |
| 1.1.4 Regulatory quality | 75.97 | 21 |
| 1.1.5 Corruption | 84.21 | 14 |
| 1.2 Market Landscape..... | 73.38 | 19 |
| 1.2.1 Competition intensity | 60.29 | 79 |
| 1.2.2 Ease of doing business | 84.90 | 18 |
| 1.2.3 Cluster development | 54.49 | 40 |
| 1.2.4 R&D expenditure | 43.93 | 19 |
| 1.2.5 ICT infrastructure | 99.86 | 2 |
| 1.2.6 Technology utilisation | 96.82 | 3 |
| 1.3 Business and Labour Landscape..... | 80.27 | 14 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 89.74 | 4 |
| 1.3.4 Labour-employer cooperation | 82.11 | 12 |
| Management Practice | | |
| 1.3.5 Professional management..... | 77.65 | 20 |
| 1.3.6 Relationship of pay to productivity..... | 76.43 | 13 |
| 2 ATTRACT..... | 63.47 | 19 |
| 2.1 External Openness | 37.85 | 59 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 45.43 | 74 |
| 2.1.2 Prevalence of foreign ownership | 30.62 | 108 |
| Attract People | | |
| 2.1.3 Migrant stock | 24.98 | 34 |
| 2.1.4 International students..... | 34.01 | 28 |
| 2.1.5 Brain gain..... | 54.22 | 31 |
| 2.2 Internal Openness..... | 89.08 | 1 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 100.00 | 1 |
| 2.2.2 Tolerance of immigrants..... | 84.51 | 18 |
| 2.2.3 Social mobility..... | 91.01 | 8 |
| Gender Equality | | |
| 2.2.4 Female graduates | 94.85 | 9 |
| 2.2.5 Gender earnings gap | 66.27 | 19 |
| 2.2.6 Leadership opportunities for women..... | 97.85 | 3 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 68.98 | 15 |
| 3.1 Formal Education..... | 41.59 | 36 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 33.70 | 33 |
| 3.1.2 Tertiary enrolment..... | 71.16 | 14 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 36.32 | 21 |
| 3.1.4 Reading, maths, and science | 66.75 | 32 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 77.49 | 14 |
| 3.2.1 Quality of management schools..... | 76.19 | 19 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 78.79 | 17 |
| 3.3 Access to Growth Opportunities | 87.87 | 5 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 78.21 | 12 |
| 3.3.2 Personal rights..... | 88.17 | 16 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 100.00 | 1 |
| 3.3.4 Use of virtual professional networks..... | 92.67 | 2 |
| 3.3.5 Collaboration within organisations | 79.45 | 15 |
| 3.3.6 Collaboration across organisations | 88.72 | 14 |

| | | |
|--------------------------------------|--------------|----------|
| 4 RETAIN..... | 84.86 | 7 |
| 4.1 Sustainability | 80.81 | 12 |
| 4.1.1 Pension system | 86.73 | 23 |
| 4.1.2 Social protection | 81.90 | 16 |
| 4.1.3 Brain retention | 73.80 | 13 |
| 4.2 Lifestyle..... | 88.90 | 7 |
| 4.2.1 Environmental performance..... | 99.68 | 2 |
| 4.2.2 Personal safety | 96.88 | 6 |
| 4.2.3 Physician density | 60.42 | 15 |
| 4.2.4 Sanitation | 98.64 | 27 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 67.93 | 13 |
| 5.1 Mid-Level Skills | 49.69 | 29 |
| 5.1.1 Workforce with secondary education | 33.09 | 50 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 65.47 | 18 |
| 5.1.4 Labour productivity per employee..... | 50.51 | 25 |
| 5.2 Employability..... | 86.17 | 7 |
| 5.2.1 Ease of finding skilled employees | 92.08 | 3 |
| 5.2.2 Relevance of education system to the economy | 79.81 | 10 |
| 5.2.3 Skills matching with secondary education..... | 82.77 | 11 |
| 5.2.4 Skills matching with tertiary education | 90.01 | 6 |

| | | |
|--|--------------|----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 60.36 | 5 |
| 6.1 High-Level Skills | 65.12 | 5 |
| 6.1.1 Workforce with tertiary education | 49.89 | 23 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals..... | 70.81 | 6 |
| 6.1.4 Researchers..... | 71.46 | 8 |
| 6.1.5 Senior officials and managers | 63.13 | 11 |
| 6.1.6 Availability of scientists and engineers | 70.29 | 15 |
| 6.2 Talent Impact..... | 55.60 | 9 |
| 6.2.1 Innovation output..... | 74.69 | 10 |
| 6.2.2 High-value exports..... | 37.48 | 15 |
| 6.2.3 New product entrepreneurial activity | 51.62 | 31 |
| 6.2.4 New business density | 54.85 | 11 |
| 6.2.5 Scientific journal articles..... | 59.34 | 23 |

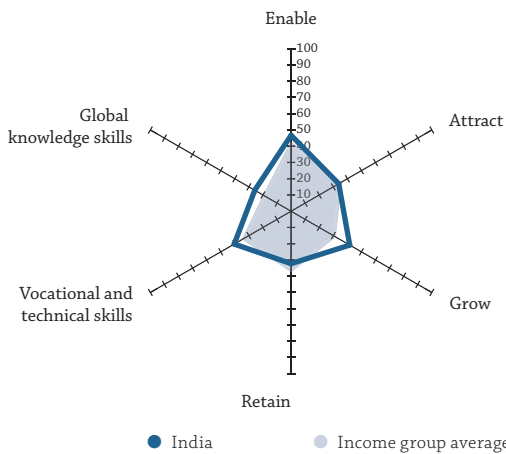
INDIA

Key Indicators

| | |
|----------------------------|----------------------------------|
| Rank (out of 119)..... | 81 |
| Income group..... | Lower middle income |
| Regional group..... | Central and Southern Asia |
| Population (millions)..... | 1,311.05 |

| | |
|--|-----------------|
| GDP per capita (PPP US\$)..... | 6,088.65 |
| GDP (US\$ billions)..... | 2,073.54 |
| GTCI score..... | 36.78 |
| GTCI score (income group average)..... | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 46.72 | 78 |
| 1.1 Regulatory Landscape..... | 40.67 | 87 |
| 1.1.1 Government effectiveness..... | 44.73 | 64 |
| 1.1.2 Business-government relations..... | 47.24 | 83 |
| 1.1.3 Political stability..... | 41.50 | 101 |
| 1.1.4 Regulatory quality..... | 35.68 | 90 |
| 1.1.5 Corruption..... | 34.21 | 64 |
| 1.2 Market Landscape..... | 39.98 | 86 |
| 1.2.1 Competition intensity..... | 57.71 | 87 |
| 1.2.2 Ease of doing business..... | 40.83 | 102 |
| 1.2.3 Cluster development..... | 67.80 | 25 |
| 1.2.4 R&D expenditure..... | 18.93 | 40 |
| 1.2.5 ICT infrastructure..... | 16.10 | 104 |
| 1.2.6 Technology utilisation..... | 38.52 | 75 |
| 1.3 Business and Labour Landscape..... | 59.51 | 51 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 66.67 | 51 |
| 1.3.2 Ease of redundancy..... | 60.00 | 81 |
| 1.3.3 Cluster labour market policies..... | 74.22 | 26 |
| 1.3.4 Labour-employer cooperation..... | 50.14 | 60 |
| Management Practice | | |
| 1.3.5 Professional management..... | 42.41 | 60 |
| 1.3.6 Relationship of pay to productivity..... | 63.64 | 30 |
| 2 ATTRACT..... | 33.84 | 98 |
| 2.1 External Openness..... | 34.97 | 64 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 54.57 | 51 |
| 2.1.2 Prevalence of foreign ownership..... | 56.79 | 61 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 0.73 | 106 |
| 2.1.4 International students..... | 0.52 | 93 |
| 2.1.5 Brain gain..... | 62.25 | 21 |
| 2.2 Internal Openness..... | 32.71 | 112 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 19.54 | 100 |
| 2.2.2 Tolerance of immigrants..... | 26.76 | 107 |
| 2.2.3 Social mobility..... | 55.86 | 34 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 57.10 | 80 |
| 2.2.5 Gender earnings gap..... | 7.23 | 113 |
| 2.2.6 Leadership opportunities for women..... | 29.75 | 80 |

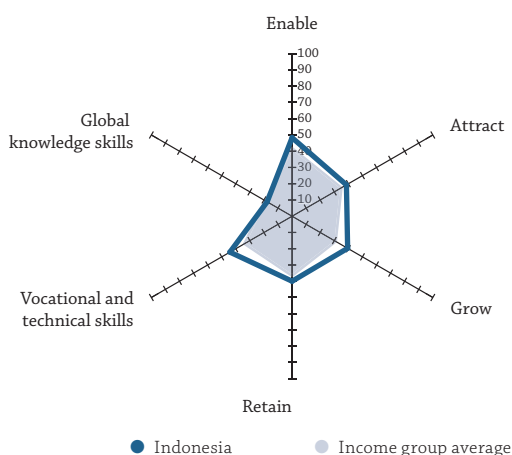
| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 41.66 | 54 |
| 3.1 Formal Education..... | 26.80 | 67 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 1.92 | 104 |
| 3.1.2 Tertiary enrolment..... | 21.88 | 84 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 25.83 | 50 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 57.59 | 19 |
| 3.2 Lifelong Learning..... | 53.49 | 37 |
| 3.2.1 Quality of management schools..... | 55.29 | 39 |
| 3.2.2 Prevalence of training in firms..... | 42.88 | 41 |
| 3.2.3 Employee development..... | 62.29 | 28 |
| 3.3 Access to Growth Opportunities..... | 44.68 | 73 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 47.77 | 48 |
| 3.3.2 Personal rights..... | 36.98 | 86 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 43.64 | 110 |
| 3.3.4 Use of virtual professional networks..... | 7.68 | 83 |
| 3.3.5 Collaboration within organisations..... | 49.78 | 38 |
| 3.3.6 Collaboration across organisations..... | 82.24 | 22 |
| 4 RETAIN..... | 32.24 | 99 |
| 4.1 Sustainability..... | 34.24 | 69 |
| 4.1.1 Pension system..... | 8.16 | 86 |
| 4.1.2 Social protection..... | 34.42 | 68 |
| 4.1.3 Brain retention..... | 60.14 | 31 |
| 4.2 Lifestyle..... | 30.24 | 107 |
| 4.2.1 Environmental performance..... | 30.76 | 105 |
| 4.2.2 Personal safety..... | 47.46 | 95 |
| 4.2.3 Physician density..... | 11.38 | 88 |
| 4.2.4 Sanitation..... | 31.36 | 107 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 40.41 | 71 |
| 5.1 Mid-Level Skills..... | 15.42 | 96 |
| 5.1.1 Workforce with secondary education..... | 15.46 | 87 |
| 5.1.2 Population with secondary education..... | 23.82 | 75 |
| 5.1.3 Technicians and associate professionals..... | 13.90 | 90 |
| 5.1.4 Labour productivity per employee..... | 8.51 | 84 |
| 5.2 Employability..... | 65.39 | 34 |
| 5.2.1 Ease of finding skilled employees..... | 58.75 | 42 |
| 5.2.2 Relevance of education system to the economy..... | 61.30 | 27 |
| 5.2.3 Skills matching with secondary education..... | 71.68 | 29 |
| 5.2.4 Skills matching with tertiary education..... | 69.85 | 66 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 25.81 | 63 |
| 6.1 High-Level Skills..... | 23.44 | 73 |
| 6.1.1 Workforce with tertiary education..... | 13.88 | 89 |
| 6.1.2 Population with tertiary education..... | 15.95 | 71 |
| 6.1.3 Professionals..... | 8.09 | 95 |
| 6.1.4 Researchers..... | 2.47 | 74 |
| 6.1.5 Senior officials and managers..... | 43.75 | 27 |
| 6.1.6 Availability of scientists and engineers..... | 56.47 | 35 |
| 6.2 Talent Impact..... | 28.18 | 53 |
| 6.2.1 Innovation output..... | 33.74 | 57 |
| 6.2.2 High-value exports..... | 14.12 | 50 |
| 6.2.3 New product entrepreneurial activity..... | 68.01 | 12 |
| 6.2.4 New business density..... | 0.52 | 89 |
| 6.2.5 Scientific journal articles..... | 24.48 | 53 |

INDONESIA

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 77 |
| Income group | Lower middle income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 257.56 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 48.31 | 70 |
| 1.1 Regulatory Landscape..... | 44.86 | 78 |
| 1.1.1 Government effectiveness | 36.50 | 81 |
| 1.1.2 Business-government relations | 68.21 | 33 |
| 1.1.3 Political stability | 49.27 | 92 |
| 1.1.4 Regulatory quality | 40.05 | 80 |
| 1.1.5 Corruption | 30.26 | 72 |
| 1.2 Market Landscape..... | 47.64 | 60 |
| 1.2.1 Competition intensity | 72.57 | 47 |
| 1.2.2 Ease of doing business | 52.48 | 78 |
| 1.2.3 Cluster development | 65.94 | 27 |
| 1.2.4 R&D expenditure | 1.64 | 95 |
| 1.2.5 ICT infrastructure | 32.06 | 92 |
| 1.2.6 Technology utilisation | 61.13 | 37 |
| 1.3 Business and Labour Landscape..... | 52.42 | 71 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 27.67 | 104 |
| 1.3.2 Ease of redundancy | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 70.78 | 29 |
| 1.3.4 Labour-employer cooperation | 57.99 | 40 |
| Management Practice | | |
| 1.3.5 Professional management..... | 52.44 | 37 |
| 1.3.6 Relationship of pay to productivity..... | 65.66 | 26 |
| 2 ATTRACT..... | 38.60 | 84 |
| 2.1 External Openness | 35.52 | 62 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 55.87 | 47 |
| 2.1.2 Prevalence of foreign ownership | 62.47 | 51 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.13 | 116 |
| 2.1.4 International students..... | 0.47 | 94 |
| 2.1.5 Brain gain..... | 58.63 | 26 |
| 2.2 Internal Openness..... | 41.68 | 92 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 31.03 | 81 |
| 2.2.2 Tolerance of immigrants..... | 16.90 | 114 |
| 2.2.3 Social mobility..... | 47.41 | 51 |
| Gender Equality | | |
| 2.2.4 Female graduates | 62.19 | 76 |
| 2.2.5 Gender earnings gap | 37.35 | 89 |
| 2.2.6 Leadership opportunities for women..... | 55.20 | 36 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 11,035.10 |
| GDP (US\$ billions) | 861.93 |
| GTCI score..... | 38.04 |
| GTCI score (income group average) | 32.92 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 39.47 | 61 |
| 3.1 Formal Education..... | 25.27 | 69 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 29.87 | 39 |
| 3.1.2 Tertiary enrolment..... | 26.80 | 76 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 10.49 | 85 |
| 3.1.4 Reading, maths, and science | 26.56 | 61 |
| 3.1.5 University ranking | 32.62 | 40 |
| 3.2 Lifelong Learning..... | 39.59 | 68 |
| 3.2.1 Quality of management schools..... | 53.17 | 43 |
| 3.2.2 Prevalence of training in firms | 5.67 | 89 |
| 3.2.3 Employee development..... | 59.93 | 32 |
| 3.3 Access to Growth Opportunities | 53.54 | 43 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 53.35 | 34 |
| 3.3.2 Personal rights..... | 46.71 | 78 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 78.18 | 38 |
| 3.3.4 Use of virtual professional networks..... | 4.02 | 94 |
| 3.3.5 Collaboration within organisations | 56.16 | 27 |
| 3.3.6 Collaboration across organisations | 82.81 | 21 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 39.98 | 88 |
| 4.1 Sustainability | 36.53 | 67 |
| 4.1.1 Pension system | 5.10 | 93 |
| 4.1.2 Social protection | 47.76 | 38 |
| 4.1.3 Brain retention | 56.72 | 33 |
| 4.2 Lifestyle | 43.44 | 95 |
| 4.2.1 Environmental performance..... | 53.66 | 88 |
| 4.2.2 Personal safety | 61.75 | 68 |
| 4.2.3 Physician density | 2.88 | 98 |
| 4.2.4 Sanitation | 55.45 | 96 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 44.16 | 58 |
| 5.1 Mid-Level Skills | 20.68 | 88 |
| 5.1.1 Workforce with secondary education | 24.79 | 69 |
| 5.1.2 Population with secondary education | 32.67 | 61 |
| 5.1.3 Technicians and associate professionals | 11.21 | 94 |
| 5.1.4 Labour productivity per employee..... | 14.07 | 75 |
| 5.2 Employability..... | 67.64 | 29 |
| 5.2.1 Ease of finding skilled employees | 60.40 | 39 |
| 5.2.2 Relevance of education system to the economy | 56.73 | 35 |
| 5.2.3 Skills matching with secondary education..... | 74.71 | 24 |
| 5.2.4 Skills matching with tertiary education | 78.73 | 31 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 17.73 | 89 |
| 6.1 High-Level Skills | 17.94 | 86 |
| 6.1.1 Workforce with tertiary education | 14.62 | 88 |
| 6.1.2 Population with tertiary education | 14.07 | 76 |
| 6.1.3 Professionals..... | 13.01 | 84 |
| 6.1.4 Researchers..... | 0.94 | 86 |
| 6.1.5 Senior officials and managers | 10.00 | 89 |
| 6.1.6 Availability of scientists and engineers | 55.00 | 37 |
| 6.2 Talent Impact..... | 17.53 | 81 |
| 6.2.1 Innovation output..... | 27.42 | 71 |
| 6.2.2 High-value exports..... | 12.43 | 57 |
| 6.2.3 New product entrepreneurial activity | 44.74 | 46 |
| 6.2.4 New business density | 1.51 | 86 |
| 6.2.5 Scientific journal articles..... | 1.57 | 113 |

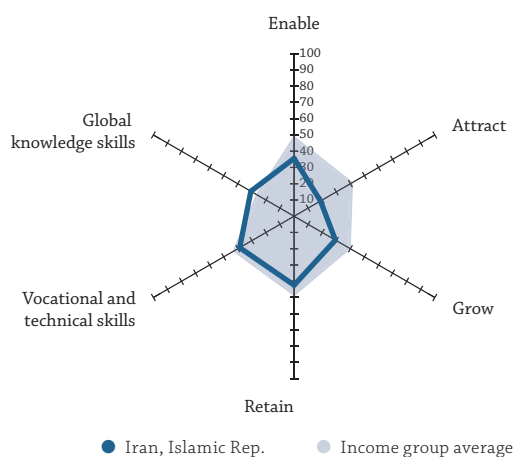
IRAN, ISLAMIC REP.

Key Indicators

| | |
|----------------------------|----------------------------------|
| Rank (out of 119)..... | 94 |
| Income group..... | Upper middle income |
| Regional group..... | Central and Southern Asia |
| Population (millions)..... | 79.11 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 17,365.80 |
| GDP (US\$ billions)..... | 425.33 |
| GTCI score..... | 32.57 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 35.57 | 107 |
| 1.1 Regulatory Landscape..... | 29.45 | 109 |
| 1.1.1 Government effectiveness..... | 37.02 | 80 |
| 1.1.2 Business-government relations..... | 34.66 | 107 |
| 1.1.3 Political stability..... | 41.75 | 100 |
| 1.1.4 Regulatory quality..... | 14.08 | 117 |
| 1.1.5 Corruption..... | 19.74 | 101 |
| 1.2 Market Landscape..... | 32.98 | 103 |
| 1.2.1 Competition intensity..... | 43.14 | 111 |
| 1.2.2 Ease of doing business..... | 44.54 | 97 |
| 1.2.3 Cluster development..... | 39.32 | 75 |
| 1.2.4 R&D expenditure..... | 7.48 | 71 |
| 1.2.5 ICT infrastructure..... | 47.48 | 73 |
| 1.2.6 Technology utilisation..... | 15.90 | 108 |
| 1.3 Business and Labour Landscape..... | 44.29 | 98 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 89.00 | 25 |
| 1.3.2 Ease of redundancy..... | 50.00 | 98 |
| 1.3.3 Active labour market policies..... | 57.08 | 69 |
| 1.3.4 Labour-employer cooperation..... | 31.44 | 107 |
| Management Practice | | |
| 1.3.5 Professional management..... | 12.32 | 112 |
| 1.3.6 Relationship of pay to productivity..... | 25.93 | 101 |
| 2 ATTRACT..... | 18.76 | 118 |
| 2.1 External Openness..... | 15.50 | 115 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 43.86 | 76 |
| 2.1.2 Prevalence of foreign ownership..... | 5.93 | 118 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 7.46 | 66 |
| 2.1.4 International students..... | 1.36 | 87 |
| 2.1.5 Brain gain..... | 18.88 | 108 |
| 2.2 Internal Openness..... | 22.02 | 117 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 17.24 | 105 |
| 2.2.2 Tolerance of immigrants..... | 39.44 | 91 |
| 2.2.3 Social mobility..... | 27.25 | 104 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 40.65 | 91 |
| 2.2.5 Gender earnings gap..... | 0.00 | 117 |
| 2.2.6 Leadership opportunities for women..... | 7.53 | 110 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 29.36 | 95 |
| 3.1 Formal Education..... | 33.72 | 52 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 23.40 | 52 |
| 3.1.2 Tertiary enrolment..... | 62.86 | 23 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 19.69 | 67 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 28.91 | 47 |
| 3.2 Lifelong Learning..... | 28.33 | 103 |
| 3.2.1 Quality of management schools..... | 35.45 | 81 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 21.21 | 106 |
| 3.3 Access to Growth Opportunities..... | 26.03 | 113 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 16.20 | 115 |
| 3.3.2 Personal rights..... | 1.25 | 118 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 37.88 | 112 |
| 3.3.4 Use of virtual professional networks..... | n/a | n/a |
| 3.3.5 Collaboration within organisations..... | 19.85 | 107 |
| 3.3.6 Collaboration across organisations..... | 54.99 | 108 |
| 4 RETAIN..... | 42.38 | 79 |
| 4.1 Sustainability..... | 30.15 | 82 |
| 4.1.1 Pension system..... | 32.65 | 61 |
| 4.1.2 Social protection..... | 36.39 | 60 |
| 4.1.3 Brain retention..... | 21.41 | 103 |
| 4.2 Lifestyle..... | 54.60 | 75 |
| 4.2.1 Environmental performance..... | 54.54 | 87 |
| 4.2.2 Personal safety..... | 51.67 | 88 |
| 4.2.3 Physician density..... | 23.56 | 70 |
| 4.2.4 Sanitation..... | 88.64 | 64 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 38.65 | 78 |
| 5.1 Mid-Level Skills..... | 31.63 | 69 |
| 5.1.1 Workforce with secondary education..... | n/a | n/a |
| 5.1.2 Population with secondary education..... | 35.81 | 55 |
| 5.1.3 Technicians and associate professionals..... | 21.97 | 82 |
| 5.1.4 Labour productivity per employee..... | 37.11 | 41 |
| 5.2 Employability..... | 45.66 | 89 |
| 5.2.1 Ease of finding skilled employees..... | 36.63 | 80 |
| 5.2.2 Relevance of education system to the economy..... | 30.53 | 86 |
| 5.2.3 Skills matching with secondary education..... | 56.17 | 90 |
| 5.2.4 Skills matching with tertiary education..... | 59.31 | 106 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 30.72 | 55 |
| 6.1 High-Level Skills..... | 25.59 | 69 |
| 6.1.1 Workforce with tertiary education..... | n/a | n/a |
| 6.1.2 Population with tertiary education..... | 30.02 | 44 |
| 6.1.3 Professionals..... | 23.70 | 67 |
| 6.1.4 Researchers..... | 8.24 | 56 |
| 6.1.5 Senior officials and managers..... | 16.88 | 69 |
| 6.1.6 Availability of scientists and engineers..... | 49.12 | 42 |
| 6.2 Talent Impact..... | 35.84 | 46 |
| 6.2.1 Innovation output..... | 34.45 | 55 |
| 6.2.2 High-value exports..... | n/a | n/a |
| 6.2.3 New product entrepreneurial activity..... | 26.79 | 71 |
| 6.2.4 New business density..... | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 46.30 | 36 |

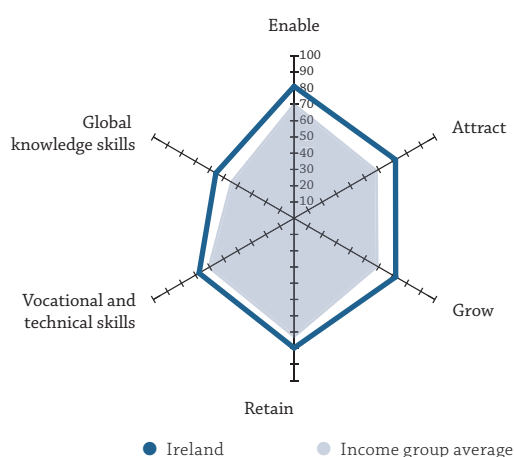
IRELAND

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 13 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 4.64 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 54,654.40 |
| GDP (US\$ billions) | 238.02 |
| GTCI score | 71.38 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 81.15 | 13 |
| 1.1 Regulatory Landscape..... | 84.85 | 11 |
| 1.1.1 Government effectiveness | 81.75 | 15 |
| 1.1.2 Business-government relations | 89.40 | 8 |
| 1.1.3 Political stability | 86.41 | 20 |
| 1.1.4 Regulatory quality | 89.08 | 5 |
| 1.1.5 Corruption | 77.63 | 18 |
| 1.2 Market Landscape..... | 72.52 | 21 |
| 1.2.1 Competition intensity | 70.29 | 60 |
| 1.2.2 Ease of doing business | 86.06 | 16 |
| 1.2.3 Cluster development | 81.11 | 15 |
| 1.2.4 R&D expenditure | 35.28 | 23 |
| 1.2.5 ICT infrastructure | 87.45 | 19 |
| 1.2.6 Technology utilisation | 74.91 | 22 |
| 1.3 Business and Labour Landscape..... | 86.09 | 9 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 77.75 | 20 |
| 1.3.4 Labour-employer cooperation | 75.07 | 17 |
| Management Practice | | |
| 1.3.5 Professional management..... | 96.85 | 6 |
| 1.3.6 Relationship of pay to productivity..... | 87.88 | 6 |
| 2 ATTRACT..... | 72.06 | 9 |
| 2.1 External Openness | 71.16 | 10 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 100.00 | 1 |
| 2.1.2 Prevalence of foreign ownership | 99.26 | 2 |
| Attract People | | |
| 2.1.3 Migrant stock | 34.97 | 20 |
| 2.1.4 International students..... | 36.42 | 27 |
| 2.1.5 Brain gain | 85.14 | 7 |
| 2.2 Internal Openness | 72.96 | 12 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 93.10 | 4 |
| 2.2.2 Tolerance of immigrants..... | 94.37 | 4 |
| 2.2.3 Social mobility..... | 75.48 | 20 |
| Gender Equality | | |
| 2.2.4 Female graduates | 62.59 | 75 |
| 2.2.5 Gender earnings gap | 50.60 | 62 |
| 2.2.6 Leadership opportunities for women..... | 61.65 | 31 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 72.19 | 12 |
| 3.1 Formal Education..... | 52.58 | 22 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 25.99 | 47 |
| 3.1.2 Tertiary enrolment..... | 67.95 | 18 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 27.11 | 44 |
| 3.1.4 Reading, maths, and science | 79.97 | 9 |
| 3.1.5 University ranking | 61.86 | 16 |
| 3.2 Lifelong Learning..... | 80.36 | 12 |
| 3.2.1 Quality of management schools..... | 79.63 | 12 |
| 3.2.2 Prevalence of training in firms..... | 92.08 | 2 |
| 3.2.3 Employee development..... | 69.36 | 22 |
| 3.3 Access to Growth Opportunities | 83.65 | 9 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 81.56 | 8 |
| 3.3.2 Personal rights..... | 88.17 | 16 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 92.12 | 10 |
| 3.3.4 Use of virtual professional networks..... | 80.78 | 6 |
| 3.3.5 Collaboration within organisations | 73.13 | 19 |
| 3.3.6 Collaboration across organisations | 86.12 | 18 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 79.82 | 15 |
| 4.1 Sustainability | 80.40 | 14 |
| 4.1.1 Pension system | 88.78 | 21 |
| 4.1.2 Social protection | 82.71 | 13 |
| 4.1.3 Brain retention | 69.70 | 17 |
| 4.2 Lifestyle | 79.24 | 24 |
| 4.2.1 Environmental performance..... | 92.39 | 19 |
| 4.2.2 Personal safety | 90.99 | 16 |
| 4.2.3 Physician density | 44.39 | 40 |
| 4.2.4 Sanitation | 89.20 | 63 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 67.50 | 14 |
| 5.1 Mid-Level Skills | 49.63 | 30 |
| 5.1.1 Workforce with secondary education | 32.35 | 55 |
| 5.1.2 Population with secondary education | 38.66 | 52 |
| 5.1.3 Technicians and associate professionals | 49.78 | 40 |
| 5.1.4 Labour productivity per employee..... | 77.72 | 8 |
| 5.2 Employability..... | 85.36 | 8 |
| 5.2.1 Ease of finding skilled employees | 91.42 | 4 |
| 5.2.2 Relevance of education system to the economy | 83.41 | 6 |
| 5.2.3 Skills matching with secondary education..... | 77.00 | 21 |
| 5.2.4 Skills matching with tertiary education | 89.63 | 8 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 55.55 | 12 |
| 6.1 High-Level Skills | 56.16 | 13 |
| 6.1.1 Workforce with tertiary education | 62.08 | 9 |
| 6.1.2 Population with tertiary education | 35.85 | 27 |
| 6.1.3 Professionals | 58.96 | 16 |
| 6.1.4 Researchers | 55.35 | 13 |
| 6.1.5 Senior officials and managers | 50.63 | 20 |
| 6.1.6 Availability of scientists and engineers | 74.12 | 12 |
| 6.2 Talent Impact..... | 54.94 | 11 |
| 6.2.1 Innovation output..... | 78.21 | 8 |
| 6.2.2 High-value exports..... | 50.47 | 7 |
| 6.2.3 New product entrepreneurial activity | 57.00 | 23 |
| 6.2.4 New business density | 33.37 | 19 |
| 6.2.5 Scientific journal articles..... | 55.67 | 25 |

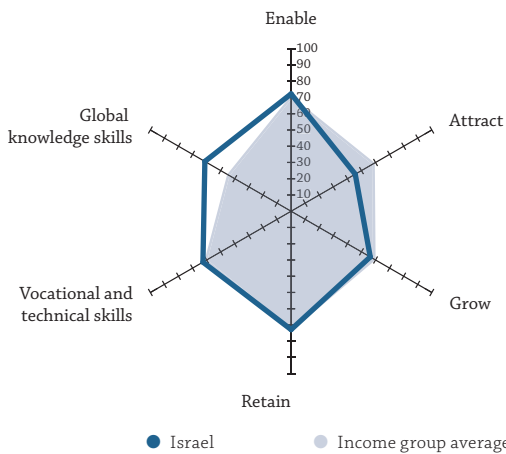
ISRAEL

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 24 |
| Income group | High income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 8.38 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 35,431.60 |
| GDP (US\$ billions) | 296.08 |
| GTCI score | 61.79 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 72.19 | 24 |
| 1.1 Regulatory Landscape..... | 62.25 | 38 |
| 1.1.1 Government effectiveness | 77.63 | 22 |
| 1.1.2 Business-government relations | 55.19 | 66 |
| 1.1.3 Political stability | 36.65 | 109 |
| 1.1.4 Regulatory quality | 75.97 | 21 |
| 1.1.5 Corruption | 65.79 | 26 |
| 1.2 Market Landscape..... | 76.85 | 14 |
| 1.2.1 Competition intensity | 70.29 | 60 |
| 1.2.2 Ease of doing business | 71.36 | 49 |
| 1.2.3 Cluster development | 58.82 | 32 |
| 1.2.4 R&D expenditure | 95.79 | 2 |
| 1.2.5 ICT infrastructure | 80.35 | 26 |
| 1.2.6 Technology utilisation | 84.45 | 15 |
| 1.3 Business and Labour Landscape..... | 77.47 | 17 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 69.06 | 34 |
| 1.3.4 Labour-employer cooperation | 67.21 | 29 |
| Management Practice | | |
| 1.3.5 Professional management..... | 73.93 | 24 |
| 1.3.6 Relationship of pay to productivity..... | 65.66 | 26 |
| 2 ATTRACT..... | 45.58 | 50 |
| 2.1 External Openness | 53.82 | 23 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 77.55 | 6 |
| 2.1.2 Prevalence of foreign ownership | 70.86 | 38 |
| Attract People | | |
| 2.1.3 Migrant stock | 54.90 | 13 |
| 2.1.4 International students..... | 14.37 | 56 |
| 2.1.5 Brain gain..... | 51.41 | 35 |
| 2.2 Internal Openness..... | 37.33 | 105 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 3.45 | 118 |
| 2.2.2 Tolerance of immigrants..... | 30.99 | 101 |
| 2.2.3 Social mobility..... | 55.04 | 36 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 50.60 | 62 |
| 2.2.6 Leadership opportunities for women..... | 46.59 | 52 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 56.25 | 26 |
| 3.1 Formal Education..... | 46.04 | 34 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 31.87 | 36 |
| 3.1.2 Tertiary enrolment..... | 57.82 | 32 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 21.48 | 61 |
| 3.1.4 Reading, maths, and science | 62.42 | 36 |
| 3.1.5 University ranking | 56.61 | 21 |
| 3.2 Lifelong Learning..... | 53.05 | 39 |
| 3.2.1 Quality of management schools..... | 75.13 | 21 |
| 3.2.2 Prevalence of training in firms..... | 20.05 | 76 |
| 3.2.3 Employee development..... | 63.97 | 26 |
| 3.3 Access to Growth Opportunities | 69.65 | 18 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 68.99 | 21 |
| 3.3.2 Personal rights..... | 35.21 | 90 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 95.15 | 8 |
| 3.3.4 Use of virtual professional networks..... | 47.02 | 19 |
| 3.3.5 Collaboration within organisations | 80.42 | 12 |
| 3.3.6 Collaboration across organisations | 91.08 | 11 |
| 4 RETAIN..... | 72.82 | 24 |
| 4.1 Sustainability | 70.14 | 21 |
| 4.1.1 Pension system | 88.88 | 20 |
| 4.1.2 Social protection | 56.84 | 31 |
| 4.1.3 Brain retention | 64.69 | 24 |
| 4.2 Lifestyle..... | 75.51 | 38 |
| 4.2.1 Environmental performance..... | 76.60 | 47 |
| 4.2.2 Personal safety | 67.74 | 57 |
| 4.2.3 Physician density | 57.69 | 19 |
| 4.2.4 Sanitation | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 62.62 | 23 |
| 5.1 Mid-Level Skills | 46.58 | 33 |
| 5.1.1 Workforce with secondary education | 36.97 | 36 |
| 5.1.2 Population with secondary education | 48.79 | 35 |
| 5.1.3 Technicians and associate professionals | 57.85 | 29 |
| 5.1.4 Labour productivity per employee..... | 42.71 | 31 |
| 5.2 Employability..... | 78.67 | 18 |
| 5.2.1 Ease of finding skilled employees | 86.80 | 6 |
| 5.2.2 Relevance of education system to the economy | 64.66 | 21 |
| 5.2.3 Skills matching with secondary education..... | 78.75 | 17 |
| 5.2.4 Skills matching with tertiary education | 84.46 | 20 |
| 6 GLOBAL KNOWLEDGE SKILLS | 61.27 | 4 |
| 6.1 High-Level Skills | 72.27 | 3 |
| 6.1.1 Workforce with tertiary education | 65.08 | 7 |
| 6.1.2 Population with tertiary education | 57.80 | 6 |
| 6.1.3 Professionals..... | 69.65 | 9 |
| 6.1.4 Researchers..... | 100.00 | 1 |
| 6.1.5 Senior officials and managers | 63.13 | 11 |
| 6.1.6 Availability of scientists and engineers | 77.94 | 8 |
| 6.2 Talent Impact..... | 50.26 | 17 |
| 6.2.1 Innovation output..... | 66.61 | 14 |
| 6.2.2 High-value exports..... | 37.10 | 17 |
| 6.2.3 New product entrepreneurial activity | 54.86 | 26 |
| 6.2.4 New business density | 17.88 | 34 |
| 6.2.5 Scientific journal articles..... | 74.87 | 13 |

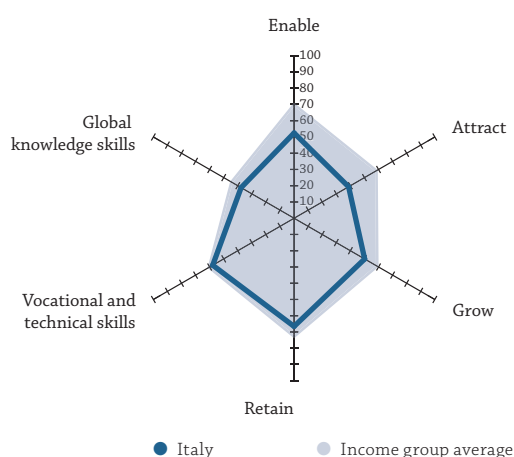
ITALY

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 36 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 60.80 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 35,896.50 |
| GDP (US\$ billions) | 1,814.76 |
| GTCI score | 50.55 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 52.44 | 52 |
| 1.1 Regulatory Landscape..... | 50.44 | 56 |
| 1.1.1 Government effectiveness | 53.73 | 44 |
| 1.1.2 Business-government relations | 20.09 | 117 |
| 1.1.3 Political stability | 72.09 | 46 |
| 1.1.4 Regulatory quality | 62.86 | 40 |
| 1.1.5 Corruption | 43.42 | 50 |
| 1.2 Market Landscape..... | 65.26 | 28 |
| 1.2.1 Competition intensity | 73.71 | 40 |
| 1.2.2 Ease of doing business | 72.48 | 47 |
| 1.2.3 Cluster development | 93.50 | 4 |
| 1.2.4 R&D expenditure | 29.91 | 26 |
| 1.2.5 ICT infrastructure | 76.40 | 30 |
| 1.2.6 Technology utilisation | 45.58 | 59 |
| 1.3 Business and Labour Landscape..... | 41.61 | 103 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 72.33 | 48 |
| 1.3.2 Ease of redundancy | 50.00 | 98 |
| 1.3.3 Active labour market policies..... | 49.36 | 91 |
| 1.3.4 Labour-employer cooperation | 36.59 | 95 |
| Management Practice | | |
| 1.3.5 Professional management..... | 25.21 | 89 |
| 1.3.6 Relationship of pay to productivity..... | 16.16 | 113 |
| 2 ATTRACT..... | 38.73 | 83 |
| 2.1 External Openness | 29.68 | 81 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 35.77 | 96 |
| 2.1.2 Prevalence of foreign ownership | 40.00 | 98 |
| Attract People | | |
| 2.1.3 Migrant stock | 21.20 | 39 |
| 2.1.4 International students..... | 24.50 | 35 |
| 2.1.5 Brain gain..... | 26.91 | 88 |
| 2.2 Internal Openness..... | 47.78 | 71 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 58.62 | 40 |
| 2.2.2 Tolerance of immigrants..... | 67.61 | 43 |
| 2.2.3 Social mobility..... | 33.24 | 90 |
| Gender Equality | | |
| 2.2.4 Female graduates | 82.20 | 36 |
| 2.2.5 Gender earnings gap | 42.17 | 81 |
| 2.2.6 Leadership opportunities for women..... | 2.87 | 117 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 50.14 | 36 |
| 3.1 Formal Education..... | 50.12 | 24 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 55.04 | 13 |
| 3.1.2 Tertiary enrolment..... | 55.10 | 38 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 18.41 | 70 |
| 3.1.4 Reading, maths, and science | 68.67 | 30 |
| 3.1.5 University ranking | 53.38 | 23 |
| 3.2 Lifelong Learning..... | 46.30 | 55 |
| 3.2.1 Quality of management schools..... | 70.37 | 26 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 22.22 | 102 |
| 3.3 Access to Growth Opportunities | 54.01 | 40 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 23.74 | 104 |
| 3.3.2 Personal rights..... | 89.15 | 14 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 77.27 | 44 |
| 3.3.4 Use of virtual professional networks..... | 43.09 | 23 |
| 3.3.5 Collaboration within organisations | 25.19 | 98 |
| 3.3.6 Collaboration across organisations | 65.60 | 76 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 66.55 | 32 |
| 4.1 Sustainability | 54.21 | 36 |
| 4.1.1 Pension system | 89.80 | 18 |
| 4.1.2 Social protection | 46.17 | 41 |
| 4.1.3 Brain retention | 26.65 | 93 |
| 4.2 Lifestyle | 78.90 | 26 |
| 4.2.1 Environmental performance..... | 88.43 | 29 |
| 4.2.2 Personal safety | 64.75 | 63 |
| 4.2.3 Physician density | 62.98 | 11 |
| 4.2.4 Sanitation | 99.43 | 17 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 57.82 | 28 |
| 5.1 Mid-Level Skills | 54.77 | 21 |
| 5.1.1 Workforce with secondary education | 40.66 | 27 |
| 5.1.2 Population with secondary education | 48.64 | 37 |
| 5.1.3 Technicians and associate professionals | 77.58 | 10 |
| 5.1.4 Labour productivity per employee..... | 52.21 | 21 |
| 5.2 Employability..... | 60.86 | 46 |
| 5.2.1 Ease of finding skilled employees | 62.05 | 37 |
| 5.2.2 Relevance of education system to the economy | 43.27 | 54 |
| 5.2.3 Skills matching with secondary education..... | 65.67 | 50 |
| 5.2.4 Skills matching with tertiary education | 72.46 | 52 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 37.65 | 37 |
| 6.1 High-Level Skills | 33.06 | 47 |
| 6.1.1 Workforce with tertiary education | 28.56 | 65 |
| 6.1.2 Population with tertiary education | 23.67 | 56 |
| 6.1.3 Professionals..... | 39.60 | 44 |
| 6.1.4 Researchers..... | 24.33 | 36 |
| 6.1.5 Senior officials and managers | 22.50 | 61 |
| 6.1.6 Availability of scientists and engineers | 59.71 | 28 |
| 6.2 Talent Impact..... | 42.24 | 28 |
| 6.2.1 Innovation output..... | 53.78 | 28 |
| 6.2.2 High-value exports..... | 13.56 | 53 |
| 6.2.3 New product entrepreneurial activity | 75.21 | 7 |
| 6.2.4 New business density | 13.29 | 42 |
| 6.2.5 Scientific journal articles..... | 55.38 | 27 |

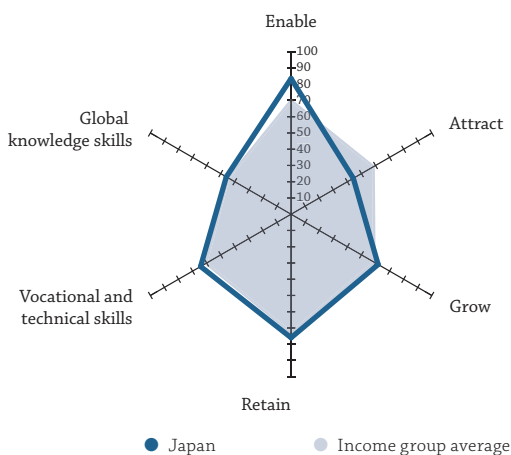
JAPAN

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 20 |
| Income group | High income |
| Regional group..... | East, Southeastern Asia and Oceania |
| Population (millions) | 126.96 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 37,321.60 |
| GDP (US\$ billions) | 4,123.26 |
| GTCI score..... | 62.63 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE | 83.47 | 7 |
| 1.1 Regulatory Landscape..... | 81.16 | 15 |
| 1.1.1 Government effectiveness | 88.17 | 9 |
| 1.1.2 Business-government relations..... | 79.91 | 15 |
| 1.1.3 Political stability..... | 87.62 | 14 |
| 1.1.4 Regulatory quality..... | 73.79 | 23 |
| 1.1.5 Corruption..... | 76.32 | 19 |
| 1.2 Market Landscape..... | 87.61 | 2 |
| 1.2.1 Competition intensity..... | 100.00 | 1 |
| 1.2.2 Ease of doing business..... | 78.60 | 32 |
| 1.2.3 Cluster development..... | 89.47 | 7 |
| 1.2.4 R&D expenditure..... | 83.41 | 3 |
| 1.2.5 ICT infrastructure..... | 93.59 | 9 |
| 1.2.6 Technology utilisation..... | 80.57 | 17 |
| 1.3 Business and Labour Landscape..... | 81.64 | 13 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 89.00 | 25 |
| 1.3.2 Ease of redundancy..... | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 72.39 | 27 |
| 1.3.4 Labour-employer cooperation..... | 87.26 | 7 |
| Management Practice | | |
| 1.3.5 Professional management..... | 82.81 | 16 |
| 1.3.6 Relationship of pay to productivity..... | 68.35 | 22 |
| 2 ATTRACT | 44.22 | 54 |
| 2.1 External Openness..... | 40.06 | 49 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 62.40 | 31 |
| 2.1.2 Prevalence of foreign ownership..... | 78.52 | 20 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 3.40 | 84 |
| 2.1.4 International students..... | 17.82 | 50 |
| 2.1.5 Brain gain..... | 38.15 | 67 |
| 2.2 Internal Openness..... | 48.39 | 68 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 66.67 | 26 |
| 2.2.2 Tolerance of immigrants..... | 38.03 | 93 |
| 2.2.3 Social mobility..... | 71.93 | 24 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 53.73 | 83 |
| 2.2.5 Gender earnings gap..... | 40.96 | 83 |
| 2.2.6 Leadership opportunities for women..... | 19.00 | 99 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW | 61.83 | 20 |
| 3.1 Formal Education..... | 52.93 | 21 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 18.58 | 58 |
| 3.1.2 Tertiary enrolment..... | 55.33 | 36 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 17.65 | 72 |
| 3.1.4 Reading, maths, and science..... | 89.33 | 2 |
| 3.1.5 University ranking..... | 83.78 | 8 |
| 3.2 Lifelong Learning..... | 67.34 | 21 |
| 3.2.1 Quality of management schools..... | 48.15 | 51 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 86.53 | 10 |
| 3.3 Access to Growth Opportunities..... | 65.21 | 24 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 57.82 | 27 |
| 3.3.2 Personal rights..... | 96.38 | 9 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 79.39 | 34 |
| 3.3.4 Use of virtual professional networks..... | 2.41 | 99 |
| 3.3.5 Collaboration within organisations..... | 77.43 | 16 |
| 3.3.6 Collaboration across organisations..... | 77.83 | 28 |
| 4 RETAIN | 75.96 | 20 |
| 4.1 Sustainability..... | 73.28 | 19 |
| 4.1.1 Pension system..... | 94.90 | 3 |
| 4.1.2 Social protection..... | 70.50 | 21 |
| 4.1.3 Brain retention..... | 54.44 | 36 |
| 4.2 Lifestyle..... | 78.63 | 29 |
| 4.2.1 Environmental performance..... | 81.17 | 38 |
| 4.2.2 Personal safety..... | 96.83 | 7 |
| 4.2.3 Physician density..... | 36.54 | 52 |
| 4.2.4 Sanitation..... | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS | 64.28 | 18 |
| 5.1 Mid-Level Skills..... | 61.99 | 9 |
| 5.1.1 Workforce with secondary education..... | 45.68 | 22 |
| 5.1.2 Population with secondary education..... | 56.78 | 25 |
| 5.1.3 Technicians and associate professionals..... | 100.00 | 1 |
| 5.1.4 Labour productivity per employee..... | 45.52 | 28 |
| 5.2 Employability..... | 66.57 | 33 |
| 5.2.1 Ease of finding skilled employees..... | 66.67 | 28 |
| 5.2.2 Relevance of education system to the economy..... | 58.17 | 33 |
| 5.2.3 Skills matching with secondary education..... | 67.49 | 44 |
| 5.2.4 Skills matching with tertiary education..... | 73.97 | 46 |
| 6 GLOBAL KNOWLEDGE SKILLS | 46.02 | 23 |
| 6.1 High-Level Skills..... | 55.61 | 17 |
| 6.1.1 Workforce with tertiary education..... | 67.23 | 6 |
| 6.1.2 Population with tertiary education..... | 50.26 | 13 |
| 6.1.3 Professionals..... | n/a | n/a |
| 6.1.4 Researchers..... | 63.31 | 9 |
| 6.1.5 Senior officials and managers..... | 13.13 | 80 |
| 6.1.6 Availability of scientists and engineers..... | 84.12 | 3 |
| 6.2 Talent Impact..... | 36.43 | 43 |
| 6.2.1 Innovation output..... | 61.69 | 20 |
| 6.2.2 High-value exports..... | 31.64 | 19 |
| 6.2.3 New product entrepreneurial activity..... | 48.46 | 38 |
| 6.2.4 New business density..... | 0.70 | 88 |
| 6.2.5 Scientific journal articles..... | 39.67 | 42 |

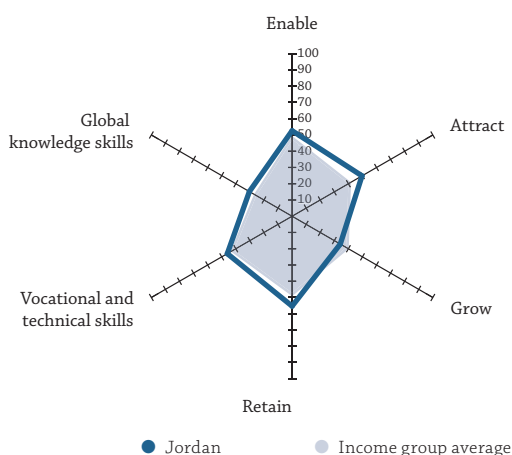
JORDAN

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 50 |
| Income group | Upper middle income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 7.59 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 10,880.30 |
| GDP (US\$ billions) | 37.52 |
| GTCI score | 44.70 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 52.60 | 51 |
| 1.1 Regulatory Landscape..... | 49.64 | 58 |
| 1.1.1 Government effectiveness | 45.76 | 60 |
| 1.1.2 Business-government relations | 61.59 | 50 |
| 1.1.3 Political stability | 49.76 | 89 |
| 1.1.4 Regulatory quality | 46.36 | 66 |
| 1.1.5 Corruption | 44.74 | 47 |
| 1.2 Market Landscape..... | 50.40 | 54 |
| 1.2.1 Competition intensity | 76.29 | 34 |
| 1.2.2 Ease of doing business | 44.61 | 96 |
| 1.2.3 Cluster development | 60.37 | 29 |
| 1.2.4 R&D expenditure | 9.81 | 63 |
| 1.2.5 ICT infrastructure | 48.43 | 71 |
| 1.2.6 Technology utilisation | 62.90 | 36 |
| 1.3 Business and Labour Landscape..... | 57.77 | 60 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 66.76 | 40 |
| 1.3.4 Labour-employer cooperation | 59.08 | 39 |
| Management Practice | | |
| 1.3.5 Professional management..... | 39.26 | 67 |
| 1.3.6 Relationship of pay to productivity..... | 52.53 | 52 |
| 2 ATTRACT..... | 49.68 | 39 |
| 2.1 External Openness | 63.02 | 13 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 56.66 | 43 |
| 2.1.2 Prevalence of foreign ownership | 56.30 | 63 |
| Attract People | | |
| 2.1.3 Migrant stock | 90.27 | 8 |
| 2.1.4 International students..... | 67.29 | 13 |
| 2.1.5 Brain gain | 44.58 | 52 |
| 2.2 Internal Openness | 36.34 | 106 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 26.44 | 89 |
| 2.2.2 Tolerance of immigrants | 47.89 | 76 |
| 2.2.3 Social mobility..... | 46.59 | 53 |
| Gender Equality | | |
| 2.2.4 Female graduates | 48.02 | 89 |
| 2.2.5 Gender earnings gap | 0.00 | 117 |
| 2.2.6 Leadership opportunities for women | 49.10 | 47 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 34.24 | 82 |
| 3.1 Formal Education..... | 24.30 | 72 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 6.01 | 92 |
| 3.1.2 Tertiary enrolment..... | 38.98 | 58 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | n/a | n/a |
| 3.1.4 Reading, maths, and science | 28.21 | 60 |
| 3.1.5 University ranking | 24.02 | 53 |
| 3.2 Lifelong Learning..... | 33.66 | 87 |
| 3.2.1 Quality of management schools..... | 49.47 | 50 |
| 3.2.2 Prevalence of training in firms..... | 0.00 | 92 |
| 3.2.3 Employee development..... | 51.52 | 39 |
| 3.3 Access to Growth Opportunities | 44.74 | 71 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 34.08 | 80 |
| 3.3.2 Personal rights..... | 18.43 | 106 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 81.21 | 30 |
| 3.3.4 Use of virtual professional networks..... | 23.67 | 43 |
| 3.3.5 Collaboration within organisations | 36.34 | 70 |
| 3.3.6 Collaboration across organisations | 74.71 | 38 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 55.31 | 53 |
| 4.1 Sustainability | 43.83 | 53 |
| 4.1.1 Pension system | 36.73 | 56 |
| 4.1.2 Social protection | 48.96 | 37 |
| 4.1.3 Brain retention | 45.79 | 49 |
| 4.2 Lifestyle | 66.80 | 52 |
| 4.2.1 Environmental performance..... | 65.58 | 66 |
| 4.2.2 Personal safety | 61.05 | 70 |
| 4.2.3 Physician density | 42.15 | 43 |
| 4.2.4 Sanitation | 98.41 | 30 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 46.03 | 54 |
| 5.1 Mid-Level Skills | 23.91 | 85 |
| 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..... | 27.71 | 55 |
| 5.2 Employability..... | 68.16 | 27 |
| 5.2.1 Ease of finding skilled employees | 65.68 | 32 |
| 5.2.2 Relevance of education system to the economy | 62.02 | 26 |
| 5.2.3 Skills matching with secondary education..... | 68.21 | 41 |
| 5.2.4 Skills matching with tertiary education | 76.73 | 34 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 30.35 | 57 |
| 6.1 High-Level Skills | 34.62 | 46 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 26.76 | 51 |
| 6.1.3 Professionals | n/a | n/a |
| 6.1.4 Researchers | 3.59 | 70 |
| 6.1.5 Senior officials and managers | n/a | n/a |
| 6.1.6 Availability of scientists and engineers | 73.53 | 13 |
| 6.2 Talent Impact..... | 26.08 | 57 |
| 6.2.1 Innovation output..... | 26.54 | 73 |
| 6.2.2 High-value exports..... | 3.39 | 92 |
| 6.2.3 New product entrepreneurial activity | 61.16 | 15 |
| 6.2.4 New business density | 5.57 | 68 |
| 6.2.5 Scientific journal articles..... | 33.76 | 46 |

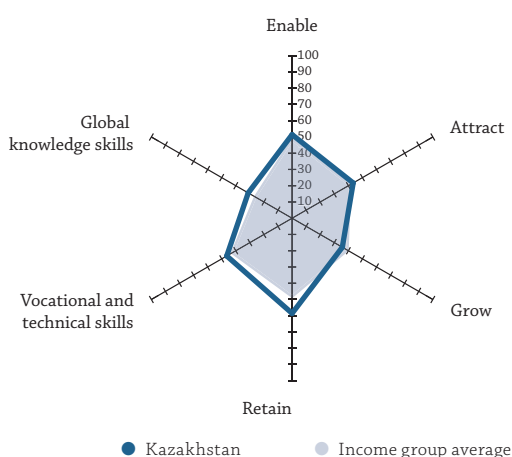
KAZAKHSTAN

Key Indicators

| | |
|----------------------------|----------------------------------|
| Rank (out of 119)..... | 51 |
| Income group..... | Upper middle income |
| Regional group..... | Central and Southern Asia |
| Population (millions)..... | 17.54 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 25,876.50 |
| GDP (US\$ billions)..... | 184.36 |
| GTCI score..... | 44.44 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 51.43 | 58 |
| 1.1 Regulatory Landscape..... | 45.96 | 70 |
| 1.1.1 Government effectiveness..... | 40.87 | 73 |
| 1.1.2 Business-government relations..... | 63.36 | 40 |
| 1.1.3 Political stability..... | 61.41 | 67 |
| 1.1.4 Regulatory quality..... | 44.42 | 68 |
| 1.1.5 Corruption..... | 19.74 | 101 |
| 1.2 Market Landscape..... | 44.55 | 68 |
| 1.2.1 Competition intensity..... | 54.29 | 94 |
| 1.2.2 Ease of doing business..... | 77.78 | 33 |
| 1.2.3 Cluster development..... | 20.74 | 106 |
| 1.2.4 R&D expenditure..... | 3.74 | 84 |
| 1.2.5 ICT infrastructure..... | 69.03 | 45 |
| 1.2.6 Technology utilisation..... | 41.70 | 66 |
| 1.3 Business and Labour Landscape..... | 63.79 | 37 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 100.00 | 1 |
| 1.3.2 Ease of redundancy..... | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 71.63 | 28 |
| 1.3.4 Labour-employer cooperation..... | 52.30 | 54 |
| Management Practice | | |
| 1.3.5 Professional management..... | 27.51 | 85 |
| 1.3.6 Relationship of pay to productivity..... | 61.28 | 34 |
| 2 ATTRACT..... | 43.40 | 58 |
| 2.1 External Openness..... | 37.54 | 60 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 39.69 | 87 |
| 2.1.2 Prevalence of foreign ownership..... | 46.42 | 92 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 44.24 | 16 |
| 2.1.4 International students..... | 10.34 | 63 |
| 2.1.5 Brain gain..... | 46.99 | 43 |
| 2.2 Internal Openness..... | 49.27 | 63 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 34.48 | 75 |
| 2.2.2 Tolerance of immigrants..... | 36.62 | 94 |
| 2.2.3 Social mobility..... | 43.60 | 61 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 72.88 | 59 |
| 2.2.5 Gender earnings gap..... | 48.19 | 70 |
| 2.2.6 Leadership opportunities for women..... | 59.86 | 33 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 35.69 | 79 |
| 3.1 Formal Education..... | 30.80 | 60 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 17.54 | 62 |
| 3.1.2 Tertiary enrolment..... | 40.21 | 56 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 8.70 | 88 |
| 3.1.4 Reading, maths, and science..... | 51.17 | 40 |
| 3.1.5 University ranking..... | 36.40 | 36 |
| 3.2 Lifelong Learning..... | 34.78 | 82 |
| 3.2.1 Quality of management schools..... | 31.75 | 92 |
| 3.2.2 Prevalence of training in firms..... | 32.85 | 57 |
| 3.2.3 Employee development..... | 39.73 | 61 |
| 3.3 Access to Growth Opportunities..... | 41.49 | 90 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 38.27 | 72 |
| 3.3.2 Personal rights..... | 26.94 | 100 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 58.48 | 88 |
| 3.3.4 Use of virtual professional networks..... | 6.02 | 89 |
| 3.3.5 Collaboration within organisations..... | 50.85 | 37 |
| 3.3.6 Collaboration across organisations..... | 68.35 | 63 |
| 4 RETAIN..... | 58.52 | 48 |
| 4.1 Sustainability..... | 47.86 | 44 |
| 4.1.1 Pension system..... | 62.24 | 40 |
| 4.1.2 Social protection..... | 38.29 | 56 |
| 4.1.3 Brain retention..... | 43.05 | 55 |
| 4.2 Lifestyle..... | 69.17 | 49 |
| 4.2.1 Environmental performance..... | 67.54 | 63 |
| 4.2.2 Personal safety..... | 59.90 | 73 |
| 4.2.3 Physician density..... | 52.08 | 27 |
| 4.2.4 Sanitation..... | 97.16 | 38 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 46.42 | 53 |
| 5.1 Mid-Level Skills..... | 39.39 | 53 |
| 5.1.1 Workforce with secondary education..... | 34.59 | 43 |
| 5.1.2 Population with secondary education..... | 43.22 | 44 |
| 5.1.3 Technicians and associate professionals..... | 49.78 | 40 |
| 5.1.4 Labour productivity per employee..... | 29.96 | 53 |
| 5.2 Employability..... | 53.44 | 63 |
| 5.2.1 Ease of finding skilled employees..... | 49.83 | 56 |
| 5.2.2 Relevance of education system to the economy..... | 40.38 | 64 |
| 5.2.3 Skills matching with secondary education..... | 62.52 | 61 |
| 5.2.4 Skills matching with tertiary education..... | 61.03 | 97 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 31.17 | 52 |
| 6.1 High-Level Skills..... | 35.80 | 44 |
| 6.1.1 Workforce with tertiary education..... | 49.74 | 24 |
| 6.1.2 Population with tertiary education..... | 37.91 | 24 |
| 6.1.3 Professionals..... | 45.95 | 34 |
| 6.1.4 Researchers..... | 8.76 | 54 |
| 6.1.5 Senior officials and managers..... | 31.25 | 41 |
| 6.1.6 Availability of scientists and engineers..... | 41.18 | 59 |
| 6.2 Talent Impact..... | 26.54 | 55 |
| 6.2.1 Innovation output..... | 19.16 | 90 |
| 6.2.2 High-value exports..... | 77.59 | 4 |
| 6.2.3 New product entrepreneurial activity..... | 22.77 | 77 |
| 6.2.4 New business density..... | 9.75 | 49 |
| 6.2.5 Scientific journal articles..... | 3.46 | 101 |

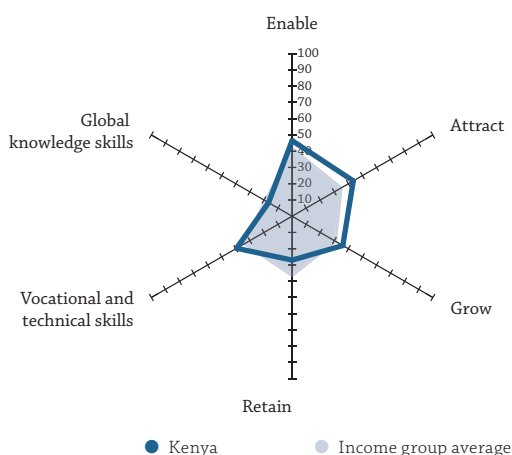
KENYA

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 88 |
| Income group | Lower middle income |
| Regional group | Sub-Saharan Africa |
| Population (millions) | 46.05 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 3,082.52 |
| GDP (US\$ billions) | 63.40 |
| GTCI score | 34.87 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 46.55 | 81 |
| 1.1 Regulatory Landscape..... | 36.45 | 98 |
| 1.1.1 Government effectiveness | 34.70 | 86 |
| 1.1.2 Business-government relations | 61.15 | 53 |
| 1.1.3 Political stability | 32.52 | 112 |
| 1.1.4 Regulatory quality | 38.11 | 87 |
| 1.1.5 Corruption | 15.79 | 110 |
| 1.2 Market Landscape | 49.14 | 57 |
| 1.2.1 Competition intensity | 82.86 | 17 |
| 1.2.2 Ease of doing business | 51.92 | 79 |
| 1.2.3 Cluster development | 56.66 | 36 |
| 1.2.4 R&D expenditure | 18.22 | 42 |
| 1.2.5 ICT infrastructure | 20.19 | 100 |
| 1.2.6 Technology utilisation | 65.02 | 33 |
| 1.3 Business and Labour Landscape..... | 54.05 | 66 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 59.56 | 61 |
| 1.3.4 Labour-employer cooperation | 44.17 | 83 |
| Management Practice | | |
| 1.3.5 Professional management..... | 42.12 | 63 |
| 1.3.6 Relationship of pay to productivity..... | 41.75 | 68 |
| 2 ATTRACT..... | 43.48 | 57 |
| 2.1 External Openness | 44.24 | 37 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 56.40 | 45 |
| 2.1.2 Prevalence of foreign ownership | 62.72 | 50 |
| Attract People | | |
| 2.1.3 Migrant stock | 5.03 | 75 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain | 52.81 | 33 |
| 2.2 Internal Openness | 42.72 | 89 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 11.49 | 112 |
| 2.2.2 Tolerance of immigrants..... | 67.61 | 43 |
| 2.2.3 Social mobility..... | 45.50 | 55 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 57.83 | 38 |
| 2.2.6 Leadership opportunities for women..... | 31.18 | 77 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 36.05 | 76 |
| 3.1 Formal Education..... | 8.22 | 110 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 0.72 | 108 |
| 3.1.2 Tertiary enrolment..... | 2.87 | 110 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 15.35 | 80 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 13.93 | 71 |
| 3.2 Lifelong Learning..... | 51.41 | 41 |
| 3.2.1 Quality of management schools..... | 53.97 | 41 |
| 3.2.2 Prevalence of training in firms..... | 49.08 | 36 |
| 3.2.3 Employee development..... | 51.18 | 40 |
| 3.3 Access to Growth Opportunities | 48.53 | 58 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 51.40 | 38 |
| 3.3.2 Personal rights..... | 29.14 | 96 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 78.18 | 38 |
| 3.3.4 Use of virtual professional networks..... | 7.52 | 84 |
| 3.3.5 Collaboration within organisations | 47.87 | 40 |
| 3.3.6 Collaboration across organisations | 77.09 | 32 |
| 4 RETAIN..... | 27.00 | 109 |
| 4.1 Sustainability | 27.84 | 88 |
| 4.1.1 Pension system | 6.12 | 91 |
| 4.1.2 Social protection | 30.47 | 75 |
| 4.1.3 Brain retention | 46.92 | 47 |
| 4.2 Lifestyle | 26.16 | 114 |
| 4.2.1 Environmental performance..... | 47.39 | 98 |
| 4.2.2 Personal safety | 33.80 | 109 |
| 4.2.3 Physician density | 2.88 | 98 |
| 4.2.4 Sanitation | 20.57 | 111 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 39.43 | 73 |
| 5.1 Mid-Level Skills | 11.47 | 102 |
| 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..... | 3.25 | 92 |
| 5.2 Employability..... | 67.39 | 30 |
| 5.2.1 Ease of finding skilled employees | 70.30 | 25 |
| 5.2.2 Relevance of education system to the economy | 58.89 | 31 |
| 5.2.3 Skills matching with secondary education..... | 61.80 | 65 |
| 5.2.4 Skills matching with tertiary education | 78.58 | 33 |
| 6 GLOBAL KNOWLEDGE SKILLS | 16.71 | 92 |
| 6.1 High-Level Skills | 19.15 | 82 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 2.74 | 96 |
| 6.1.3 Professionals | n/a | n/a |
| 6.1.4 Researchers..... | 2.65 | 73 |
| 6.1.5 Senior officials and managers | n/a | n/a |
| 6.1.6 Availability of scientists and engineers | 52.06 | 39 |
| 6.2 Talent Impact..... | 14.27 | 89 |
| 6.2.1 Innovation output..... | 27.77 | 68 |
| 6.2.2 High-value exports..... | 7.16 | 77 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 10.27 | 48 |
| 6.2.5 Scientific journal articles..... | 11.88 | 72 |

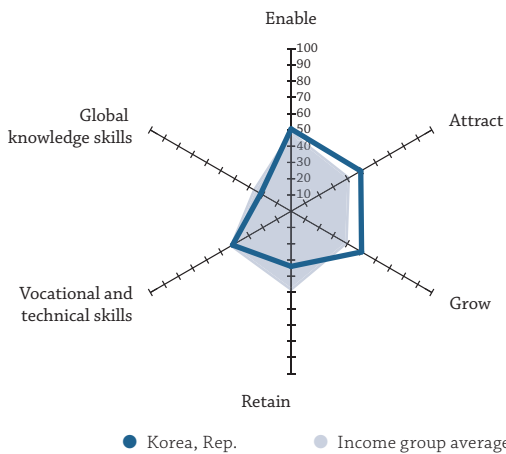
KOREA, REP.

Key Indicators

| | |
|----------------------------|--|
| Rank (out of 119)..... | 30 |
| Income group..... | High income |
| Regional group..... | East, Southeastern Asia and Oceania |
| Population (millions)..... | 50.62 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 34,549.20 |
| GDP (US\$ billions)..... | 1,377.87 |
| GTCI score..... | 55.57 |
| GTCI score (income group average)..... | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 69.94 | 25 |
| 1.1 Regulatory Landscape..... | 64.31 | 36 |
| 1.1.1 Government effectiveness..... | 68.64 | 32 |
| 1.1.2 Business-government relations..... | 62.03 | 46 |
| 1.1.3 Political stability..... | 66.26 | 55 |
| 1.1.4 Regulatory quality..... | 73.30 | 25 |
| 1.1.5 Corruption..... | 51.32 | 42 |
| 1.2 Market Landscape..... | 87.60 | 3 |
| 1.2.1 Competition intensity..... | 91.14 | 5 |
| 1.2.2 Ease of doing business..... | 94.52 | 4 |
| 1.2.3 Cluster development..... | 67.49 | 26 |
| 1.2.4 R&D expenditure..... | 100.00 | 1 |
| 1.2.5 ICT infrastructure..... | 100.00 | 1 |
| 1.2.6 Technology utilisation..... | 72.44 | 27 |
| 1.3 Business and Labour Landscape..... | 57.91 | 59 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 55.67 | 69 |
| 1.3.2 Ease of redundancy..... | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 64.83 | 50 |
| 1.3.4 Labour-employer cooperation..... | 23.04 | 116 |
| Management Practice | | |
| 1.3.5 Professional management..... | 60.17 | 28 |
| 1.3.6 Relationship of pay to productivity..... | 73.74 | 15 |
| 2 ATTRACT..... | 38.81 | 81 |
| 2.1 External Openness..... | 34.18 | 67 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 54.31 | 52 |
| 2.1.2 Prevalence of foreign ownership..... | 53.83 | 70 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 5.67 | 70 |
| 2.1.4 International students..... | 8.52 | 69 |
| 2.1.5 Brain gain..... | 48.59 | 42 |
| 2.2 Internal Openness..... | 43.43 | 86 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 75.86 | 10 |
| 2.2.2 Tolerance of immigrants..... | 56.34 | 59 |
| 2.2.3 Social mobility..... | 31.88 | 94 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 59.88 | 78 |
| 2.2.5 Gender earnings gap..... | 33.73 | 96 |
| 2.2.6 Leadership opportunities for women..... | 2.87 | 117 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 56.93 | 25 |
| 3.1 Formal Education..... | 57.21 | 14 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 14.52 | 69 |
| 3.1.2 Tertiary enrolment..... | 83.62 | 2 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 22.51 | 56 |
| 3.1.4 Reading, maths, and science..... | 84.71 | 6 |
| 3.1.5 University ranking..... | 80.70 | 9 |
| 3.2 Lifelong Learning..... | 49.56 | 45 |
| 3.2.1 Quality of management schools..... | 45.50 | 55 |
| 3.2.2 Prevalence of training in firms..... | 47.63 | 38 |
| 3.2.3 Employee development..... | 55.56 | 35 |
| 3.3 Access to Growth Opportunities..... | 64.01 | 27 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 44.69 | 59 |
| 3.3.2 Personal rights..... | 65.45 | 51 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 78.48 | 36 |
| 3.3.4 Use of virtual professional networks..... | n/a | n/a |
| 3.3.5 Collaboration within organisations..... | 53.25 | 32 |
| 3.3.6 Collaboration across organisations..... | 78.19 | 27 |
| 4 RETAIN..... | 60.76 | 40 |
| 4.1 Sustainability..... | 48.83 | 42 |
| 4.1.1 Pension system..... | 47.96 | 50 |
| 4.1.2 Social protection..... | 36.12 | 61 |
| 4.1.3 Brain retention..... | 62.41 | 28 |
| 4.2 Lifestyle..... | 72.69 | 43 |
| 4.2.1 Environmental performance..... | 62.54 | 71 |
| 4.2.2 Personal safety..... | 92.81 | 13 |
| 4.2.3 Physician density..... | 35.42 | 54 |
| 4.2.4 Sanitation..... | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 53.41 | 35 |
| 5.1 Mid-Level Skills..... | 44.39 | 38 |
| 5.1.1 Workforce with secondary education..... | 33.93 | 48 |
| 5.1.2 Population with secondary education..... | 53.21 | 30 |
| 5.1.3 Technicians and associate professionals..... | 47.53 | 44 |
| 5.1.4 Labour productivity per employee..... | 42.90 | 30 |
| 5.2 Employability..... | 62.42 | 39 |
| 5.2.1 Ease of finding skilled employees..... | 67.00 | 27 |
| 5.2.2 Relevance of education system to the economy..... | 39.42 | 66 |
| 5.2.3 Skills matching with secondary education..... | 70.22 | 33 |
| 5.2.4 Skills matching with tertiary education..... | 73.03 | 49 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 53.56 | 15 |
| 6.1 High-Level Skills..... | 52.66 | 20 |
| 6.1.1 Workforce with tertiary education..... | 61.29 | 10 |
| 6.1.2 Population with tertiary education..... | 53.52 | 11 |
| 6.1.3 Professionals..... | 55.49 | 19 |
| 6.1.4 Researchers..... | 85.83 | 3 |
| 6.1.5 Senior officials and managers..... | 7.50 | 91 |
| 6.1.6 Availability of scientists and engineers..... | 52.35 | 38 |
| 6.2 Talent Impact..... | 54.47 | 13 |
| 6.2.1 Innovation output..... | 75.92 | 9 |
| 6.2.2 High-value exports..... | 50.47 | 7 |
| 6.2.3 New product entrepreneurial activity..... | 68.18 | 11 |
| 6.2.4 New business density..... | 13.17 | 43 |
| 6.2.5 Scientific journal articles..... | 64.59 | 19 |

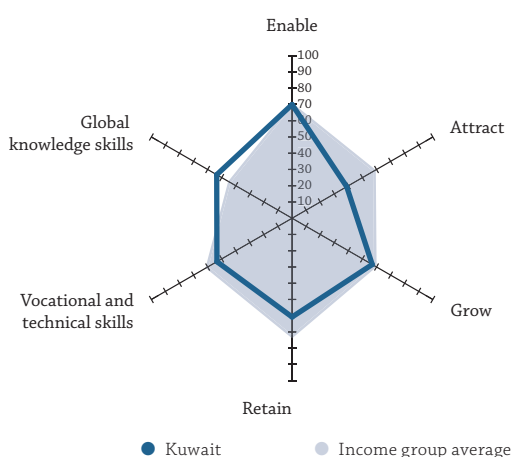
KUWAIT

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 65 |
| Income group | High income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 3.89 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 71,312.00 |
| GDP (US\$ billions) | 112.81 |
| GTCI score | 40.85 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 49.82 | 65 |
| 1.1 Regulatory Landscape..... | 43.12 | 82 |
| 1.1.1 Government effectiveness | 41.65 | 69 |
| 1.1.2 Business-government relations | 35.98 | 104 |
| 1.1.3 Political stability | 61.17 | 71 |
| 1.1.4 Regulatory quality | 41.26 | 75 |
| 1.1.5 Corruption | 35.53 | 60 |
| 1.2 Market Landscape | 47.24 | 62 |
| 1.2.1 Competition intensity | 70.86 | 56 |
| 1.2.2 Ease of doing business | 48.81 | 85 |
| 1.2.3 Cluster development | 49.85 | 45 |
| 1.2.4 R&D expenditure | 6.78 | 73 |
| 1.2.5 ICT infrastructure | 68.62 | 46 |
| 1.2.6 Technology utilisation | 38.52 | 75 |
| 1.3 Business and Labour Landscape..... | 59.11 | 53 |
| 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..... | 57.98 | 66 |
| 1.3.4 Labour-employer cooperation | 53.93 | 52 |
| Management Practice | | |
| 1.3.5 Professional management..... | 15.47 | 109 |
| 1.3.6 Relationship of pay to productivity..... | 27.27 | 99 |
| 2 ATTRACT..... | 48.90 | 41 |
| 2.1 External Openness | 44.85 | 34 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 29.77 | 105 |
| 2.1.2 Prevalence of foreign ownership | 13.09 | 117 |
| Attract People | | |
| 2.1.3 Migrant stock | 100.00 | 1 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 36.55 | 76 |
| 2.2 Internal Openness | 52.95 | 51 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 60.92 | 37 |
| 2.2.2 Tolerance of immigrants..... | 71.83 | 37 |
| 2.2.3 Social mobility..... | 29.43 | 100 |
| Gender Equality | | |
| 2.2.4 Female graduates | 78.48 | 47 |
| 2.2.5 Gender earnings gap | 43.37 | 78 |
| 2.2.6 Leadership opportunities for women | 33.69 | 72 |

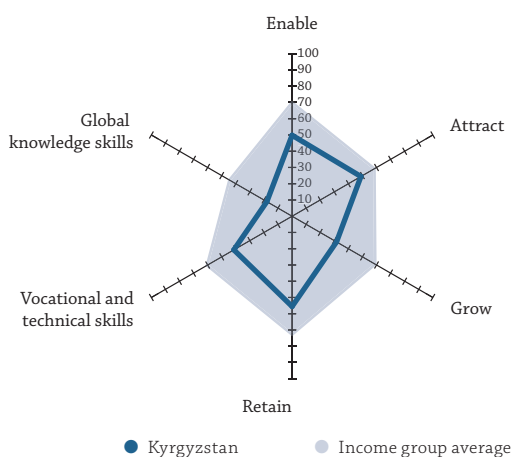
| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 31.58 | 90 |
| 3.1 Formal Education..... | 18.06 | 86 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 4.03 | 96 |
| 3.1.2 Tertiary enrolment..... | 23.20 | 82 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 29.16 | 38 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 15.84 | 70 |
| 3.2 Lifelong Learning..... | 34.67 | 84 |
| 3.2.1 Quality of management schools..... | 34.66 | 83 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 34.68 | 69 |
| 3.3 Access to Growth Opportunities | 42.01 | 88 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 27.65 | 95 |
| 3.3.2 Personal rights..... | 32.70 | 92 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 83.33 | 25 |
| 3.3.4 Use of virtual professional networks..... | 22.76 | 44 |
| 3.3.5 Collaboration within organisations | 24.06 | 102 |
| 3.3.6 Collaboration across organisations | 61.52 | 87 |
| 4 RETAIN..... | 55.51 | 52 |
| 4.1 Sustainability | 44.67 | 50 |
| 4.1.1 Pension system | n/a | n/a |
| 4.1.2 Social protection | 52.44 | 35 |
| 4.1.3 Brain retention | 36.90 | 72 |
| 4.2 Lifestyle | 66.34 | 53 |
| 4.2.1 Environmental performance..... | 50.97 | 93 |
| 4.2.2 Personal safety | 83.47 | 26 |
| 4.2.3 Physician density | 30.93 | 57 |
| 4.2.4 Sanitation | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 41.37 | 68 |
| 5.1 Mid-Level Skills | 38.23 | 58 |
| 5.1.1 Workforce with secondary education | 17.54 | 83 |
| 5.1.2 Population with secondary education | 19.12 | 86 |
| 5.1.3 Technicians and associate professionals | 32.29 | 66 |
| 5.1.4 Labour productivity per employee..... | 83.97 | 5 |
| 5.2 Employability..... | 44.50 | 92 |
| 5.2.1 Ease of finding skilled employees | 35.64 | 81 |
| 5.2.2 Relevance of education system to the economy | 33.17 | 76 |
| 5.2.3 Skills matching with secondary education..... | 49.82 | 104 |
| 5.2.4 Skills matching with tertiary education | 59.38 | 104 |
| 6 GLOBAL KNOWLEDGE SKILLS | 17.94 | 87 |
| 6.1 High-Level Skills | 19.06 | 83 |
| 6.1.1 Workforce with tertiary education | 27.04 | 69 |
| 6.1.2 Population with tertiary education | 21.61 | 60 |
| 6.1.3 Professionals..... | 20.52 | 72 |
| 6.1.4 Researchers..... | 1.41 | 83 |
| 6.1.5 Senior officials and managers | 14.38 | 78 |
| 6.1.6 Availability of scientists and engineers | 29.41 | 88 |
| 6.2 Talent Impact..... | 16.82 | 83 |
| 6.2.1 Innovation output..... | 40.42 | 44 |
| 6.2.2 High-value exports..... | 5.08 | 85 |
| 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..... | 4.95 | 95 |

KYRGYZSTAN

Key Indicators

| | |
|----------------------------|----------------------------------|
| Rank (out of 119)..... | 93 |
| Income group..... | Lower middle income |
| Regional group..... | Central and Southern Asia |
| Population (millions)..... | 5.96 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 37.55 | 104 |
| 1.1 Regulatory Landscape..... | 31.96 | 105 |
| 1.1.1 Government effectiveness..... | 19.02 | 112 |
| 1.1.2 Business-government relations..... | 45.92 | 86 |
| 1.1.3 Political stability..... | 42.72 | 97 |
| 1.1.4 Regulatory quality..... | 33.74 | 95 |
| 1.1.5 Corruption..... | 18.42 | 106 |
| 1.2 Market Landscape..... | 26.82 | 112 |
| 1.2.1 Competition intensity..... | 40.57 | 115 |
| 1.2.2 Ease of doing business..... | 59.28 | 68 |
| 1.2.3 Cluster development..... | 19.50 | 109 |
| 1.2.4 R&D expenditure..... | 2.80 | 90 |
| 1.2.5 ICT infrastructure..... | 33.83 | 90 |
| 1.2.6 Technology utilisation..... | 4.95 | 115 |
| 1.3 Business and Labour Landscape..... | 53.85 | 67 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 66.67 | 51 |
| 1.3.2 Ease of redundancy..... | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 47.71 | 96 |
| 1.3.4 Labour-employer cooperation..... | 42.55 | 86 |
| Management Practice | | |
| 1.3.5 Professional management..... | 12.32 | 112 |
| 1.3.6 Relationship of pay to productivity..... | 53.87 | 50 |
| 2 ATTRACT..... | 33.44 | 102 |
| 2.1 External Openness..... | 21.59 | 109 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 21.93 | 112 |
| 2.1.2 Prevalence of foreign ownership..... | 33.09 | 105 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 7.44 | 67 |
| 2.1.4 International students..... | 23.41 | 37 |
| 2.1.5 Brain gain..... | 22.09 | 102 |
| 2.2 Internal Openness..... | 45.28 | 81 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 18.39 | 103 |
| 2.2.2 Tolerance of immigrants..... | 57.75 | 57 |
| 2.2.3 Social mobility..... | 35.15 | 84 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 83.39 | 30 |
| 2.2.5 Gender earnings gap..... | 36.14 | 94 |
| 2.2.6 Leadership opportunities for women..... | 40.86 | 63 |

| | |
|--|-----------------|
| GDP per capita (PPP US\$)..... | 3,426.65 |
| GDP (US\$ billions)..... | 6.57 |
| GTCI score..... | 33.20 |
| GTCI score (income group average)..... | 32.92 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 28.09 | 98 |
| 3.1 Formal Education..... | 15.16 | 95 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 16.38 | 64 |
| 3.1.2 Tertiary enrolment..... | 39.90 | 57 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 4.35 | 102 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 37.40 | 72 |
| 3.2.1 Quality of management schools..... | 10.05 | 116 |
| 3.2.2 Prevalence of training in firms..... | 78.23 | 7 |
| 3.2.3 Employee development..... | 23.91 | 99 |
| 3.3 Access to Growth Opportunities..... | 31.71 | 110 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 26.54 | 97 |
| 3.3.2 Personal rights..... | 42.42 | 81 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 36.36 | 114 |
| 3.3.4 Use of virtual professional networks..... | 1.88 | 102 |
| 3.3.5 Collaboration within organisations..... | 26.54 | 95 |
| 3.3.6 Collaboration across organisations..... | 56.52 | 103 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 43.56 | 73 |
| 4.1 Sustainability..... | 26.55 | 94 |
| 4.1.1 Pension system..... | 38.78 | 55 |
| 4.1.2 Social protection..... | 21.51 | 92 |
| 4.1.3 Brain retention..... | 19.36 | 108 |
| 4.2 Lifestyle..... | 60.58 | 64 |
| 4.2.1 Environmental performance..... | 67.25 | 64 |
| 4.2.2 Personal safety..... | 53.35 | 84 |
| 4.2.3 Physician density..... | 29.33 | 61 |
| 4.2.4 Sanitation..... | 92.39 | 55 |

| | | |
|---|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 42.89 | 63 |
| 5.1 Mid-Level Skills..... | 47.56 | 32 |
| 5.1.1 Workforce with secondary education..... | 64.66 | 2 |
| 5.1.2 Population with secondary education..... | 87.59 | 3 |
| 5.1.3 Technicians and associate professionals..... | 34.08 | 61 |
| 5.1.4 Labour productivity per employee..... | 3.89 | 90 |
| 5.2 Employability..... | 38.23 | 111 |
| 5.2.1 Ease of finding skilled employees..... | 30.03 | 93 |
| 5.2.2 Relevance of education system to the economy..... | 26.44 | 95 |
| 5.2.3 Skills matching with secondary education..... | 47.68 | 109 |
| 5.2.4 Skills matching with tertiary education..... | 48.75 | 115 |

| | | |
|---|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS..... | 13.69 | 96 |
| 6.1 High-Level Skills..... | 15.19 | 95 |
| 6.1.1 Workforce with tertiary education..... | 25.73 | 74 |
| 6.1.2 Population with tertiary education..... | 2.74 | 96 |
| 6.1.3 Professionals..... | 25.14 | 65 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers..... | 4.38 | 99 |
| 6.1.6 Availability of scientists and engineers..... | 17.94 | 103 |
| 6.2 Talent Impact..... | 12.19 | 93 |
| 6.2.1 Innovation output..... | 15.82 | 100 |
| 6.2.2 High-value exports..... | 22.41 | 36 |
| 6.2.3 New product entrepreneurial activity..... | n/a | n/a |
| 6.2.4 New business density..... | 6.09 | 66 |
| 6.2.5 Scientific journal articles..... | 4.42 | 98 |

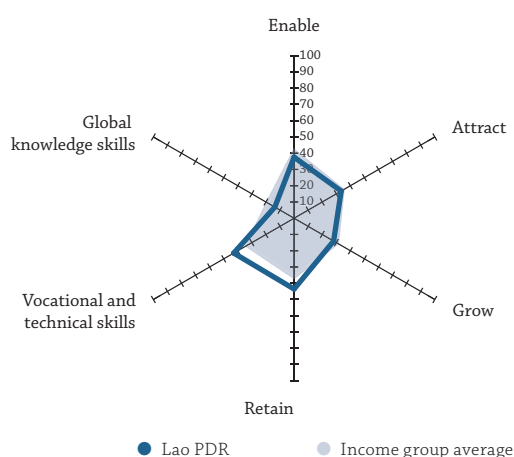
LAO PDR

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 95 |
| Income group | Lower middle income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 6.80 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 5,675.49 |
| GDP (US\$ billions) | 12.33 |
| GTCI score | 32.38 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 46.59 | 80 |
| 1.1 Regulatory Landscape..... | 46.56 | 67 |
| 1.1.1 Government effectiveness | 29.31 | 93 |
| 1.1.2 Business-government relations | 81.24 | 14 |
| 1.1.3 Political stability | 75.49 | 41 |
| 1.1.4 Regulatory quality | 25.73 | 107 |
| 1.1.5 Corruption | 21.05 | 95 |
| 1.2 Market Landscape..... | 33.47 | 102 |
| 1.2.1 Competition intensity | 39.43 | 116 |
| 1.2.2 Ease of doing business | 37.14 | 107 |
| 1.2.3 Cluster development | 48.30 | 49 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 12.82 | 108 |
| 1.2.6 Technology utilisation | 29.68 | 95 |
| 1.3 Business and Labour Landscape..... | 59.74 | 49 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 61.00 | 67 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 66.20 | 43 |
| 1.3.4 Labour-employer cooperation | 56.91 | 42 |
| Management Practice | | |
| 1.3.5 Professional management..... | 32.38 | 76 |
| 1.3.6 Relationship of pay to productivity..... | 61.95 | 31 |
| 2 ATTRACT..... | 42.01 | 62 |
| 2.1 External Openness | 28.19 | 86 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 40.99 | 82 |
| 2.1.2 Prevalence of foreign ownership | 56.54 | 62 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.57 | 109 |
| 2.1.4 International students..... | 1.10 | 89 |
| 2.1.5 Brain gain | 41.77 | 57 |
| 2.2 Internal Openness..... | 55.83 | 45 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 42.53 | 62 |
| 2.2.2 Tolerance of immigrants..... | 63.38 | 47 |
| 2.2.3 Social mobility..... | 46.32 | 54 |
| Gender Equality | | |
| 2.2.4 Female graduates | 53.12 | 84 |
| 2.2.5 Gender earnings gap | 72.29 | 13 |
| 2.2.6 Leadership opportunities for women..... | 57.35 | 35 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 25.29 | 107 |
| 3.1 Formal Education..... | 6.51 | 112 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 2.33 | 101 |
| 3.1.2 Tertiary enrolment..... | 14.25 | 92 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 9.46 | 86 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 26.34 | 108 |
| 3.2.1 Quality of management schools..... | 37.57 | 76 |
| 3.2.2 Prevalence of training in firms..... | 4.09 | 90 |
| 3.2.3 Employee development..... | 37.37 | 64 |
| 3.3 Access to Growth Opportunities | 43.02 | 82 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 43.02 | 65 |
| 3.3.2 Personal rights..... | 9.03 | 112 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 46.97 | 100 |
| 3.3.4 Use of virtual professional networks..... | n/a | n/a |
| 3.3.5 Collaboration within organisations | 41.18 | 54 |
| 3.3.6 Collaboration across organisations | 74.89 | 37 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 42.83 | 75 |
| 4.1 Sustainability | 44.45 | 52 |
| 4.1.1 Pension system | n/a | n/a |
| 4.1.2 Social protection | 38.57 | 55 |
| 4.1.3 Brain retention | 50.34 | 40 |
| 4.2 Lifestyle | 41.20 | 97 |
| 4.2.1 Environmental performance..... | 24.62 | 110 |
| 4.2.2 Personal safety | 70.69 | 46 |
| 4.2.3 Physician density | 2.56 | 100 |
| 4.2.4 Sanitation | 66.93 | 89 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 31.16 | 99 |
| 5.1 Mid-Level Skills | 6.98 | 110 |
| 5.1.1 Workforce with secondary education | 9.04 | 98 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 4.93 | 106 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 55.34 | 58 |
| 5.2.1 Ease of finding skilled employees | 37.95 | 72 |
| 5.2.2 Relevance of education system to the economy | 49.52 | 48 |
| 5.2.3 Skills matching with secondary education..... | 57.92 | 81 |
| 5.2.4 Skills matching with tertiary education | 75.98 | 39 |

| | | |
|--|-------------|------------|
| 6 GLOBAL KNOWLEDGE SKILLS | 6.39 | 116 |
| 6.1 High-Level Skills | 11.13 | 105 |
| 6.1.1 Workforce with tertiary education | 11.89 | 91 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals | 11.27 | 89 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 8.13 | 90 |
| 6.1.6 Availability of scientists and engineers | 13.24 | 111 |
| 6.2 Talent Impact..... | 1.66 | 118 |
| 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 | 0.41 | 90 |
| 6.2.5 Scientific journal articles..... | 2.91 | 105 |

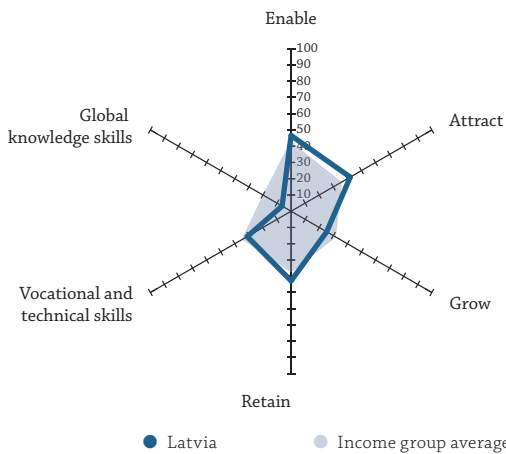
LATVIA

Key Indicators

| | |
|----------------------------|--------------------|
| Rank (out of 119)..... | 34 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions)..... | 1.98 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 24,286.20 |
| GDP (US\$ billions) | 27.04 |
| GTCI score..... | 52.27 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 60.57 | 34 |
| 1.1 Regulatory Landscape..... | 64.17 | 37 |
| 1.1.1 Government effectiveness | 70.44 | 26 |
| 1.1.2 Business-government relations | 47.46 | 82 |
| 1.1.3 Political stability | 74.76 | 42 |
| 1.1.4 Regulatory quality | 71.60 | 28 |
| 1.1.5 Corruption | 56.58 | 35 |
| 1.2 Market Landscape..... | 55.22 | 41 |
| 1.2.1 Competition intensity | 76.86 | 31 |
| 1.2.2 Ease of doing business | 88.07 | 12 |
| 1.2.3 Cluster development | 35.29 | 81 |
| 1.2.4 R&D expenditure | 15.89 | 48 |
| 1.2.5 ICT infrastructure..... | 75.99 | 33 |
| 1.2.6 Technology utilisation..... | 39.22 | 72 |
| 1.3 Business and Labour Landscape..... | 62.33 | 38 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 66.68 | 41 |
| 1.3.4 Labour-employer cooperation | 61.25 | 32 |
| Management Practice | | |
| 1.3.5 Professional management..... | 43.84 | 57 |
| 1.3.6 Relationship of pay to productivity..... | 55.56 | 46 |
| 2 ATTRACT..... | 46.88 | 46 |
| 2.1 External Openness | 40.32 | 48 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 50.91 | 61 |
| 2.1.2 Prevalence of foreign ownership | 72.59 | 29 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 29.30 | 26 |
| 2.1.4 International students..... | 25.91 | 33 |
| 2.1.5 Brain gain..... | 22.89 | 101 |
| 2.2 Internal Openness..... | 53.44 | 48 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 29.89 | 84 |
| 2.2.2 Tolerance of immigrants..... | 2.82 | 116 |
| 2.2.3 Social mobility..... | 52.04 | 46 |
| Gender Equality | | |
| 2.2.4 Female graduates | 96.79 | 4 |
| 2.2.5 Gender earnings gap | 63.86 | 27 |
| 2.2.6 Leadership opportunities for women..... | 75.27 | 13 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 45.81 | 42 |
| 3.1 Formal Education..... | 41.03 | 37 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 35.57 | 30 |
| 3.1.2 Tertiary enrolment..... | 58.58 | 31 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 22.25 | 59 |
| 3.1.4 Reading, maths, and science | 69.49 | 29 |
| 3.1.5 University ranking | 19.27 | 64 |
| 3.2 Lifelong Learning..... | 43.24 | 59 |
| 3.2.1 Quality of management schools..... | 54.50 | 40 |
| 3.2.2 Prevalence of training in firms..... | 28.76 | 65 |
| 3.2.3 Employee development..... | 46.46 | 50 |
| 3.3 Access to Growth Opportunities | 53.17 | 47 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 49.72 | 42 |
| 3.3.2 Personal rights..... | 65.76 | 50 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 77.58 | 43 |
| 3.3.4 Use of virtual professional networks..... | 26.18 | 38 |
| 3.3.5 Collaboration within organisations | 40.35 | 56 |
| 3.3.6 Collaboration across organisations | 59.41 | 95 |
| 4 RETAIN..... | 64.61 | 36 |
| 4.1 Sustainability | 52.20 | 39 |
| 4.1.1 Pension system | 92.86 | 8 |
| 4.1.2 Social protection | 42.12 | 47 |
| 4.1.3 Brain retention | 21.64 | 102 |
| 4.2 Lifestyle | 77.01 | 33 |
| 4.2.1 Environmental performance..... | 90.72 | 22 |
| 4.2.2 Personal safety | 79.88 | 35 |
| 4.2.3 Physician density | 51.28 | 29 |
| 4.2.4 Sanitation | 86.14 | 68 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 53.39 | 36 |
| 5.1 Mid-Level Skills | 54.37 | 22 |
| 5.1.1 Workforce with secondary education | 48.90 | 18 |
| 5.1.2 Population with secondary education | 72.61 | 10 |
| 5.1.3 Technicians and associate professionals | 62.78 | 23 |
| 5.1.4 Labour productivity per employee..... | 33.20 | 48 |
| 5.2 Employability..... | 52.41 | 69 |
| 5.2.1 Ease of finding skilled employees | 35.31 | 83 |
| 5.2.2 Relevance of education system to the economy | 43.27 | 54 |
| 5.2.3 Skills matching with secondary education..... | 62.24 | 63 |
| 5.2.4 Skills matching with tertiary education | 68.84 | 70 |
| 6 GLOBAL KNOWLEDGE SKILLS | 42.37 | 28 |
| 6.1 High-Level Skills | 39.16 | 34 |
| 6.1.1 Workforce with tertiary education | 49.58 | 25 |
| 6.1.2 Population with tertiary education | 30.19 | 43 |
| 6.1.3 Professionals..... | 48.84 | 26 |
| 6.1.4 Researchers..... | 22.09 | 40 |
| 6.1.5 Senior officials and managers | 57.50 | 13 |
| 6.1.6 Availability of scientists and engineers | 26.76 | 90 |
| 6.2 Talent Impact..... | 45.59 | 22 |
| 6.2.1 Innovation output..... | 51.14 | 32 |
| 6.2.2 High-value exports..... | 28.25 | 23 |
| 6.2.3 New product entrepreneurial activity | 42.94 | 51 |
| 6.2.4 New business density | 61.40 | 9 |
| 6.2.5 Scientific journal articles..... | 44.20 | 39 |

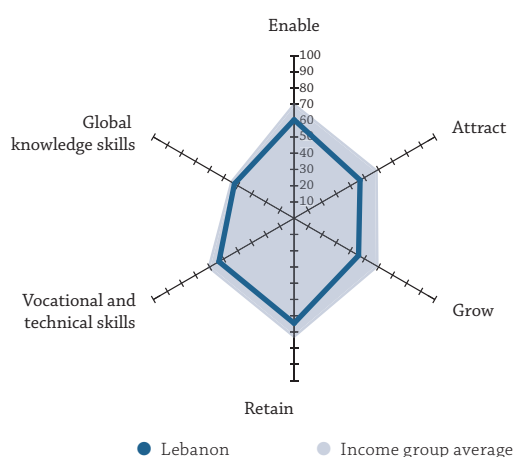
LEBANON

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 60 |
| Income group | Upper middle income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 5.85 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 13,938.00 |
| GDP (US\$ billions) | 47.10 |
| GTCI score | 41.91 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....43.79 87 | | |
| 1.1 Regulatory Landscape..... | 28.10 | 113 |
| 1.1.1 Government effectiveness | 30.08 | 91 |
| 1.1.2 Business-government relations | 31.57 | 113 |
| 1.1.3 Political stability | 22.09 | 116 |
| 1.1.4 Regulatory quality | 38.35 | 86 |
| 1.1.5 Corruption | 18.42 | 106 |
| 1.2 Market Landscape..... | 53.71 | 44 |
| 1.2.1 Competition intensity | 77.43 | 30 |
| 1.2.2 Ease of doing business | 42.00 | 100 |
| 1.2.3 Cluster development | 46.44 | 53 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 60.30 | 58 |
| 1.2.6 Technology utilisation | 42.40 | 64 |
| 1.3 Business and Labour Landscape..... | 49.54 | 82 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 45.07 | 108 |
| 1.3.4 Labour-employer cooperation | 46.07 | 76 |
| Management Practice | | |
| 1.3.5 Professional management..... | 30.95 | 81 |
| 1.3.6 Relationship of pay to productivity..... | 49.49 | 56 |
| 2 ATTRACT.....38.91 79 | | |
| 2.1 External Openness | 44.03 | 39 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 26.89 | 109 |
| 2.1.2 Prevalence of foreign ownership | 41.23 | 97 |
| Attract People | | |
| 2.1.3 Migrant stock | 75.20 | 9 |
| 2.1.4 International students..... | 51.31 | 18 |
| 2.1.5 Brain gain | 25.50 | 92 |
| 2.2 Internal Openness | 33.79 | 110 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 16.09 | 108 |
| 2.2.2 Tolerance of immigrants..... | 45.07 | 81 |
| 2.2.3 Social mobility..... | 33.51 | 89 |
| Gender Equality | | |
| 2.2.4 Female graduates | 72.96 | 58 |
| 2.2.5 Gender earnings gap | 9.64 | 111 |
| 2.2.6 Leadership opportunities for women..... | 25.45 | 89 |

| | Score | Rank |
|---|-------|------|
| 3 GROW.....39.45 62 | | |
| 3.1 Formal Education..... | 24.76 | 71 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 25.17 | 48 |
| 3.1.2 Tertiary enrolment..... | 33.32 | 67 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 16.62 | 75 |
| 3.1.4 Reading, maths, and science | 17.59 | 64 |
| 3.1.5 University ranking | 31.08 | 43 |
| 3.2 Lifelong Learning..... | 49.03 | 47 |
| 3.2.1 Quality of management schools..... | 82.80 | 9 |
| 3.2.2 Prevalence of training in firms..... | 30.61 | 59 |
| 3.2.3 Employee development..... | 33.67 | 72 |
| 3.3 Access to Growth Opportunities | 44.56 | 74 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 36.03 | 77 |
| 3.3.2 Personal rights..... | 36.92 | 87 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 68.18 | 70 |
| 3.3.4 Use of virtual professional networks..... | 26.39 | 37 |
| 3.3.5 Collaboration within organisations | 39.03 | 60 |
| 3.3.6 Collaboration across organisations | 60.80 | 90 |

| | | |
|--------------------------------------|-------|-----|
| 4 RETAIN.....38.97 91 | | |
| 4.1 Sustainability | 23.49 | 104 |
| 4.1.1 Pension system | 33.67 | 59 |
| 4.1.2 Social protection | 10.84 | 110 |
| 4.1.3 Brain retention | 25.97 | 94 |
| 4.2 Lifestyle | 54.45 | 77 |
| 4.2.1 Environmental performance..... | 59.80 | 81 |
| 4.2.2 Personal safety | 42.11 | 104 |
| 4.2.3 Physician density | 37.82 | 50 |
| 4.2.4 Sanitation | 78.07 | 78 |

| | | |
|--|-------|-----|
| 5 VOCATIONAL AND TECHNICAL SKILLS.....50.55 41 | | |
| 5.1 Mid-Level Skills | 27.56 | 75 |
| 5.1.1 Workforce with secondary education | 15.25 | 88 |
| 5.1.2 Population with secondary education | 24.82 | 72 |
| 5.1.3 Technicians and associate professionals | 42.60 | 50 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 73.55 | 23 |
| 5.2.1 Ease of finding skilled employees | 66.01 | 30 |
| 5.2.2 Relevance of education system to the economy | 74.52 | 18 |
| 5.2.3 Skills matching with secondary education..... | 69.92 | 37 |
| 5.2.4 Skills matching with tertiary education | 83.75 | 22 |

| | | |
|--|-------|-----|
| 6 GLOBAL KNOWLEDGE SKILLS.....39.79 34 | | |
| 6.1 High-Level Skills | 45.53 | 27 |
| 6.1.1 Workforce with tertiary education | 34.22 | 53 |
| 6.1.2 Population with tertiary education | 25.21 | 54 |
| 6.1.3 Professionals..... | 27.17 | 61 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 73.13 | 7 |
| 6.1.6 Availability of scientists and engineers | 67.94 | 18 |
| 6.2 Talent Impact..... | 34.04 | 48 |
| 6.2.1 Innovation output..... | 25.31 | 77 |
| 6.2.2 High-value exports..... | 3.95 | 91 |
| 6.2.3 New product entrepreneurial activity | 83.70 | 5 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 23.22 | 57 |

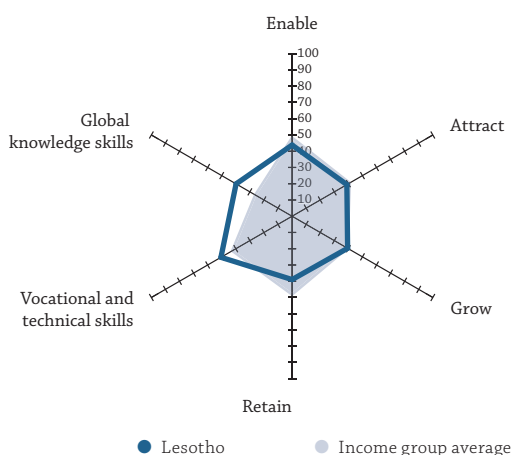
LESOTHO

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 106 |
| Income group | Lower middle income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 2.14 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 2,647.95 |
| GDP (US\$ billions) | 2.18 |
| GTCI score..... | 27.88 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 40.73 | 94 |
| 1.1 Regulatory Landscape..... | 42.20 | 84 |
| 1.1.1 Government effectiveness | 24.94 | 102 |
| 1.1.2 Business-government relations | 56.07 | 64 |
| 1.1.3 Political stability | 61.41 | 67 |
| 1.1.4 Regulatory quality | 35.68 | 90 |
| 1.1.5 Corruption | 32.89 | 67 |
| 1.2 Market Landscape..... | 28.23 | 107 |
| 1.2.1 Competition intensity | 60.29 | 79 |
| 1.2.2 Ease of doing business | 50.34 | 84 |
| 1.2.3 Cluster development | 34.98 | 82 |
| 1.2.4 R&D expenditure | 0.00 | 102 |
| 1.2.5 ICT infrastructure | 17.05 | 103 |
| 1.2.6 Technology utilisation | 6.71 | 113 |
| 1.3 Business and Labour Landscape..... | 51.75 | 75 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 55.34 | 76 |
| 1.3.4 Labour-employer cooperation | 32.25 | 103 |
| Management Practice | | |
| 1.3.5 Professional management..... | 22.92 | 95 |
| 1.3.6 Relationship of pay to productivity..... | 33.33 | 86 |
| 2 ATTRACT..... | 36.19 | 91 |
| 2.1 External Openness | 22.42 | 107 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 21.15 | 113 |
| 2.1.2 Prevalence of foreign ownership | 50.37 | 79 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 0.53 | 110 |
| 2.1.4 International students..... | 1.88 | 82 |
| 2.1.5 Brain gain..... | 38.15 | 67 |
| 2.2 Internal Openness..... | 49.97 | 62 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 64.37 | 30 |
| 2.2.2 Tolerance of immigrants..... | 36.62 | 94 |
| 2.2.3 Social mobility..... | 40.87 | 68 |
| Gender Equality | | |
| 2.2.4 Female graduates | 90.98 | 16 |
| 2.2.5 Gender earnings gap | 53.01 | 52 |
| 2.2.6 Leadership opportunities for women..... | 13.98 | 103 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 29.10 | 96 |
| 3.1 Formal Education..... | 28.41 | 66 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 5.65 | 94 |
| 3.1.2 Tertiary enrolment..... | 8.00 | 101 |
| 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 | 76 |
| 3.2 Lifelong Learning..... | 34.73 | 83 |
| 3.2.1 Quality of management schools..... | 42.59 | 63 |
| 3.2.2 Prevalence of training in firms..... | 36.68 | 52 |
| 3.2.3 Employee development..... | 24.92 | 94 |
| 3.3 Access to Growth Opportunities | 24.15 | 114 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 19.55 | 113 |
| 3.3.2 Personal rights..... | 66.39 | 49 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 0.00 | 119 |
| 3.3.4 Use of virtual professional networks..... | 3.51 | 96 |
| 3.3.5 Collaboration within organisations | 0.00 | 119 |
| 3.3.6 Collaboration across organisations | 55.44 | 105 |
| 4 RETAIN..... | 26.08 | 112 |
| 4.1 Sustainability | 24.03 | 102 |
| 4.1.1 Pension system | 2.04 | 100 |
| 4.1.2 Social protection | 35.19 | 65 |
| 4.1.3 Brain retention | 34.85 | 80 |
| 4.2 Lifestyle..... | 28.13 | 110 |
| 4.2.1 Environmental performance..... | 18.79 | 114 |
| 4.2.2 Personal safety | 44.81 | 100 |
| 4.2.3 Physician density | n/a | n/a |
| 4.2.4 Sanitation | 20.80 | 110 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 30.67 | 101 |
| 5.1 Mid-Level Skills | 17.57 | 92 |
| 5.1.1 Workforce with secondary education | 22.79 | 71 |
| 5.1.2 Population with secondary education | 11.98 | 93 |
| 5.1.3 Technicians and associate professionals | 17.94 | 86 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 43.78 | 96 |
| 5.2.1 Ease of finding skilled employees | 28.38 | 98 |
| 5.2.2 Relevance of education system to the economy | 43.75 | 53 |
| 5.2.3 Skills matching with secondary education..... | 27.30 | 117 |
| 5.2.4 Skills matching with tertiary education | 75.67 | 41 |
| 6 GLOBAL KNOWLEDGE SKILLS | 4.49 | 119 |
| 6.1 High-Level Skills | 5.39 | 118 |
| 6.1.1 Workforce with tertiary education | 6.31 | 99 |
| 6.1.2 Population with tertiary education | 2.23 | 99 |
| 6.1.3 Professionals..... | 0.87 | 109 |
| 6.1.4 Researchers..... | 0.13 | 100 |
| 6.1.5 Senior officials and managers | 7.50 | 91 |
| 6.1.6 Availability of scientists and engineers | 15.29 | 107 |
| 6.2 Talent Impact..... | 3.60 | 116 |
| 6.2.1 Innovation output..... | n/a | n/a |
| 6.2.2 High-value exports..... | 0.00 | 110 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 8.82 | 53 |
| 6.2.5 Scientific journal articles..... | 1.97 | 110 |

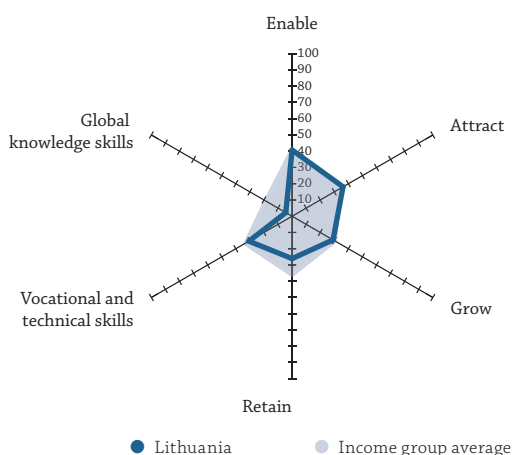
LITHUANIA

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 32 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 2.91 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 27,729.80 |
| GDP (US\$ billions) | 41.24 |
| GTCI score..... | 53.31 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 65.85 | 28 |
| 1.1 Regulatory Landscape..... | 68.05 | 27 |
| 1.1.1 Government effectiveness | 73.01 | 24 |
| 1.1.2 Business-government relations | 50.99 | 73 |
| 1.1.3 Political stability | 80.83 | 30 |
| 1.1.4 Regulatory quality | 76.21 | 19 |
| 1.1.5 Corruption | 59.21 | 32 |
| 1.2 Market Landscape | 61.37 | 33 |
| 1.2.1 Competition intensity | 79.43 | 25 |
| 1.2.2 Ease of doing business | 84.77 | 19 |
| 1.2.3 Cluster development | 31.27 | 88 |
| 1.2.4 R&D expenditure | 23.36 | 34 |
| 1.2.5 ICT infrastructure | 76.26 | 32 |
| 1.2.6 Technology utilisation | 73.14 | 25 |
| 1.3 Business and Labour Landscape..... | 68.14 | 31 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 65.26 | 48 |
| 1.3.4 Labour-employer cooperation | 52.30 | 54 |
| Management Practice | | |
| 1.3.5 Professional management..... | 53.01 | 36 |
| 1.3.6 Relationship of pay to productivity..... | 58.25 | 43 |
| 2 ATTRACT..... | 46.95 | 45 |
| 2.1 External Openness | 33.92 | 70 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 67.36 | 22 |
| 2.1.2 Prevalence of foreign ownership | 54.81 | 69 |
| Attract People | | |
| 2.1.3 Migrant stock | 10.28 | 54 |
| 2.1.4 International students..... | 12.64 | 59 |
| 2.1.5 Brain gain..... | 24.50 | 94 |
| 2.2 Internal Openness | 59.99 | 31 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 65.52 | 27 |
| 2.2.2 Tolerance of immigrants..... | 28.17 | 106 |
| 2.2.3 Social mobility..... | 53.68 | 40 |
| Gender Equality | | |
| 2.2.4 Female graduates | 91.09 | 14 |
| 2.2.5 Gender earnings gap | 66.27 | 19 |
| 2.2.6 Leadership opportunities for women..... | 55.20 | 36 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 50.14 | 36 |
| 3.1 Formal Education..... | 38.72 | 41 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 15.59 | 66 |
| 3.1.2 Tertiary enrolment..... | 59.90 | 29 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 31.71 | 31 |
| 3.1.4 Reading, maths, and science | 64.15 | 34 |
| 3.1.5 University ranking | 22.27 | 59 |
| 3.2 Lifelong Learning..... | 51.81 | 40 |
| 3.2.1 Quality of management schools..... | 43.92 | 59 |
| 3.2.2 Prevalence of training in firms | 50.92 | 33 |
| 3.2.3 Employee development..... | 60.61 | 31 |
| 3.3 Access to Growth Opportunities | 59.87 | 31 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 53.35 | 34 |
| 3.3.2 Personal rights..... | 73.04 | 41 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 87.27 | 18 |
| 3.3.4 Use of virtual professional networks..... | 19.61 | 49 |
| 3.3.5 Collaboration within organisations | 55.88 | 28 |
| 3.3.6 Collaboration across organisations | 70.06 | 55 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 68.10 | 30 |
| 4.1 Sustainability | 53.96 | 37 |
| 4.1.1 Pension system | 98.98 | 2 |
| 4.1.2 Social protection | 35.35 | 63 |
| 4.1.3 Brain retention | 27.56 | 92 |
| 4.2 Lifestyle | 82.23 | 17 |
| 4.2.1 Environmental performance..... | 90.31 | 23 |
| 4.2.2 Personal safety | 78.19 | 37 |
| 4.2.3 Physician density | 69.07 | 6 |
| 4.2.4 Sanitation | 91.36 | 59 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 46.47 | 52 |
| 5.1 Mid-Level Skills | 42.78 | 44 |
| 5.1.1 Workforce with secondary education | 46.71 | 20 |
| 5.1.2 Population with secondary education | 45.79 | 40 |
| 5.1.3 Technicians and associate professionals | 41.70 | 51 |
| 5.1.4 Labour productivity per employee..... | 36.91 | 42 |
| 5.2 Employability..... | 50.15 | 75 |
| 5.2.1 Ease of finding skilled employees | 29.70 | 95 |
| 5.2.2 Relevance of education system to the economy | 47.84 | 50 |
| 5.2.3 Skills matching with secondary education..... | 56.38 | 88 |
| 5.2.4 Skills matching with tertiary education | 66.69 | 78 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 42.37 | 28 |
| 6.1 High-Level Skills | 48.16 | 25 |
| 6.1.1 Workforce with tertiary education | 59.48 | 14 |
| 6.1.2 Population with tertiary education | 31.73 | 37 |
| 6.1.3 Professionals..... | 65.03 | 12 |
| 6.1.4 Researchers..... | 34.09 | 29 |
| 6.1.5 Senior officials and managers | 56.88 | 14 |
| 6.1.6 Availability of scientists and engineers | 41.76 | 58 |
| 6.2 Talent Impact..... | 36.59 | 41 |
| 6.2.1 Innovation output..... | 37.79 | 48 |
| 6.2.2 High-value exports..... | 22.41 | 36 |
| 6.2.3 New product entrepreneurial activity | 50.69 | 32 |
| 6.2.4 New business density | 24.14 | 28 |
| 6.2.5 Scientific journal articles..... | 47.90 | 34 |

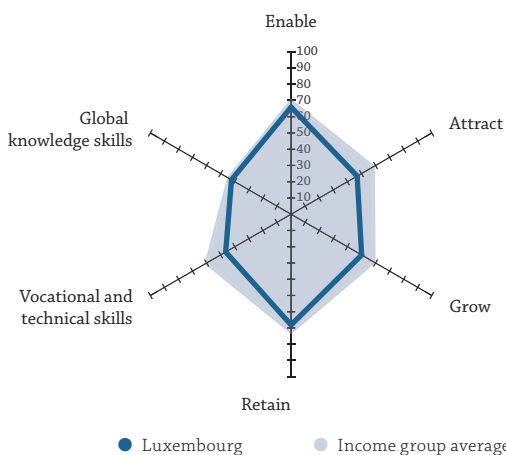
LUXEMBOURG

Key Indicators

Rank (out of 119)..... **10**
 Income group..... **High income**
 Regional group..... **Europe**
 Population (millions)..... **0.57**

GDP per capita (PPP US\$) **101,926.00**
 GDP (US\$ billions) **57.79**
 GTCI score..... **71.64**
 GTCI score (income group average) **60.92**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....77.79 18 | | |
| 1.1 Regulatory Landscape.....90.46 5 | | |
| 1.1.1 Government effectiveness86.38 13 | | |
| 1.1.2 Business-government relations.....94.04 4 | | |
| 1.1.3 Political stability.....98.06 2 | | |
| 1.1.4 Regulatory quality.....85.68 12 | | |
| 1.1.5 Corruption.....88.16 10 | | |
| 1.2 Market Landscape.....72.63 20 | | |
| 1.2.1 Competition intensity.....74.00 39 | | |
| 1.2.2 Ease of doing business.....66.07 55 | | |
| 1.2.3 Cluster development.....88.24 10 | | |
| 1.2.4 R&D expenditure.....29.21 28 | | |
| 1.2.5 ICT infrastructure.....93.45 10 | | |
| 1.2.6 Technology utilisation.....84.81 12 | | |
| 1.3 Business and Labour Landscape.....70.27 28 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring.....22.33 105 | | |
| 1.3.2 Ease of redundancy.....70.00 63 | | |
| 1.3.3 Cluster labour market policies.....92.34 3 | | |
| 1.3.4 Labour-employer cooperation.....83.74 11 | | |
| Management Practice | | |
| 1.3.5 Professional management.....82.52 17 | | |
| 1.3.6 Relationship of pay to productivity.....70.71 18 | | |
| 2 ATTRACT.....88.42 2 | | |
| 2.1 External Openness.....92.54 3 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer.....83.29 3 | | |
| 2.1.2 Prevalence of foreign ownership.....98.02 3 | | |
| Attract People | | |
| 2.1.3 Migrant stock.....96.84 6 | | |
| 2.1.4 International students.....100.00 1 | | |
| 2.1.5 Brain gain.....84.54 8 | | |
| 2.2 Internal Openness.....84.30 6 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities.....79.31 8 | | |
| 2.2.2 Tolerance of immigrants.....95.77 2 | | |
| 2.2.3 Social mobility.....88.83 10 | | |
| Gender Equality | | |
| 2.2.4 Female graduates.....69.51 68 | | |
| 2.2.5 Gender earnings gap.....100.00 1 | | |
| 2.2.6 Leadership opportunities for women.....72.40 16 | | |

| | Score | Rank |
|---|-------|------|
| 3 GROW.....63.67 19 | | |
| 3.1 Formal Education.....33.86 51 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment.....51.10 18 | | |
| 3.1.2 Tertiary enrolment.....16.46 88 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure.....n/a n/a | | |
| 3.1.4 Reading, maths, and science.....67.88 31 | | |
| 3.1.5 University ranking.....0.00 76 | | |
| 3.2 Lifelong Learning.....73.67 19 | | |
| 3.2.1 Quality of management schools.....56.08 38 | | |
| 3.2.2 Prevalence of training in firms.....n/a n/a | | |
| 3.2.3 Employee development.....91.25 5 | | |
| 3.3 Access to Growth Opportunities.....83.47 10 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority.....76.26 14 | | |
| 3.3.2 Personal rights.....98.80 2 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks.....86.97 19 | | |
| 3.3.4 Use of virtual professional networks.....76.61 8 | | |
| 3.3.5 Collaboration within organisations.....75.70 17 | | |
| 3.3.6 Collaboration across organisations.....86.50 17 | | |
| 4 RETAIN.....84.81 8 | | |
| 4.1 Sustainability.....90.92 3 | | |
| 4.1.1 Pension system.....100.00 1 | | |
| 4.1.2 Social protection.....95.30 3 | | |
| 4.1.3 Brain retention.....77.45 11 | | |
| 4.2 Lifestyle.....78.70 28 | | |
| 4.2.1 Environmental performance.....92.35 20 | | |
| 4.2.2 Personal safety.....n/a n/a | | |
| 4.2.3 Physician density.....46.47 34 | | |
| 4.2.4 Sanitation.....97.27 35 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....64.39 17 | | |
| 5.1 Mid-Level Skills.....61.60 10 | | |
| 5.1.1 Workforce with secondary education.....27.22 65 | | |
| 5.1.2 Population with secondary education.....48.79 35 | | |
| 5.1.3 Technicians and associate professionals.....83.86 7 | | |
| 5.1.4 Labour productivity per employee.....86.52 3 | | |
| 5.2 Employability.....67.18 32 | | |
| 5.2.1 Ease of finding skilled employees.....53.80 49 | | |
| 5.2.2 Relevance of education system to the economy.....59.86 28 | | |
| 5.2.3 Skills matching with secondary education.....74.09 25 | | |
| 5.2.4 Skills matching with tertiary education.....80.97 26 | | |
| 6 GLOBAL KNOWLEDGE SKILLS.....50.77 18 | | |
| 6.1 High-Level Skills.....56.02 14 | | |
| 6.1.1 Workforce with tertiary education.....57.64 16 | | |
| 6.1.2 Population with tertiary education.....57.80 6 | | |
| 6.1.3 Professionals.....100.00 1 | | |
| 6.1.4 Researchers.....61.21 10 | | |
| 6.1.5 Senior officials and managers.....15.63 70 | | |
| 6.1.6 Availability of scientists and engineers.....43.82 52 | | |
| 6.2 Talent Impact.....45.53 23 | | |
| 6.2.1 Innovation output.....81.72 4 | | |
| 6.2.2 High-value exports.....12.81 56 | | |
| 6.2.3 New product entrepreneurial activity.....74.57 9 | | |
| 6.2.4 New business density.....35.23 18 | | |
| 6.2.5 Scientific journal articles.....23.33 55 | | |

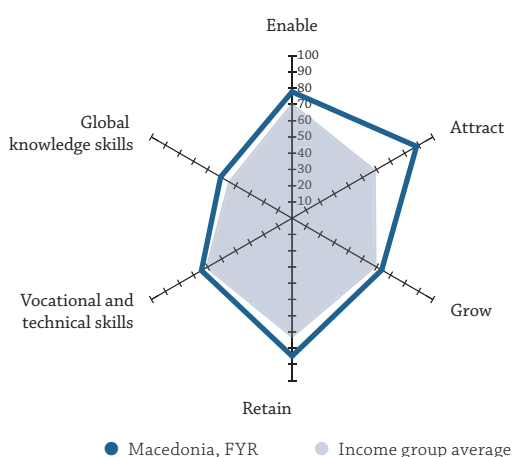
MACEDONIA, FYR

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 59 |
| Income group | Upper middle income |
| Regional group | Europe |
| Population (millions) | 2.08 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 13,907.90 |
| GDP (US\$ billions) | 10.09 |
| GTCI score | 43.08 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 55.99 | 45 |
| 1.1 Regulatory Landscape..... | 52.16 | 52 |
| 1.1.1 Government effectiveness | 45.50 | 61 |
| 1.1.2 Business-government relations | 69.98 | 29 |
| 1.1.3 Political stability | 58.98 | 74 |
| 1.1.4 Regulatory quality | 56.07 | 49 |
| 1.1.5 Corruption | 30.26 | 72 |
| 1.2 Market Landscape..... | 54.56 | 42 |
| 1.2.1 Competition intensity | 75.71 | 37 |
| 1.2.2 Ease of doing business | 90.18 | 9 |
| 1.2.3 Cluster development | 46.75 | 51 |
| 1.2.4 R&D expenditure | 10.05 | 62 |
| 1.2.5 ICT infrastructure | 60.85 | 57 |
| 1.2.6 Technology utilisation | 43.82 | 63 |
| 1.3 Business and Labour Landscape..... | 61.26 | 43 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 77.67 | 45 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 64.11 | 51 |
| 1.3.4 Labour-employer cooperation | 46.88 | 73 |
| Management Practice | | |
| 1.3.5 Professional management..... | 22.64 | 97 |
| 1.3.6 Relationship of pay to productivity..... | 56.23 | 45 |
| 2 ATTRACT..... | 38.90 | 80 |
| 2.1 External Openness | 27.42 | 89 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 41.78 | 81 |
| 2.1.2 Prevalence of foreign ownership | 49.63 | 82 |
| Attract People | | |
| 2.1.3 Migrant stock | 13.72 | 49 |
| 2.1.4 International students..... | 14.68 | 54 |
| 2.1.5 Brain gain..... | 17.27 | 111 |
| 2.2 Internal Openness..... | 50.38 | 58 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 34.48 | 75 |
| 2.2.2 Tolerance of immigrants..... | 45.07 | 81 |
| 2.2.3 Social mobility..... | 34.88 | 85 |
| Gender Equality | | |
| 2.2.4 Female graduates | 72.62 | 61 |
| 2.2.5 Gender earnings gap | 51.81 | 55 |
| 2.2.6 Leadership opportunities for women..... | 63.44 | 25 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 40.91 | 58 |
| 3.1 Formal Education..... | 24.28 | 73 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 48.78 | 20 |
| 3.1.2 Tertiary enrolment..... | 34.31 | 65 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | n/a | n/a |
| 3.1.4 Reading, maths, and science | 14.06 | 66 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 41.98 | 63 |
| 3.2.1 Quality of management schools..... | 36.24 | 79 |
| 3.2.2 Prevalence of training in firms | 57.39 | 28 |
| 3.2.3 Employee development..... | 32.32 | 76 |
| 3.3 Access to Growth Opportunities | 56.45 | 37 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 41.06 | 68 |
| 3.3.2 Personal rights..... | 48.17 | 75 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 78.48 | 36 |
| 3.3.4 Use of virtual professional networks..... | n/a | n/a |
| 3.3.5 Collaboration within organisations | 47.72 | 41 |
| 3.3.6 Collaboration across organisations | 66.82 | 71 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 53.89 | 56 |
| 4.1 Sustainability | 37.64 | 64 |
| 4.1.1 Pension system | 52.04 | 48 |
| 4.1.2 Social protection | 38.10 | 57 |
| 4.1.3 Brain retention | 22.78 | 99 |
| 4.2 Lifestyle | 70.15 | 47 |
| 4.2.1 Environmental performance..... | 76.37 | 48 |
| 4.2.2 Personal safety | 70.00 | 49 |
| 4.2.3 Physician density | 44.55 | 38 |
| 4.2.4 Sanitation | 89.66 | 62 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 43.67 | 60 |
| 5.1 Mid-Level Skills | 35.63 | 61 |
| 5.1.1 Workforce with secondary education | 47.44 | 19 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 38.12 | 56 |
| 5.1.4 Labour productivity per employee..... | 21.34 | 65 |
| 5.2 Employability..... | 51.70 | 72 |
| 5.2.1 Ease of finding skilled employees | 42.90 | 66 |
| 5.2.2 Relevance of education system to the economy | 41.11 | 61 |
| 5.2.3 Skills matching with secondary education..... | 61.94 | 64 |
| 5.2.4 Skills matching with tertiary education | 60.86 | 100 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 25.14 | 67 |
| 6.1 High-Level Skills | 29.75 | 55 |
| 6.1.1 Workforce with tertiary education | 35.22 | 50 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals..... | 41.62 | 38 |
| 6.1.4 Researchers..... | 10.27 | 52 |
| 6.1.5 Senior officials and managers | 28.13 | 48 |
| 6.1.6 Availability of scientists and engineers | 33.53 | 75 |
| 6.2 Talent Impact..... | 20.54 | 76 |
| 6.2.1 Innovation output..... | 30.58 | 62 |
| 6.2.2 High-value exports..... | 5.65 | 82 |
| 6.2.3 New product entrepreneurial activity | 19.11 | 79 |
| 6.2.4 New business density | 21.30 | 30 |
| 6.2.5 Scientific journal articles..... | 26.04 | 51 |

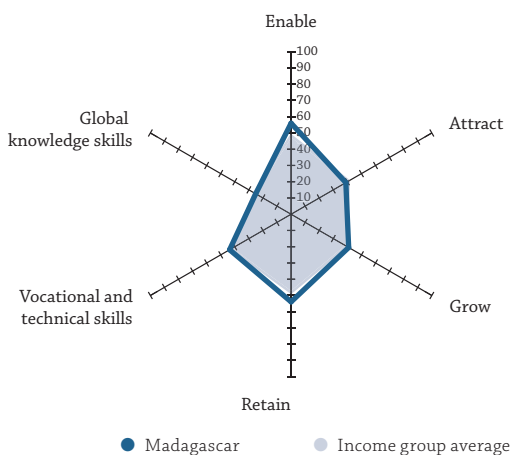
MADAGASCAR

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 118 |
| Income group | Low income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 24.24 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 1,459.27 |
| GDP (US\$ billions) | 9.98 |
| GTCI score..... | 22.76 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....27.95 116 | | |
| 1.1 Regulatory Landscape..... | 28.05 | 114 |
| 1.1.1 Government effectiveness | 9.00 | 118 |
| 1.1.2 Business-government relations | 34.66 | 107 |
| 1.1.3 Political stability | 54.13 | 81 |
| 1.1.4 Regulatory quality | 26.70 | 105 |
| 1.1.5 Corruption | 15.79 | 110 |
| 1.2 Market Landscape..... | 23.18 | 115 |
| 1.2.1 Competition intensity | 53.43 | 97 |
| 1.2.2 Ease of doing business | 21.87 | 116 |
| 1.2.3 Cluster development | 25.08 | 98 |
| 1.2.4 R&D expenditure | 0.23 | 101 |
| 1.2.5 ICT infrastructure | 2.46 | 116 |
| 1.2.6 Technology utilisation | 36.04 | 80 |
| 1.3 Business and Labour Landscape..... | 32.61 | 115 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 0.00 | 116 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 39.00 | 115 |
| 1.3.4 Labour-employer cooperation | 44.17 | 83 |
| Management Practice | | |
| 1.3.5 Professional management..... | 25.21 | 89 |
| 1.3.6 Relationship of pay to productivity..... | 27.27 | 99 |
| 2 ATTRACT.....36.75 89 | | |
| 2.1 External Openness | 26.48 | 95 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 33.42 | 99 |
| 2.1.2 Prevalence of foreign ownership | 49.38 | 83 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 0.13 | 116 |
| 2.1.4 International students..... | 9.09 | 67 |
| 2.1.5 Brain gain..... | 40.36 | 61 |
| 2.2 Internal Openness..... | 47.03 | 75 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 62.07 | 33 |
| 2.2.2 Tolerance of immigrants..... | 54.93 | 62 |
| 2.2.3 Social mobility..... | 26.43 | 105 |
| Gender Equality | | |
| 2.2.4 Female graduates | 44.65 | 90 |
| 2.2.5 Gender earnings gap | 65.06 | 22 |
| 2.2.6 Leadership opportunities for women..... | 29.03 | 82 |

| | Score | Rank |
|--|-------|------|
| 3 GROW.....21.60 113 | | |
| 3.1 Formal Education..... | 3.70 | 116 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 2.83 | 99 |
| 3.1.2 Tertiary enrolment..... | 3.52 | 108 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 8.44 | 89 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 26.91 | 106 |
| 3.2.1 Quality of management schools..... | 39.15 | 73 |
| 3.2.2 Prevalence of training in firms..... | 12.27 | 86 |
| 3.2.3 Employee development..... | 29.29 | 83 |
| 3.3 Access to Growth Opportunities | 34.21 | 105 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 26.26 | 98 |
| 3.3.2 Personal rights..... | 41.16 | 83 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 44.55 | 108 |
| 3.3.4 Use of virtual professional networks..... | 0.33 | 112 |
| 3.3.5 Collaboration within organisations | 31.84 | 80 |
| 3.3.6 Collaboration across organisations | 61.11 | 89 |
| 4 RETAIN.....13.15 119 | | |
| 4.1 Sustainability | 12.08 | 114 |
| 4.1.1 Pension system | 3.37 | 96 |
| 4.1.2 Social protection | 4.40 | 116 |
| 4.1.3 Brain retention | 28.47 | 91 |
| 4.2 Lifestyle..... | 14.21 | 119 |
| 4.2.1 Environmental performance..... | 0.00 | 119 |
| 4.2.2 Personal safety | 54.92 | 82 |
| 4.2.3 Physician density | 1.92 | 102 |
| 4.2.4 Sanitation | 0.00 | 118 |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....29.02 107 | | |
| 5.1 Mid-Level Skills | 10.73 | 104 |
| 5.1.1 Workforce with secondary education | 28.98 | 62 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 3.14 | 107 |
| 5.1.4 Labour productivity per employee..... | 0.06 | 101 |
| 5.2 Employability..... | 47.32 | 82 |
| 5.2.1 Ease of finding skilled employees | 48.51 | 57 |
| 5.2.2 Relevance of education system to the economy | 21.88 | 102 |
| 5.2.3 Skills matching with secondary education..... | 52.22 | 100 |
| 5.2.4 Skills matching with tertiary education | 66.67 | 79 |
| 6 GLOBAL KNOWLEDGE SKILLS8.06 112 | | |
| 6.1 High-Level Skills | 9.11 | 111 |
| 6.1.1 Workforce with tertiary education | 6.71 | 98 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals..... | 3.47 | 103 |
| 6.1.4 Researchers..... | 0.47 | 89 |
| 6.1.5 Senior officials and managers | 3.75 | 101 |
| 6.1.6 Availability of scientists and engineers | 31.18 | 84 |
| 6.2 Talent Impact..... | 7.02 | 111 |
| 6.2.1 Innovation output..... | 18.63 | 91 |
| 6.2.2 High-value exports..... | 0.38 | 107 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 3.89 | 76 |
| 6.2.5 Scientific journal articles..... | 5.17 | 91 |

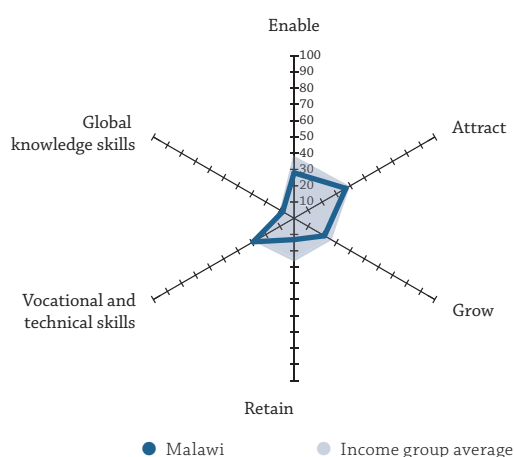
MALAWI

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 110 |
| Income group | Low income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 17.22 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 1,182.62 |
| GDP (US\$ billions) | 6.57 |
| GTCI score..... | 26.24 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 35.58 | 106 |
| 1.1 Regulatory Landscape..... | 37.80 | 93 |
| 1.1.1 Government effectiveness | 24.94 | 102 |
| 1.1.2 Business-government relations | 54.30 | 69 |
| 1.1.3 Political stability | 62.14 | 64 |
| 1.1.4 Regulatory quality..... | 25.24 | 109 |
| 1.1.5 Corruption | 22.37 | 92 |
| 1.2 Market Landscape..... | 23.11 | 116 |
| 1.2.1 Competition intensity | 52.86 | 100 |
| 1.2.2 Ease of doing business | 39.19 | 105 |
| 1.2.3 Cluster development | 16.72 | 114 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 1.50 | 118 |
| 1.2.6 Technology utilisation..... | 5.30 | 114 |
| 1.3 Business and Labour Landscape..... | 45.84 | 95 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 33.33 | 101 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 39.90 | 114 |
| 1.3.4 Labour-employer cooperation | 42.01 | 88 |
| Management Practice | | |
| 1.3.5 Professional management..... | 48.14 | 49 |
| 1.3.6 Relationship of pay to productivity..... | 31.65 | 92 |
| 2 ATTRACT..... | 32.98 | 104 |
| 2.1 External Openness | 25.37 | 100 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 20.37 | 114 |
| 2.1.2 Prevalence of foreign ownership | 64.94 | 44 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 2.60 | 90 |
| 2.1.4 International students..... | 5.80 | 72 |
| 2.1.5 Brain gain..... | 33.13 | 81 |
| 2.2 Internal Openness..... | 40.59 | 95 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 52.87 | 46 |
| 2.2.2 Tolerance of immigrants..... | 40.85 | 87 |
| 2.2.3 Social mobility..... | 35.42 | 83 |
| Gender Equality | | |
| 2.2.4 Female graduates | 15.36 | 98 |
| 2.2.5 Gender earnings gap | 71.08 | 14 |
| 2.2.6 Leadership opportunities for women..... | 27.96 | 83 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 27.06 | 101 |
| 3.1 Formal Education..... | 10.83 | 108 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 0.00 | 113 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 32.48 | 27 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 30.14 | 97 |
| 3.2.1 Quality of management schools..... | 11.11 | 115 |
| 3.2.2 Prevalence of training in firms..... | 38.92 | 47 |
| 3.2.3 Employee development..... | 40.40 | 58 |
| 3.3 Access to Growth Opportunities | 40.22 | 94 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 43.30 | 64 |
| 3.3.2 Personal rights..... | 79.42 | 31 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 32.42 | 115 |
| 3.3.4 Use of virtual professional networks..... | 0.94 | 109 |
| 3.3.5 Collaboration within organisations | 27.46 | 88 |
| 3.3.6 Collaboration across organisations | 57.77 | 99 |
| 4 RETAIN..... | 26.51 | 111 |
| 4.1 Sustainability | 24.82 | 99 |
| 4.1.1 Pension system | n/a | n/a |
| 4.1.2 Social protection | 14.33 | 106 |
| 4.1.3 Brain retention | 35.31 | 78 |
| 4.2 Lifestyle..... | 28.21 | 109 |
| 4.2.1 Environmental performance..... | 23.50 | 113 |
| 4.2.2 Personal safety | 56.38 | 78 |
| 4.2.3 Physician density | 0.00 | 112 |
| 4.2.4 Sanitation | 32.95 | 106 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 22.12 | 115 |
| 5.1 Mid-Level Skills | 2.37 | 118 |
| 5.1.1 Workforce with secondary education | 7.10 | 99 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 0.00 | 109 |
| 5.1.4 Labour productivity per employee..... | 0.00 | 102 |
| 5.2 Employability..... | 41.88 | 103 |
| 5.2.1 Ease of finding skilled employees | 31.68 | 90 |
| 5.2.2 Relevance of education system to the economy | 29.81 | 88 |
| 5.2.3 Skills matching with secondary education..... | 41.70 | 115 |
| 5.2.4 Skills matching with tertiary education | 64.35 | 83 |
| 6 GLOBAL KNOWLEDGE SKILLS | 13.16 | 98 |
| 6.1 High-Level Skills | 7.88 | 112 |
| 6.1.1 Workforce with tertiary education | 3.92 | 101 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals..... | 6.07 | 100 |
| 6.1.4 Researchers..... | 0.45 | 90 |
| 6.1.5 Senior officials and managers | 2.50 | 103 |
| 6.1.6 Availability of scientists and engineers | 26.47 | 91 |
| 6.2 Talent Impact..... | 18.43 | 79 |
| 6.2.1 Innovation output..... | 12.83 | 106 |
| 6.2.2 High-value exports..... | 4.14 | 89 |
| 6.2.3 New product entrepreneurial activity | 58.13 | 22 |
| 6.2.4 New business density | 0.29 | 92 |
| 6.2.5 Scientific journal articles..... | 16.76 | 63 |

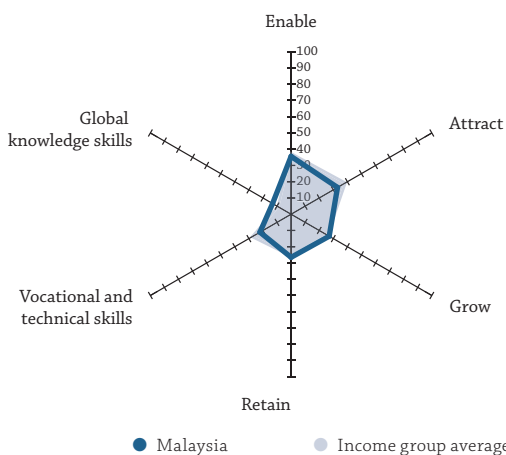
MALAYSIA

Key Indicators

| | |
|----------------------------|--|
| Rank (out of 119)..... | 27 |
| Income group..... | Upper middle income |
| Regional group..... | East, Southeastern Asia and Oceania |
| Population (millions)..... | 30.33 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 26,891.40 |
| GDP (US\$ billions)..... | 296.22 |
| GTCI score..... | 58.51 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 74.17 | 22 |
| 1.1 Regulatory Landscape..... | 66.21 | 31 |
| 1.1.1 Government effectiveness..... | 66.84 | 35 |
| 1.1.2 Business-government relations..... | 85.87 | 12 |
| 1.1.3 Political stability..... | 68.45 | 52 |
| 1.1.4 Regulatory quality..... | 63.83 | 38 |
| 1.1.5 Corruption..... | 46.05 | 45 |
| 1.2 Market Landscape..... | 69.65 | 24 |
| 1.2.1 Competition intensity..... | 75.71 | 37 |
| 1.2.2 Ease of doing business..... | 83.41 | 21 |
| 1.2.3 Cluster development..... | 87.93 | 11 |
| 1.2.4 R&D expenditure..... | 29.21 | 28 |
| 1.2.5 ICT infrastructure..... | 64.26 | 54 |
| 1.2.6 Technology utilisation..... | 77.39 | 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..... | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 86.84 | 7 |
| 1.3.4 Labour-employer cooperation..... | 75.88 | 15 |
| Management Practice | | |
| 1.3.5 Professional management..... | 77.94 | 19 |
| 1.3.6 Relationship of pay to productivity..... | 89.23 | 5 |
| 2 ATTRACT..... | 58.55 | 23 |
| 2.1 External Openness..... | 56.82 | 18 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 75.98 | 8 |
| 2.1.2 Prevalence of foreign ownership..... | 75.31 | 26 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 18.14 | 43 |
| 2.1.4 International students..... | 38.35 | 24 |
| 2.1.5 Brain gain..... | 76.31 | 10 |
| 2.2 Internal Openness..... | 60.28 | 30 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 43.68 | 61 |
| 2.2.2 Tolerance of immigrants..... | 32.39 | 99 |
| 2.2.3 Social mobility..... | 70.30 | 26 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 77.93 | 50 |
| 2.2.5 Gender earnings gap..... | 57.83 | 38 |
| 2.2.6 Leadership opportunities for women..... | 79.57 | 12 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 53.00 | 32 |
| 3.1 Formal Education..... | 33.95 | 50 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 17.91 | 61 |
| 3.1.2 Tertiary enrolment..... | 22.35 | 83 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 32.48 | 27 |
| 3.1.4 Reading, maths, and science..... | 47.44 | 42 |
| 3.1.5 University ranking..... | 49.58 | 27 |
| 3.2 Lifelong Learning..... | 60.01 | 29 |
| 3.2.1 Quality of management schools..... | 72.22 | 24 |
| 3.2.2 Prevalence of training in firms..... | 19.92 | 77 |
| 3.2.3 Employee development..... | 87.88 | 9 |
| 3.3 Access to Growth Opportunities..... | 65.05 | 25 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 74.86 | 16 |
| 3.3.2 Personal rights..... | 29.66 | 95 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 84.24 | 23 |
| 3.3.4 Use of virtual professional networks..... | 21.03 | 46 |
| 3.3.5 Collaboration within organisations..... | 80.50 | 11 |
| 3.3.6 Collaboration across organisations..... | 100.00 | 1 |
| 4 RETAIN..... | 65.43 | 34 |
| 4.1 Sustainability..... | 67.34 | 23 |
| 4.1.1 Pension system..... | 47.96 | 50 |
| 4.1.2 Social protection..... | 72.28 | 20 |
| 4.1.3 Brain retention..... | 81.78 | 8 |
| 4.2 Lifestyle..... | 63.52 | 59 |
| 4.2.1 Environmental performance..... | 69.30 | 58 |
| 4.2.2 Personal safety..... | 69.12 | 52 |
| 4.2.3 Physician density..... | 20.19 | 75 |
| 4.2.4 Sanitation..... | 95.45 | 46 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 62.90 | 21 |
| 5.1 Mid-Level Skills..... | 41.45 | 49 |
| 5.1.1 Workforce with secondary education..... | 36.51 | 37 |
| 5.1.2 Population with secondary education..... | 49.07 | 34 |
| 5.1.3 Technicians and associate professionals..... | 43.95 | 48 |
| 5.1.4 Labour productivity per employee..... | 36.26 | 44 |
| 5.2 Employability..... | 84.35 | 10 |
| 5.2.1 Ease of finding skilled employees..... | 84.82 | 10 |
| 5.2.2 Relevance of education system to the economy..... | 78.85 | 12 |
| 5.2.3 Skills matching with secondary education..... | 84.86 | 6 |
| 5.2.4 Skills matching with tertiary education..... | 88.89 | 12 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 37.03 | 39 |
| 6.1 High-Level Skills..... | 37.34 | 40 |
| 6.1.1 Workforce with tertiary education..... | 33.06 | 55 |
| 6.1.2 Population with tertiary education..... | 27.10 | 49 |
| 6.1.3 Professionals..... | 27.46 | 59 |
| 6.1.4 Researchers..... | 27.29 | 33 |
| 6.1.5 Senior officials and managers..... | 30.63 | 45 |
| 6.1.6 Availability of scientists and engineers..... | 78.53 | 7 |
| 6.2 Talent Impact..... | 36.73 | 40 |
| 6.2.1 Innovation output..... | 44.99 | 38 |
| 6.2.2 High-value exports..... | 80.60 | 3 |
| 6.2.3 New product entrepreneurial activity..... | 0.00 | 89 |
| 6.2.4 New business density..... | 13.58 | 41 |
| 6.2.5 Scientific journal articles..... | 44.46 | 37 |

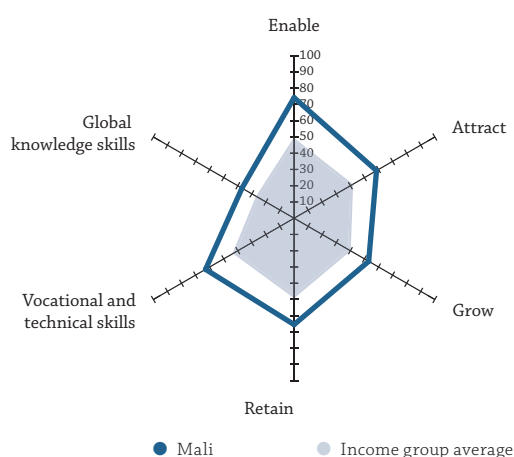
MALI

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 113 |
| Income group | Low income |
| Regional group | Sub-Saharan Africa |
| Population (millions) | 17.60 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 2,428.29 |
| GDP (US\$ billions) | 13.10 |
| GTCI score | 24.66 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 33.99 | 109 |
| 1.1 Regulatory Landscape..... | 29.70 | 108 |
| 1.1.1 Government effectiveness | 18.77 | 113 |
| 1.1.2 Business-government relations | 51.21 | 71 |
| 1.1.3 Political stability | 23.54 | 115 |
| 1.1.4 Regulatory quality | 31.31 | 101 |
| 1.1.5 Corruption | 23.68 | 89 |
| 1.2 Market Landscape | 30.12 | 106 |
| 1.2.1 Competition intensity | 48.57 | 107 |
| 1.2.2 Ease of doing business | 36.52 | 108 |
| 1.2.3 Cluster development | 34.67 | 83 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 8.59 | 111 |
| 1.2.6 Technology utilisation | 22.26 | 102 |
| 1.3 Business and Labour Landscape..... | 42.14 | 101 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 44.33 | 94 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 65.54 | 46 |
| 1.3.4 Labour-employer cooperation | 46.34 | 75 |
| Management Practice | | |
| 1.3.5 Professional management..... | 15.76 | 107 |
| 1.3.6 Relationship of pay to productivity..... | 20.88 | 107 |
| 2 ATTRACT..... | 33.46 | 101 |
| 2.1 External Openness | 22.78 | 104 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 34.99 | 97 |
| 2.1.2 Prevalence of foreign ownership | 32.35 | 106 |
| Attract People | | |
| 2.1.3 Migrant stock | 4.39 | 78 |
| 2.1.4 International students..... | 2.61 | 79 |
| 2.1.5 Brain gain | 39.56 | 62 |
| 2.2 Internal Openness | 44.13 | 82 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 27.59 | 88 |
| 2.2.2 Tolerance of immigrants..... | 90.14 | 10 |
| 2.2.3 Social mobility..... | 42.78 | 65 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 36.14 | 94 |
| 2.2.6 Leadership opportunities for women..... | 24.01 | 91 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 23.60 | 109 |
| 3.1 Formal Education..... | 11.03 | 106 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 20.85 | 55 |
| 3.1.2 Tertiary enrolment..... | 5.37 | 106 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 17.90 | 71 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 26.01 | 109 |
| 3.2.1 Quality of management schools..... | 34.92 | 82 |
| 3.2.2 Prevalence of training in firms..... | 18.87 | 80 |
| 3.2.3 Employee development..... | 24.24 | 98 |
| 3.3 Access to Growth Opportunities | 33.76 | 106 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 25.14 | 99 |
| 3.3.2 Personal rights..... | 48.75 | 73 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 27.58 | 117 |
| 3.3.4 Use of virtual professional networks..... | 1.27 | 106 |
| 3.3.5 Collaboration within organisations | 32.62 | 78 |
| 3.3.6 Collaboration across organisations | 67.18 | 69 |
| 4 RETAIN..... | 22.22 | 114 |
| 4.1 Sustainability | 25.10 | 97 |
| 4.1.1 Pension system | 5.10 | 93 |
| 4.1.2 Social protection | 29.66 | 76 |
| 4.1.3 Brain retention | 40.55 | 66 |
| 4.2 Lifestyle | 19.34 | 117 |
| 4.2.1 Environmental performance..... | 8.17 | 118 |
| 4.2.2 Personal safety | 53.63 | 83 |
| 4.2.3 Physician density | 1.12 | 105 |
| 4.2.4 Sanitation | 14.43 | 113 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 28.61 | 108 |
| 5.1 Mid-Level Skills | 4.41 | 112 |
| 5.1.1 Workforce with secondary education | 2.28 | 105 |
| 5.1.2 Population with secondary education | 5.56 | 96 |
| 5.1.3 Technicians and associate professionals | 7.62 | 98 |
| 5.1.4 Labour productivity per employee..... | 2.19 | 96 |
| 5.2 Employability..... | 52.80 | 66 |
| 5.2.1 Ease of finding skilled employees | 52.15 | 51 |
| 5.2.2 Relevance of education system to the economy | 29.57 | 90 |
| 5.2.3 Skills matching with secondary education..... | 65.69 | 49 |
| 5.2.4 Skills matching with tertiary education | 63.79 | 86 |
| 6 GLOBAL KNOWLEDGE SKILLS | 6.09 | 117 |
| 6.1 High-Level Skills | 5.63 | 116 |
| 6.1.1 Workforce with tertiary education | 2.24 | 104 |
| 6.1.2 Population with tertiary education | 2.57 | 98 |
| 6.1.3 Professionals..... | 2.31 | 105 |
| 6.1.4 Researchers..... | 0.20 | 98 |
| 6.1.5 Senior officials and managers | 0.00 | 110 |
| 6.1.6 Availability of scientists and engineers | 26.47 | 91 |
| 6.2 Talent Impact..... | 6.55 | 113 |
| 6.2.1 Innovation output..... | 13.88 | 103 |
| 6.2.2 High-value exports..... | 2.26 | 96 |
| 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..... | 3.51 | 100 |

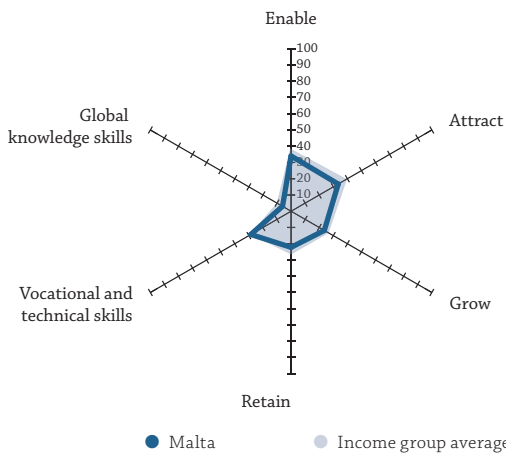
MALTA

Key Indicators

| | |
|----------------------------|--------------------|
| Rank (out of 119)..... | 26 |
| Income group..... | High income |
| Regional group..... | Europe |
| Population (millions)..... | 0.43 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 29,525.70 |
| GDP (US\$ billions)..... | 9.64 |
| GTCI score..... | 58.77 |
| GTCI score (income group average)..... | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 67.15 | 27 |
| 1.1 Regulatory Landscape..... | 70.02 | 26 |
| 1.1.1 Government effectiveness..... | 64.01 | 36 |
| 1.1.2 Business-government relations..... | 69.54 | 30 |
| 1.1.3 Political stability..... | 89.08 | 10 |
| 1.1.4 Regulatory quality..... | 73.54 | 24 |
| 1.1.5 Corruption..... | 53.95 | 37 |
| 1.2 Market Landscape..... | 64.04 | 31 |
| 1.2.1 Competition intensity..... | 93.14 | 2 |
| 1.2.2 Ease of doing business..... | 58.99 | 69 |
| 1.2.3 Cluster development..... | 58.20 | 34 |
| 1.2.4 R&D expenditure..... | 19.63 | 38 |
| 1.2.5 ICT infrastructure..... | 84.31 | 21 |
| 1.2.6 Technology utilisation..... | 69.96 | 30 |
| 1.3 Business and Labour Landscape..... | 67.38 | 32 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 72.33 | 48 |
| 1.3.2 Ease of redundancy..... | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 79.17 | 17 |
| 1.3.4 Labour-employer cooperation..... | 64.50 | 30 |
| Management Practice | | |
| 1.3.5 Professional management..... | 48.71 | 46 |
| 1.3.6 Relationship of pay to productivity..... | 59.60 | 39 |
| 2 ATTRACT..... | 54.95 | 26 |
| 2.1 External Openness..... | 50.80 | 29 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 69.19 | 19 |
| 2.1.2 Prevalence of foreign ownership..... | 68.40 | 42 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 21.69 | 38 |
| 2.1.4 International students..... | 32.29 | 29 |
| 2.1.5 Brain gain..... | 62.45 | 20 |
| 2.2 Internal Openness..... | 59.10 | 35 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 70.11 | 17 |
| 2.2.2 Tolerance of immigrants..... | 61.97 | 49 |
| 2.2.3 Social mobility..... | 73.30 | 23 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 69.22 | 69 |
| 2.2.5 Gender earnings gap..... | 33.73 | 96 |
| 2.2.6 Leadership opportunities for women..... | 46.24 | 54 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 52.42 | 33 |
| 3.1 Formal Education..... | 30.01 | 63 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 12.13 | 75 |
| 3.1.2 Tertiary enrolment..... | 40.83 | 55 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 38.62 | 16 |
| 3.1.4 Reading, maths, and science..... | 58.48 | 37 |
| 3.1.5 University ranking..... | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 59.63 | 30 |
| 3.2.1 Quality of management schools..... | 62.70 | 30 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 56.57 | 34 |
| 3.3 Access to Growth Opportunities..... | 67.60 | 21 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 50.28 | 41 |
| 3.3.2 Personal rights..... | 83.34 | 24 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 84.55 | 22 |
| 3.3.4 Use of virtual professional networks..... | 81.93 | 5 |
| 3.3.5 Collaboration within organisations..... | 41.22 | 53 |
| 3.3.6 Collaboration across organisations..... | 64.29 | 81 |
| 4 RETAIN..... | 74.04 | 22 |
| 4.1 Sustainability..... | 62.00 | 29 |
| 4.1.1 Pension system..... | n/a | n/a |
| 4.1.2 Social protection..... | 62.72 | 27 |
| 4.1.3 Brain retention..... | 61.28 | 29 |
| 4.2 Lifestyle..... | 86.08 | 10 |
| 4.2.1 Environmental performance..... | 95.89 | 9 |
| 4.2.2 Personal safety..... | n/a | n/a |
| 4.2.3 Physician density..... | 62.34 | 13 |
| 4.2.4 Sanitation..... | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 53.93 | 33 |
| 5.1 Mid-Level Skills..... | 40.02 | 52 |
| 5.1.1 Workforce with secondary education..... | 27.39 | 64 |
| 5.1.2 Population with secondary education..... | 18.12 | 90 |
| 5.1.3 Technicians and associate professionals..... | 65.02 | 19 |
| 5.1.4 Labour productivity per employee..... | 49.56 | 27 |
| 5.2 Employability..... | 67.83 | 28 |
| 5.2.1 Ease of finding skilled employees..... | 50.17 | 54 |
| 5.2.2 Relevance of education system to the economy..... | 68.51 | 19 |
| 5.2.3 Skills matching with secondary education..... | 72.65 | 26 |
| 5.2.4 Skills matching with tertiary education..... | 80.00 | 28 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 50.17 | 19 |
| 6.1 High-Level Skills..... | 36.74 | 42 |
| 6.1.1 Workforce with tertiary education..... | 35.23 | 49 |
| 6.1.2 Population with tertiary education..... | 19.73 | 68 |
| 6.1.3 Professionals..... | 45.66 | 36 |
| 6.1.4 Researchers..... | 23.52 | 39 |
| 6.1.5 Senior officials and managers..... | 56.88 | 14 |
| 6.1.6 Availability of scientists and engineers..... | 39.41 | 63 |
| 6.2 Talent Impact..... | 63.61 | 1 |
| 6.2.1 Innovation output..... | 65.73 | 15 |
| 6.2.2 High-value exports..... | 60.08 | 5 |
| 6.2.3 New product entrepreneurial activity..... | n/a | n/a |
| 6.2.4 New business density..... | 100.00 | 1 |
| 6.2.5 Scientific journal articles..... | 28.63 | 48 |

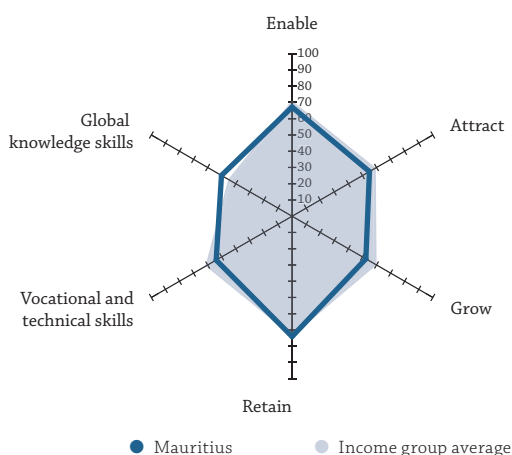
MAURITIUS

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 46 |
| Income group | Upper middle income |
| Regional group | Sub-Saharan Africa |
| Population (millions) | 1.26 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 19,480.50 |
| GDP (US\$ billions) | 11.51 |
| GTCI score | 46.79 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 61.66 | 33 |
| 1.1 Regulatory Landscape..... | 71.32 | 24 |
| 1.1.1 Government effectiveness | 68.89 | 30 |
| 1.1.2 Business-government relations | 76.60 | 19 |
| 1.1.3 Political stability | 86.89 | 19 |
| 1.1.4 Regulatory quality | 71.60 | 28 |
| 1.1.5 Corruption | 52.63 | 40 |
| 1.2 Market Landscape..... | 52.23 | 46 |
| 1.2.1 Competition intensity | 73.43 | 45 |
| 1.2.2 Ease of doing business | 72.52 | 46 |
| 1.2.3 Cluster development | 56.04 | 38 |
| 1.2.4 R&D expenditure | 3.97 | 83 |
| 1.2.5 ICT infrastructure | 55.12 | 64 |
| 1.2.6 Technology utilisation | 52.30 | 47 |
| 1.3 Business and Labour Landscape..... | 61.43 | 41 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 68.63 | 35 |
| 1.3.4 Labour-employer cooperation | 60.98 | 33 |
| Management Practice | | |
| 1.3.5 Professional management..... | 48.42 | 47 |
| 1.3.6 Relationship of pay to productivity..... | 54.88 | 47 |
| 2 ATTRACT..... | 51.25 | 33 |
| 2.1 External Openness | 39.26 | 50 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 53.26 | 57 |
| 2.1.2 Prevalence of foreign ownership | 62.96 | 49 |
| Attract People | | |
| 2.1.3 Migrant stock | 4.81 | 76 |
| 2.1.4 International students..... | 20.85 | 47 |
| 2.1.5 Brain gain | 54.42 | 30 |
| 2.2 Internal Openness | 63.24 | 24 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 71.26 | 15 |
| 2.2.2 Tolerance of immigrants..... | 88.73 | 12 |
| 2.2.3 Social mobility..... | 54.50 | 38 |
| Gender Equality | | |
| 2.2.4 Female graduates | 94.93 | 8 |
| 2.2.5 Gender earnings gap | 31.33 | 100 |
| 2.2.6 Leadership opportunities for women..... | 38.71 | 66 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 38.55 | 64 |
| 3.1 Formal Education..... | 14.10 | 98 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 18.28 | 60 |
| 3.1.2 Tertiary enrolment..... | 31.72 | 70 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 6.39 | 96 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 48.18 | 48 |
| 3.2.1 Quality of management schools..... | 53.97 | 41 |
| 3.2.2 Prevalence of training in firms..... | 29.29 | 62 |
| 3.2.3 Employee development..... | 61.28 | 29 |
| 3.3 Access to Growth Opportunities | 53.38 | 45 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 49.72 | 42 |
| 3.3.2 Personal rights..... | 61.20 | 61 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 67.88 | 71 |
| 3.3.4 Use of virtual professional networks..... | 29.61 | 32 |
| 3.3.5 Collaboration within organisations | 43.05 | 47 |
| 3.3.6 Collaboration across organisations | 68.80 | 61 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 63.29 | 37 |
| 4.1 Sustainability | 47.97 | 43 |
| 4.1.1 Pension system | 52.04 | 48 |
| 4.1.2 Social protection | 43.58 | 42 |
| 4.1.3 Brain retention | 48.29 | 43 |
| 4.2 Lifestyle | 78.62 | 30 |
| 4.2.1 Environmental performance..... | 62.99 | 68 |
| 4.2.2 Personal safety | 80.70 | 33 |
| 4.2.3 Physician density | n/a | n/a |
| 4.2.4 Sanitation | 92.16 | 57 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 49.02 | 46 |
| 5.1 Mid-Level Skills | 40.91 | 51 |
| 5.1.1 Workforce with secondary education | 34.52 | 45 |
| 5.1.2 Population with secondary education | 43.37 | 43 |
| 5.1.3 Technicians and associate professionals | 44.84 | 47 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 57.12 | 52 |
| 5.2.1 Ease of finding skilled employees | 40.26 | 70 |
| 5.2.2 Relevance of education system to the economy | 53.61 | 43 |
| 5.2.3 Skills matching with secondary education..... | 64.24 | 56 |
| 5.2.4 Skills matching with tertiary education | 70.38 | 62 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 16.97 | 91 |
| 6.1 High-Level Skills | 18.73 | 84 |
| 6.1.1 Workforce with tertiary education | 15.90 | 87 |
| 6.1.2 Population with tertiary education | 7.89 | 86 |
| 6.1.3 Professionals | 25.14 | 65 |
| 6.1.4 Researchers | 2.05 | 78 |
| 6.1.5 Senior officials and managers | 28.75 | 47 |
| 6.1.6 Availability of scientists and engineers | 32.65 | 79 |
| 6.2 Talent Impact..... | 15.22 | 88 |
| 6.2.1 Innovation output..... | 23.90 | 81 |
| 6.2.2 High-value exports..... | 0.19 | 109 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 29.66 | 22 |
| 6.2.5 Scientific journal articles..... | 7.13 | 84 |

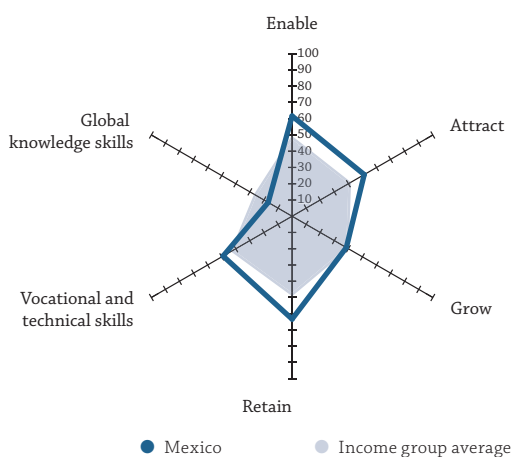
MEXICO

Key Indicators

Rank (out of 119)..... **71**
 Income group..... **Upper middle income**
 Regional group..... **Latin, Central America and Caribbean**
 Population (millions)..... **127.02**

GDP per capita (PPP US\$) **17,276.60**
 GDP (US\$ billions) **1,144.33**
 GTCI score..... **39.08**
 GTCI score (income group average) **40.93**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|---|-------|------|
| 1 ENABLE..... 48.48 69 | | |
| 1.1 Regulatory Landscape..... 46.48 68 | | |
| 1.1.1 Government effectiveness 47.56 57 | | |
| 1.1.2 Business-government relations 66.23 36 | | |
| 1.1.3 Political stability 42.72 97 | | |
| 1.1.4 Regulatory quality 54.85 52 | | |
| 1.1.5 Corruption 21.05 95 | | |
| 1.2 Market Landscape 51.23 52 | | |
| 1.2.1 Competition intensity 71.14 54 | | |
| 1.2.2 Ease of doing business 72.56 44 | | |
| 1.2.3 Cluster development 58.82 32 | | |
| 1.2.4 R&D expenditure 12.38 55 | | |
| 1.2.5 ICT infrastructure 45.84 76 | | |
| 1.2.6 Technology utilisation 46.64 57 | | |
| 1.3 Business and Labour Landscape..... 47.72 87 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring 66.67 51 | | |
| 1.3.2 Ease of redundancy 30.00 114 | | |
| 1.3.3 Active labour market policies..... 54.24 78 | | |
| 1.3.4 Labour-employer cooperation 55.01 47 | | |
| Management Practice | | |
| 1.3.5 Professional management..... 40.97 66 | | |
| 1.3.6 Relationship of pay to productivity..... 39.39 72 | | |
| 2 ATTRACT..... 38.74 82 | | |
| 2.1 External Openness 38.66 56 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... 67.62 21 | | |
| 2.1.2 Prevalence of foreign ownership 78.27 21 | | |
| Attract People | | |
| 2.1.3 Migrant stock..... 1.92 93 | | |
| 2.1.4 International students..... 1.10 89 | | |
| 2.1.5 Brain gain..... 44.38 53 | | |
| 2.2 Internal Openness..... 38.81 101 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... 41.38 65 | | |
| 2.2.2 Tolerance of immigrants..... 50.70 73 | | |
| 2.2.3 Social mobility..... 34.88 85 | | |
| Gender Equality | | |
| 2.2.4 Female graduates 63.54 74 | | |
| 2.2.5 Gender earnings gap 37.35 89 | | |
| 2.2.6 Leadership opportunities for women..... 5.02 114 | | |

| | Score | Rank |
|--|-------|------|
| 3 GROW..... 43.90 49 | | |
| 3.1 Formal Education..... 31.58 56 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment 26.71 45 | | |
| 3.1.2 Tertiary enrolment..... 25.77 77 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... 24.55 53 | | |
| 3.1.4 Reading, maths, and science 36.05 54 | | |
| 3.1.5 University ranking 44.83 32 | | |
| 3.2 Lifelong Learning..... 48.12 50 | | |
| 3.2.1 Quality of management schools..... 44.44 57 | | |
| 3.2.2 Prevalence of training in firms..... 62.53 24 | | |
| 3.2.3 Employee development..... 37.37 64 | | |
| 3.3 Access to Growth Opportunities 51.99 48 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority..... 45.81 55 | | |
| 3.3.2 Personal rights..... 71.20 43 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... 65.15 77 | | |
| 3.3.4 Use of virtual professional networks..... 18.05 54 | | |
| 3.3.5 Collaboration within organisations 36.62 67 | | |
| 3.3.6 Collaboration across organisations 75.14 34 | | |
| 4 RETAIN..... 42.53 77 | | |
| 4.1 Sustainability 31.14 76 | | |
| 4.1.1 Pension system 25.51 67 | | |
| 4.1.2 Social protection 25.54 84 | | |
| 4.1.3 Brain retention 42.37 58 | | |
| 4.2 Lifestyle 53.93 80 | | |
| 4.2.1 Environmental performance..... 68.10 62 | | |
| 4.2.2 Personal safety 31.58 110 | | |
| 4.2.3 Physician density 32.85 55 | | |
| 4.2.4 Sanitation 83.18 72 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... 37.95 81 | | |
| 5.1 Mid-Level Skills 22.89 86 | | |
| 5.1.1 Workforce with secondary education 18.93 79 | | |
| 5.1.2 Population with secondary education 24.11 74 | | |
| 5.1.3 Technicians and associate professionals n/a n/a | | |
| 5.1.4 Labour productivity per employee..... 25.65 57 | | |
| 5.2 Employability..... 53.01 65 | | |
| 5.2.1 Ease of finding skilled employees 54.79 46 | | |
| 5.2.2 Relevance of education system to the economy 23.32 100 | | |
| 5.2.3 Skills matching with secondary education..... 61.68 66 | | |
| 5.2.4 Skills matching with tertiary education 72.25 54 | | |
| 6 GLOBAL KNOWLEDGE SKILLS 22.87 72 | | |
| 6.1 High-Level Skills 23.28 74 | | |
| 6.1.1 Workforce with tertiary education 23.34 75 | | |
| 6.1.2 Population with tertiary education 23.16 58 | | |
| 6.1.3 Professionals..... n/a n/a | | |
| 6.1.4 Researchers..... 2.78 72 | | |
| 6.1.5 Senior officials and managers n/a n/a | | |
| 6.1.6 Availability of scientists and engineers 43.82 52 | | |
| 6.2 Talent Impact..... 22.45 70 | | |
| 6.2.1 Innovation output..... 31.99 59 | | |
| 6.2.2 High-value exports..... 27.68 25 | | |
| 6.2.3 New product entrepreneurial activity 35.98 61 | | |
| 6.2.4 New business density 5.28 70 | | |
| 6.2.5 Scientific journal articles..... 11.34 75 | | |

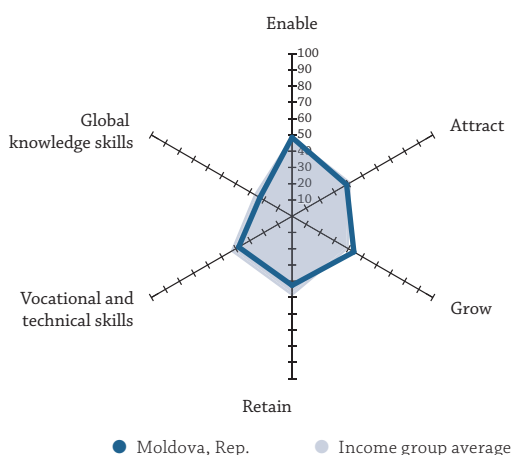
MOLDOVA, REP.

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 86 |
| Income group | Lower middle income |
| Regional group | Europe |
| Population (millions) | 3.55 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 5,038.50 |
| GDP (US\$ billions) | 6.55 |
| GTCI score | 35.78 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 39.23 | 96 |
| 1.1 Regulatory Landscape..... | 37.05 | 95 |
| 1.1.1 Government effectiveness | 25.96 | 98 |
| 1.1.2 Business-government relations | 39.96 | 97 |
| 1.1.3 Political stability | 54.37 | 80 |
| 1.1.4 Regulatory quality | 43.93 | 72 |
| 1.1.5 Corruption | 21.05 | 95 |
| 1.2 Market Landscape | 36.13 | 97 |
| 1.2.1 Competition intensity | 52.00 | 101 |
| 1.2.2 Ease of doing business | 73.42 | 41 |
| 1.2.3 Cluster development | 0.00 | 119 |
| 1.2.4 R&D expenditure | 8.41 | 68 |
| 1.2.5 ICT infrastructure | 57.84 | 60 |
| 1.2.6 Technology utilisation | 25.09 | 99 |
| 1.3 Business and Labour Landscape..... | 44.50 | 97 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 48.34 | 94 |
| 1.3.4 Labour-employer cooperation | 42.55 | 86 |
| Management Practice | | |
| 1.3.5 Professional management..... | 20.06 | 102 |
| 1.3.6 Relationship of pay to productivity..... | 40.40 | 70 |
| 2 ATTRACT..... | 34.46 | 95 |
| 2.1 External Openness | 20.22 | 112 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 37.86 | 91 |
| 2.1.2 Prevalence of foreign ownership | 34.32 | 103 |
| Attract People | | |
| 2.1.3 Migrant stock | 7.59 | 65 |
| 2.1.4 International students..... | 12.90 | 58 |
| 2.1.5 Brain gain..... | 8.43 | 117 |
| 2.2 Internal Openness | 48.69 | 66 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 40.23 | 68 |
| 2.2.2 Tolerance of immigrants..... | 40.85 | 87 |
| 2.2.3 Social mobility..... | 17.44 | 113 |
| Gender Equality | | |
| 2.2.4 Female graduates | 81.69 | 38 |
| 2.2.5 Gender earnings gap | 71.08 | 14 |
| 2.2.6 Leadership opportunities for women..... | 40.86 | 63 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 31.91 | 89 |
| 3.1 Formal Education..... | 25.22 | 70 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 21.21 | 54 |
| 3.1.2 Tertiary enrolment..... | 35.74 | 62 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 30.43 | 36 |
| 3.1.4 Reading, maths, and science | 38.70 | 51 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 24.41 | 111 |
| 3.2.1 Quality of management schools..... | 21.16 | 109 |
| 3.2.2 Prevalence of training in firms..... | 38.26 | 48 |
| 3.2.3 Employee development..... | 13.80 | 111 |
| 3.3 Access to Growth Opportunities | 46.10 | 63 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 28.21 | 94 |
| 3.3.2 Personal rights..... | 59.69 | 63 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 63.03 | 81 |
| 3.3.4 Use of virtual professional networks..... | n/a | n/a |
| 3.3.5 Collaboration within organisations | 29.32 | 85 |
| 3.3.6 Collaboration across organisations | 50.23 | 113 |
| 4 RETAIN..... | 45.20 | 69 |
| 4.1 Sustainability | 25.39 | 96 |
| 4.1.1 Pension system | 58.16 | 43 |
| 4.1.2 Social protection | 13.45 | 109 |
| 4.1.3 Brain retention | 4.56 | 117 |
| 4.2 Lifestyle | 65.00 | 57 |
| 4.2.1 Environmental performance..... | 73.89 | 52 |
| 4.2.2 Personal safety | 72.54 | 43 |
| 4.2.3 Physician density | 40.38 | 46 |
| 4.2.4 Sanitation | 73.18 | 83 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 38.60 | 79 |
| 5.1 Mid-Level Skills | 36.27 | 60 |
| 5.1.1 Workforce with secondary education | 48.92 | 17 |
| 5.1.2 Population with secondary education | 59.34 | 23 |
| 5.1.3 Technicians and associate professionals | 29.15 | 71 |
| 5.1.4 Labour productivity per employee..... | 7.67 | 85 |
| 5.2 Employability..... | 40.93 | 105 |
| 5.2.1 Ease of finding skilled employees | 19.14 | 113 |
| 5.2.2 Relevance of education system to the economy | 28.61 | 91 |
| 5.2.3 Skills matching with secondary education..... | 58.33 | 78 |
| 5.2.4 Skills matching with tertiary education | 57.66 | 109 |
| 6 GLOBAL KNOWLEDGE SKILLS | 25.26 | 66 |
| 6.1 High-Level Skills | 31.12 | 53 |
| 6.1.1 Workforce with tertiary education | 35.86 | 47 |
| 6.1.2 Population with tertiary education | 54.03 | 10 |
| 6.1.3 Professionals..... | 38.73 | 45 |
| 6.1.4 Researchers..... | 7.88 | 59 |
| 6.1.5 Senior officials and managers | 43.75 | 27 |
| 6.1.6 Availability of scientists and engineers | 6.47 | 115 |
| 6.2 Talent Impact..... | 19.41 | 78 |
| 6.2.1 Innovation output..... | 41.12 | 41 |
| 6.2.2 High-value exports..... | 7.53 | 74 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 9.29 | 51 |
| 6.2.5 Scientific journal articles..... | 19.69 | 58 |

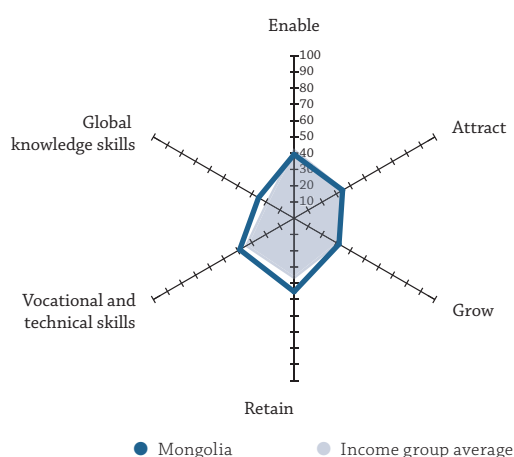
MONGOLIA

Key Indicators

| | |
|----------------------------|--|
| Rank (out of 119)..... | 75 |
| Income group..... | Lower middle income |
| Regional group..... | East, Southeastern Asia and Oceania |
| Population (millions)..... | 2.96 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 12,188.60 |
| GDP (US\$ billions)..... | 11.76 |
| GTCI score..... | 38.29 |
| GTCI score (income group average)..... | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 46.10 | 84 |
| 1.1 Regulatory Landscape..... | 41.47 | 85 |
| 1.1.1 Government effectiveness..... | 31.88 | 88 |
| 1.1.2 Business-government relations..... | 27.15 | 115 |
| 1.1.3 Political stability..... | 79.61 | 33 |
| 1.1.4 Regulatory quality..... | 37.14 | 88 |
| 1.1.5 Corruption..... | 31.58 | 70 |
| 1.2 Market Landscape..... | 37.34 | 94 |
| 1.2.1 Competition intensity..... | 53.43 | 97 |
| 1.2.2 Ease of doing business..... | 64.84 | 59 |
| 1.2.3 Cluster development..... | 12.38 | 116 |
| 1.2.4 R&D expenditure..... | 5.14 | 79 |
| 1.2.5 ICT infrastructure..... | 46.93 | 74 |
| 1.2.6 Technology utilisation..... | 41.34 | 67 |
| 1.3 Business and Labour Landscape..... | 59.50 | 52 |
| 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..... | 52.87 | 82 |
| 1.3.4 Labour-employer cooperation..... | 49.59 | 62 |
| Management Practice | | |
| 1.3.5 Professional management..... | 21.20 | 99 |
| 1.3.6 Relationship of pay to productivity..... | 33.33 | 86 |
| 2 ATTRACT..... | 41.69 | 65 |
| 2.1 External Openness..... | 22.06 | 108 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 39.95 | 86 |
| 2.1.2 Prevalence of foreign ownership..... | 42.22 | 95 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 1.17 | 100 |
| 2.1.4 International students..... | 3.45 | 75 |
| 2.1.5 Brain gain..... | 23.49 | 98 |
| 2.2 Internal Openness..... | 61.33 | 28 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 65.52 | 27 |
| 2.2.2 Tolerance of immigrants..... | 26.76 | 107 |
| 2.2.3 Social mobility..... | 58.86 | 32 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 88.70 | 22 |
| 2.2.5 Gender earnings gap..... | 65.06 | 22 |
| 2.2.6 Leadership opportunities for women..... | 63.08 | 27 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 34.38 | 81 |
| 3.1 Formal Education..... | 19.45 | 82 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 15.56 | 67 |
| 3.1.2 Tertiary enrolment..... | 59.94 | 28 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 2.30 | 103 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 39.61 | 67 |
| 3.2.1 Quality of management schools..... | 14.02 | 114 |
| 3.2.2 Prevalence of training in firms..... | 75.86 | 8 |
| 3.2.3 Employee development..... | 28.96 | 85 |
| 3.3 Access to Growth Opportunities..... | 44.07 | 77 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 11.45 | 117 |
| 3.3.2 Personal rights..... | 73.70 | 39 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 69.39 | 61 |
| 3.3.4 Use of virtual professional networks..... | 6.90 | 86 |
| 3.3.5 Collaboration within organisations..... | 54.37 | 29 |
| 3.3.6 Collaboration across organisations..... | 48.62 | 116 |
| 4 RETAIN..... | 41.02 | 84 |
| 4.1 Sustainability..... | 27.20 | 91 |
| 4.1.1 Pension system..... | 31.63 | 63 |
| 4.1.2 Social protection..... | 31.05 | 74 |
| 4.1.3 Brain retention..... | 18.91 | 110 |
| 4.2 Lifestyle..... | 54.84 | 73 |
| 4.2.1 Environmental performance..... | 50.93 | 94 |
| 4.2.2 Personal safety..... | 68.37 | 56 |
| 4.2.3 Physician density..... | 45.83 | 35 |
| 4.2.4 Sanitation..... | 54.20 | 98 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 34.26 | 91 |
| 5.1 Mid-Level Skills..... | 32.87 | 65 |
| 5.1.1 Workforce with secondary education..... | 41.43 | 26 |
| 5.1.2 Population with secondary education..... | 45.51 | 42 |
| 5.1.3 Technicians and associate professionals..... | 11.66 | 93 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 35.65 | 113 |
| 5.2.1 Ease of finding skilled employees..... | 0.00 | 118 |
| 5.2.2 Relevance of education system to the economy..... | 25.00 | 98 |
| 5.2.3 Skills matching with secondary education..... | 70.14 | 34 |
| 5.2.4 Skills matching with tertiary education..... | 47.45 | 117 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 32.31 | 50 |
| 6.1 High-Level Skills..... | 41.68 | 33 |
| 6.1.1 Workforce with tertiary education..... | 43.80 | 35 |
| 6.1.2 Population with tertiary education..... | 35.33 | 29 |
| 6.1.3 Professionals..... | 41.62 | 38 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers..... | 40.00 | 31 |
| 6.1.6 Availability of scientists and engineers..... | 47.65 | 45 |
| 6.2 Talent Impact..... | 22.93 | 69 |
| 6.2.1 Innovation output..... | 39.89 | 45 |
| 6.2.2 High-value exports..... | 7.53 | 74 |
| 6.2.3 New product entrepreneurial activity..... | n/a | n/a |
| 6.2.4 New business density..... | 36.45 | 17 |
| 6.2.5 Scientific journal articles..... | 7.86 | 80 |

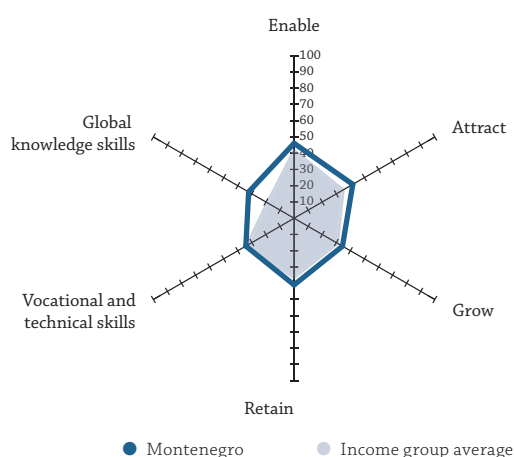
MONTENEGRO

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 58 |
| Income group | Upper middle income |
| Regional group | Europe |
| Population (millions) | 0.62 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 15,485.80 |
| GDP (US\$ billions) | 3.99 |
| GTCI score | 43.47 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 47.41 | 74 |
| 1.1 Regulatory Landscape..... | 53.27 | 50 |
| 1.1.1 Government effectiveness | 46.27 | 59 |
| 1.1.2 Business-government relations | 61.59 | 50 |
| 1.1.3 Political stability | 66.99 | 54 |
| 1.1.4 Regulatory quality | 50.73 | 61 |
| 1.1.5 Corruption | 40.79 | 52 |
| 1.2 Market Landscape..... | 40.67 | 81 |
| 1.2.1 Competition intensity | 44.29 | 109 |
| 1.2.2 Ease of doing business | 72.17 | 48 |
| 1.2.3 Cluster development | 23.53 | 102 |
| 1.2.4 R&D expenditure | 8.18 | 69 |
| 1.2.5 ICT infrastructure | 61.94 | 55 |
| 1.2.6 Technology utilisation | 33.92 | 84 |
| 1.3 Business and Labour Landscape..... | 48.28 | 85 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 59.32 | 64 |
| 1.3.4 Labour-employer cooperation | 36.31 | 96 |
| Management Practice | | |
| 1.3.5 Professional management..... | 22.35 | 98 |
| 1.3.6 Relationship of pay to productivity..... | 36.03 | 78 |
| 2 ATTRACT..... | 40.27 | 70 |
| 2.1 External Openness | 37.23 | 61 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 47.52 | 67 |
| 2.1.2 Prevalence of foreign ownership | 48.15 | 86 |
| Attract People | | |
| 2.1.3 Migrant stock | 28.95 | 28 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 24.30 | 95 |
| 2.2 Internal Openness..... | 43.30 | 88 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 31.03 | 81 |
| 2.2.2 Tolerance of immigrants..... | 70.42 | 40 |
| 2.2.3 Social mobility..... | 34.60 | 87 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 48.19 | 70 |
| 2.2.6 Leadership opportunities for women..... | 32.26 | 75 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 36.50 | 72 |
| 3.1 Formal Education..... | 34.54 | 48 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 52.43 | 15 |
| 3.1.2 Tertiary enrolment..... | 48.24 | 47 |
| 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 | 76 |
| 3.2 Lifelong Learning..... | 30.13 | 98 |
| 3.2.1 Quality of management schools..... | 42.06 | 64 |
| 3.2.2 Prevalence of training in firms | 26.78 | 67 |
| 3.2.3 Employee development..... | 21.55 | 104 |
| 3.3 Access to Growth Opportunities | 44.83 | 70 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 24.58 | 101 |
| 3.3.2 Personal rights..... | 59.69 | 63 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 69.39 | 61 |
| 3.3.4 Use of virtual professional networks..... | 18.97 | 51 |
| 3.3.5 Collaboration within organisations | 33.28 | 75 |
| 3.3.6 Collaboration across organisations | 63.09 | 85 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 48.40 | 63 |
| 4.1 Sustainability | 27.05 | 92 |
| 4.1.1 Pension system | n/a | n/a |
| 4.1.2 Social protection | 24.95 | 85 |
| 4.1.3 Brain retention | 29.16 | 88 |
| 4.2 Lifestyle | 69.75 | 48 |
| 4.2.1 Environmental performance..... | 78.00 | 45 |
| 4.2.2 Personal safety | 68.48 | 55 |
| 4.2.3 Physician density | 37.18 | 51 |
| 4.2.4 Sanitation | 95.34 | 47 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 55.22 | 30 |
| 5.1 Mid-Level Skills | 64.53 | 6 |
| 5.1.1 Workforce with secondary education | 57.29 | 8 |
| 5.1.2 Population with secondary education | 75.32 | 7 |
| 5.1.3 Technicians and associate professionals | 60.99 | 24 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 45.90 | 87 |
| 5.2.1 Ease of finding skilled employees | 26.40 | 104 |
| 5.2.2 Relevance of education system to the economy | 39.90 | 65 |
| 5.2.3 Skills matching with secondary education..... | 57.49 | 86 |
| 5.2.4 Skills matching with tertiary education | 59.80 | 102 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 33.02 | 48 |
| 6.1 High-Level Skills | 32.45 | 49 |
| 6.1.1 Workforce with tertiary education | 34.55 | 51 |
| 6.1.2 Population with tertiary education | 32.42 | 34 |
| 6.1.3 Professionals | 48.84 | 26 |
| 6.1.4 Researchers..... | 10.00 | 53 |
| 6.1.5 Senior officials and managers | 36.25 | 36 |
| 6.1.6 Availability of scientists and engineers | 32.65 | 79 |
| 6.2 Talent Impact..... | 33.59 | 50 |
| 6.2.1 Innovation output..... | 35.85 | 50 |
| 6.2.2 High-value exports..... | n/a | n/a |
| 6.2.3 New product entrepreneurial activity | 32.02 | 66 |
| 6.2.4 New business density | 39.58 | 16 |
| 6.2.5 Scientific journal articles..... | 26.90 | 49 |

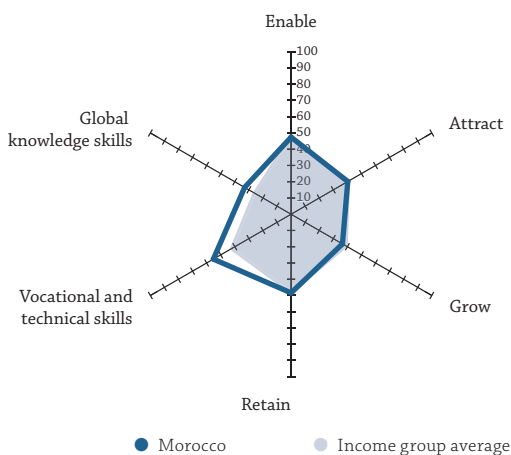
MOROCCO

Key Indicators

Rank (out of 119)..... **98**
 Income group..... **Lower middle income**
 Regional group..... **North Africa and Western Asia**
 Population (millions)..... **34.38**

GDP per capita (PPP US\$) **7,821.40**
 GDP (US\$ billions) **100.36**
 GTCI score..... **31.86**
 GTCI score (income group average) **32.92**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|---|-------|------|
| 1 ENABLE.....41.05 93 | | |
| 1.1 Regulatory Landscape.....45.86 72 | | |
| 1.1.1 Government effectiveness.....40.62 74 | | |
| 1.1.2 Business-government relations.....61.81 48 | | |
| 1.1.3 Political stability.....55.58 78 | | |
| 1.1.4 Regulatory quality.....41.02 76 | | |
| 1.1.5 Corruption.....30.26 72 | | |
| 1.2 Market Landscape.....45.94 66 | | |
| 1.2.1 Competition intensity.....68.29 65 | | |
| 1.2.2 Ease of doing business.....63.63 62 | | |
| 1.2.3 Cluster development.....39.63 73 | | |
| 1.2.4 R&D expenditure.....16.36 46 | | |
| 1.2.5 ICT infrastructure.....42.16 79 | | |
| 1.2.6 Technology utilisation.....45.58 59 | | |
| 1.3 Business and Labour Landscape.....31.37 116 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring.....0.00 116 | | |
| 1.3.2 Ease of redundancy.....50.00 98 | | |
| 1.3.3 Active labour market policies.....47.61 97 | | |
| 1.3.4 Labour-employer cooperation.....31.71 104 | | |
| Management Practice | | |
| 1.3.5 Professional management.....32.95 75 | | |
| 1.3.6 Relationship of pay to productivity.....25.93 101 | | |
| 2 ATTRACT.....33.82 100 | | |
| 2.1 External Openness.....33.94 69 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer.....54.05 55 | | |
| 2.1.2 Prevalence of foreign ownership.....64.44 45 | | |
| Attract People | | |
| 2.1.3 Migrant stock.....0.42 113 | | |
| 2.1.4 International students.....9.25 66 | | |
| 2.1.5 Brain gain.....41.57 58 | | |
| 2.2 Internal Openness.....33.70 111 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities.....33.33 79 | | |
| 2.2.2 Tolerance of immigrants.....47.89 76 | | |
| 2.2.3 Social mobility.....42.23 66 | | |
| Gender Equality | | |
| 2.2.4 Female graduates.....51.76 87 | | |
| 2.2.5 Gender earnings gap.....10.84 110 | | |
| 2.2.6 Leadership opportunities for women.....16.13 101 | | |

| | Score | Rank |
|--|-------|------|
| 3 GROW.....26.82 103 | | |
| 3.1 Formal Education.....14.68 96 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment.....9.74 79 | | |
| 3.1.2 Tertiary enrolment.....24.18 80 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure.....24.81 52 | | |
| 3.1.4 Reading, maths, and science.....n/a n/a | | |
| 3.1.5 University ranking.....0.00 76 | | |
| 3.2 Lifelong Learning.....28.79 102 | | |
| 3.2.1 Quality of management schools.....41.01 66 | | |
| 3.2.2 Prevalence of training in firms.....30.21 60 | | |
| 3.2.3 Employee development.....15.15 110 | | |
| 3.3 Access to Growth Opportunities.....36.98 100 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority.....29.05 93 | | |
| 3.3.2 Personal rights.....27.51 98 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks.....68.48 66 | | |
| 3.3.4 Use of virtual professional networks.....10.05 70 | | |
| 3.3.5 Collaboration within organisations.....27.32 89 | | |
| 3.3.6 Collaboration across organisations.....59.46 94 | | |
| 4 RETAIN.....41.28 83 | | |
| 4.1 Sustainability.....28.07 87 | | |
| 4.1.1 Pension system.....22.45 72 | | |
| 4.1.2 Social protection.....27.13 81 | | |
| 4.1.3 Brain retention.....34.62 81 | | |
| 4.2 Lifestyle.....54.49 76 | | |
| 4.2.1 Environmental performance.....69.20 59 | | |
| 4.2.2 Personal safety.....65.64 60 | | |
| 4.2.3 Physician density.....9.62 90 | | |
| 4.2.4 Sanitation.....73.52 81 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....29.14 106 | | |
| 5.1 Mid-Level Skills.....16.14 95 | | |
| 5.1.1 Workforce with secondary education.....17.57 82 | | |
| 5.1.2 Population with secondary education.....n/a n/a | | |
| 5.1.3 Technicians and associate professionals.....18.83 85 | | |
| 5.1.4 Labour productivity per employee.....12.02 78 | | |
| 5.2 Employability.....42.14 102 | | |
| 5.2.1 Ease of finding skilled employees.....34.32 86 | | |
| 5.2.2 Relevance of education system to the economy.....19.47 104 | | |
| 5.2.3 Skills matching with secondary education.....53.84 97 | | |
| 5.2.4 Skills matching with tertiary education.....60.93 99 | | |
| 6 GLOBAL KNOWLEDGE SKILLS.....19.07 81 | | |
| 6.1 High-Level Skills.....14.10 99 | | |
| 6.1.1 Workforce with tertiary education.....12.69 90 | | |
| 6.1.2 Population with tertiary education.....n/a n/a | | |
| 6.1.3 Professionals.....2.60 104 | | |
| 6.1.4 Researchers.....12.38 47 | | |
| 6.1.5 Senior officials and managers.....3.13 102 | | |
| 6.1.6 Availability of scientists and engineers.....39.71 61 | | |
| 6.2 Talent Impact.....24.04 63 | | |
| 6.2.1 Innovation output.....27.94 67 | | |
| 6.2.2 High-value exports.....6.59 80 | | |
| 6.2.3 New product entrepreneurial activity.....59.14 20 | | |
| 6.2.4 New business density.....8.76 54 | | |
| 6.2.5 Scientific journal articles.....17.76 62 | | |

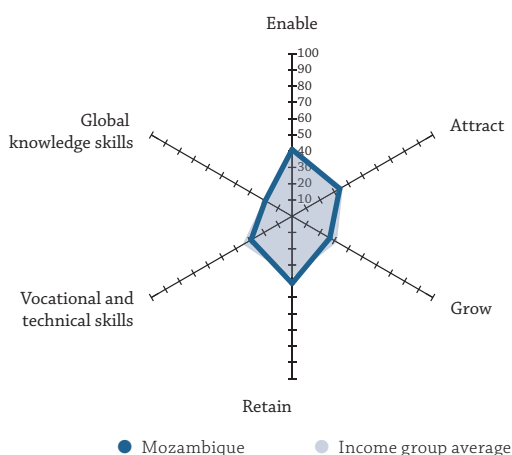
MOZAMBIQUE

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 117 |
| Income group | Low income |
| Regional group | Sub-Saharan Africa |
| Population (millions) | 27.98 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 1,185.82 |
| GDP (US\$ billions) | 14.69 |
| GTCI score | 22.85 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 31.80 | 111 |
| 1.1 Regulatory Landscape..... | 36.66 | 97 |
| 1.1.1 Government effectiveness | 23.14 | 107 |
| 1.1.2 Business-government relations | 60.04 | 56 |
| 1.1.3 Political stability | 49.76 | 89 |
| 1.1.4 Regulatory quality | 33.25 | 97 |
| 1.1.5 Corruption | 17.11 | 109 |
| 1.2 Market Landscape | 24.11 | 114 |
| 1.2.1 Competition intensity | 50.00 | 104 |
| 1.2.2 Ease of doing business | 38.05 | 106 |
| 1.2.3 Cluster development | 22.91 | 103 |
| 1.2.4 R&D expenditure | 9.58 | 64 |
| 1.2.5 ICT infrastructure | 3.27 | 115 |
| 1.2.6 Technology utilisation | 20.85 | 105 |
| 1.3 Business and Labour Landscape..... | 34.63 | 113 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 33.33 | 101 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 40.33 | 113 |
| 1.3.4 Labour-employer cooperation | 31.71 | 104 |
| Management Practice | | |
| 1.3.5 Professional management..... | 14.33 | 110 |
| 1.3.6 Relationship of pay to productivity..... | 8.08 | 118 |
| 2 ATTRACT..... | 40.01 | 73 |
| 2.1 External Openness | 28.82 | 85 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 37.60 | 92 |
| 2.1.2 Prevalence of foreign ownership | 57.53 | 58 |
| Attract People | | |
| 2.1.3 Migrant stock | 1.61 | 96 |
| 2.1.4 International students..... | 1.78 | 84 |
| 2.1.5 Brain gain | 45.58 | 48 |
| 2.2 Internal Openness | 51.19 | 54 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 47.13 | 56 |
| 2.2.2 Tolerance of immigrants..... | 83.10 | 21 |
| 2.2.3 Social mobility..... | 23.71 | 107 |
| Gender Equality | | |
| 2.2.4 Female graduates | 37.97 | 92 |
| 2.2.5 Gender earnings gap | 81.93 | 5 |
| 2.2.6 Leadership opportunities for women..... | 33.33 | 73 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 18.68 | 117 |
| 3.1 Formal Education..... | 8.21 | 111 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 7.79 | 85 |
| 3.1.2 Tertiary enrolment..... | 4.57 | 107 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 20.46 | 65 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 15.53 | 117 |
| 3.2.1 Quality of management schools..... | 9.79 | 117 |
| 3.2.2 Prevalence of training in firms..... | 24.67 | 71 |
| 3.2.3 Employee development..... | 12.12 | 116 |
| 3.3 Access to Growth Opportunities | 32.32 | 108 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 23.46 | 105 |
| 3.3.2 Personal rights..... | 48.49 | 74 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 44.85 | 107 |
| 3.3.4 Use of virtual professional networks..... | 1.11 | 107 |
| 3.3.5 Collaboration within organisations | 17.13 | 112 |
| 3.3.6 Collaboration across organisations | 58.88 | 97 |

| | | |
|--------------------------------------|--------------|------------|
| 4 RETAIN..... | 18.61 | 118 |
| 4.1 Sustainability | 21.22 | 108 |
| 4.1.1 Pension system | 0.00 | 106 |
| 4.1.2 Social protection | 24.02 | 87 |
| 4.1.3 Brain retention | 39.64 | 68 |
| 4.2 Lifestyle | 16.01 | 118 |
| 4.2.1 Environmental performance..... | 8.81 | 116 |
| 4.2.2 Personal safety | 44.92 | 98 |
| 4.2.3 Physician density | 0.64 | 107 |
| 4.2.4 Sanitation | 9.66 | 114 |

| | | |
|--|--------------|------------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 18.24 | 118 |
| 5.1 Mid-Level Skills | 1.90 | 119 |
| 5.1.1 Workforce with secondary education | n/a | n/a |
| 5.1.2 Population with secondary education | 3.28 | 99 |
| 5.1.3 Technicians and associate professionals | n/a | n/a |
| 5.1.4 Labour productivity per employee..... | 0.52 | 99 |
| 5.2 Employability..... | 34.58 | 115 |
| 5.2.1 Ease of finding skilled employees | 20.13 | 111 |
| 5.2.2 Relevance of education system to the economy | 17.31 | 108 |
| 5.2.3 Skills matching with secondary education..... | 45.67 | 111 |
| 5.2.4 Skills matching with tertiary education | 55.20 | 113 |

| | | |
|--|-------------|------------|
| 6 GLOBAL KNOWLEDGE SKILLS | 9.76 | 107 |
| 6.1 High-Level Skills | 5.45 | 117 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 1.89 | 101 |
| 6.1.3 Professionals..... | n/a | n/a |
| 6.1.4 Researchers..... | 0.35 | 92 |
| 6.1.5 Senior officials and managers | n/a | n/a |
| 6.1.6 Availability of scientists and engineers | 14.12 | 110 |
| 6.2 Talent Impact..... | 14.07 | 90 |
| 6.2.1 Innovation output..... | 17.05 | 96 |
| 6.2.2 High-value exports..... | 21.85 | 38 |
| 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..... | 3.31 | 103 |

NAMIBIA

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 80 |
| Income group | Upper middle income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 2.46 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 10,414.00 |
| GDP (US\$ billions) | 11.55 |
| GTCI score..... | 37.00 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 51.58 | 55 |
| 1.1 Regulatory Landscape..... | 56.83 | 47 |
| 1.1.1 Government effectiveness | 48.84 | 52 |
| 1.1.2 Business-government relations | 62.47 | 43 |
| 1.1.3 Political stability | 79.61 | 33 |
| 1.1.4 Regulatory quality | 43.20 | 74 |
| 1.1.5 Corruption | 50.00 | 43 |
| 1.2 Market Landscape..... | 36.89 | 96 |
| 1.2.1 Competition intensity | 55.43 | 91 |
| 1.2.2 Ease of doing business | 47.45 | 90 |
| 1.2.3 Cluster development | 41.49 | 68 |
| 1.2.4 R&D expenditure | 3.04 | 88 |
| 1.2.5 ICT infrastructure | 29.06 | 96 |
| 1.2.6 Technology utilisation | 44.88 | 62 |
| 1.3 Business and Labour Landscape..... | 61.01 | 44 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 48.48 | 93 |
| 1.3.4 Labour-employer cooperation | 51.76 | 57 |
| Management Practice | | |
| 1.3.5 Professional management..... | 50.14 | 41 |
| 1.3.6 Relationship of pay to productivity..... | 35.69 | 81 |
| 2 ATTRACT..... | 53.72 | 31 |
| 2.1 External Openness | 46.74 | 32 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 49.09 | 66 |
| 2.1.2 Prevalence of foreign ownership | 72.35 | 33 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 8.27 | 61 |
| 2.1.4 International students..... | 52.98 | 16 |
| 2.1.5 Brain gain..... | 51.00 | 36 |
| 2.2 Internal Openness..... | 60.70 | 29 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 47.13 | 56 |
| 2.2.2 Tolerance of immigrants..... | 57.75 | 57 |
| 2.2.3 Social mobility..... | 48.77 | 48 |
| Gender Equality | | |
| 2.2.4 Female graduates | 97.90 | 3 |
| 2.2.5 Gender earnings gap | 71.08 | 14 |
| 2.2.6 Leadership opportunities for women..... | 41.58 | 61 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 35.99 | 78 |
| 3.1 Formal Education..... | 18.20 | 85 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 7.54 | 102 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 47.06 | 8 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 35.62 | 78 |
| 3.2.1 Quality of management schools..... | 26.98 | 100 |
| 3.2.2 Prevalence of training in firms..... | 29.02 | 64 |
| 3.2.3 Employee development..... | 50.84 | 41 |
| 3.3 Access to Growth Opportunities | 54.16 | 39 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 54.75 | 31 |
| 3.3.2 Personal rights..... | 80.67 | 29 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 69.39 | 61 |
| 3.3.4 Use of virtual professional networks..... | 16.39 | 60 |
| 3.3.5 Collaboration within organisations | 36.56 | 68 |
| 3.3.6 Collaboration across organisations | 67.19 | 68 |
| 4 RETAIN..... | 34.72 | 95 |
| 4.1 Sustainability | 32.02 | 71 |
| 4.1.1 Pension system | 8.16 | 86 |
| 4.1.2 Social protection | 40.29 | 52 |
| 4.1.3 Brain retention | 47.61 | 45 |
| 4.2 Lifestyle | 37.41 | 101 |
| 4.2.1 Environmental performance..... | 62.97 | 69 |
| 4.2.2 Personal safety | 55.62 | 80 |
| 4.2.3 Physician density | 5.61 | 95 |
| 4.2.4 Sanitation | 25.45 | 109 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 27.90 | 109 |
| 5.1 Mid-Level Skills | 11.66 | 101 |
| 5.1.1 Workforce with secondary education | 0.00 | 107 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 23.32 | 79 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 44.14 | 94 |
| 5.2.1 Ease of finding skilled employees | 27.06 | 102 |
| 5.2.2 Relevance of education system to the economy | 31.73 | 82 |
| 5.2.3 Skills matching with secondary education..... | 55.14 | 95 |
| 5.2.4 Skills matching with tertiary education | 62.63 | 94 |
| 6 GLOBAL KNOWLEDGE SKILLS | 18.08 | 86 |
| 6.1 High-Level Skills | 14.80 | 97 |
| 6.1.1 Workforce with tertiary education | 9.90 | 93 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals..... | 18.21 | 74 |
| 6.1.4 Researchers..... | 1.57 | 82 |
| 6.1.5 Senior officials and managers | 18.13 | 67 |
| 6.1.6 Availability of scientists and engineers | 26.18 | 93 |
| 6.2 Talent Impact..... | 21.36 | 72 |
| 6.2.1 Innovation output..... | 16.17 | 98 |
| 6.2.2 High-value exports..... | 5.08 | 85 |
| 6.2.3 New product entrepreneurial activity | 75.75 | 6 |
| 6.2.4 New business density | 4.76 | 73 |
| 6.2.5 Scientific journal articles..... | 5.04 | 94 |

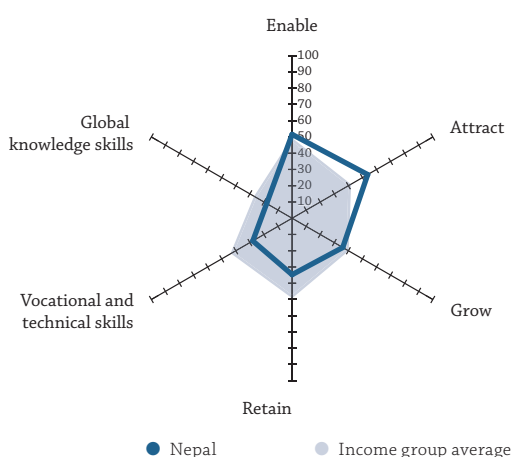
NEPAL

Key Indicators

| | |
|-----------------------------|----------------------------------|
| Rank (out of 119)..... | 116 |
| Income group | Low income |
| Regional group | Central and Southern Asia |
| Population (millions) | 28.51 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 2,458.13 |
| GDP (US\$ billions) | 20.88 |
| GTCI score | 24.05 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 28.61 | 115 |
| 1.1 Regulatory Landscape..... | 29.40 | 110 |
| 1.1.1 Government effectiveness | 15.42 | 115 |
| 1.1.2 Business-government relations | 44.59 | 91 |
| 1.1.3 Political stability | 41.26 | 102 |
| 1.1.4 Regulatory quality | 25.97 | 106 |
| 1.1.5 Corruption | 19.74 | 101 |
| 1.2 Market Landscape..... | 27.75 | 108 |
| 1.2.1 Competition intensity | 62.29 | 77 |
| 1.2.2 Ease of doing business | 47.56 | 89 |
| 1.2.3 Cluster development | 25.08 | 98 |
| 1.2.4 R&D expenditure | 6.78 | 73 |
| 1.2.5 ICT infrastructure | 13.51 | 106 |
| 1.2.6 Technology utilisation | 11.31 | 111 |
| 1.3 Business and Labour Landscape..... | 28.68 | 117 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 33.33 | 101 |
| 1.3.2 Ease of redundancy | 30.00 | 114 |
| 1.3.3 Active labour market policies..... | 44.57 | 110 |
| 1.3.4 Labour-employer cooperation | 26.56 | 112 |
| Management Practice | | |
| 1.3.5 Professional management..... | 15.76 | 107 |
| 1.3.6 Relationship of pay to productivity..... | 21.89 | 104 |
| 2 ATTRACT..... | 26.80 | 114 |
| 2.1 External Openness | 13.37 | 117 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 19.58 | 115 |
| 2.1.2 Prevalence of foreign ownership | 19.51 | 115 |
| Attract People | | |
| 2.1.3 Migrant stock | 3.86 | 82 |
| 2.1.4 International students..... | 0.00 | 100 |
| 2.1.5 Brain gain | 23.90 | 96 |
| 2.2 Internal Openness | 40.22 | 96 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 10.34 | 114 |
| 2.2.2 Tolerance of immigrants..... | 84.51 | 18 |
| 2.2.3 Social mobility..... | 31.34 | 95 |
| Gender Equality | | |
| 2.2.4 Female graduates | 52.03 | 85 |
| 2.2.5 Gender earnings gap | 46.99 | 74 |
| 2.2.6 Leadership opportunities for women..... | 16.13 | 101 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 21.50 | 115 |
| 3.1 Formal Education..... | 5.35 | 115 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 0.98 | 107 |
| 3.1.2 Tertiary enrolment..... | 12.51 | 94 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 7.93 | 92 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 26.57 | 107 |
| 3.2.1 Quality of management schools..... | 28.31 | 99 |
| 3.2.2 Prevalence of training in firms..... | 37.60 | 50 |
| 3.2.3 Employee development..... | 13.80 | 111 |
| 3.3 Access to Growth Opportunities | 32.57 | 107 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 24.86 | 100 |
| 3.3.2 Personal rights..... | 52.16 | 68 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 45.45 | 105 |
| 3.3.4 Use of virtual professional networks..... | 1.91 | 101 |
| 3.3.5 Collaboration within organisations | 18.16 | 111 |
| 3.3.6 Collaboration across organisations | 52.89 | 111 |

| | | |
|--------------------------------------|--------------|------------|
| 4 RETAIN..... | 27.87 | 106 |
| 4.1 Sustainability | 10.67 | 118 |
| 4.1.1 Pension system | 1.02 | 103 |
| 4.1.2 Social protection | 7.30 | 115 |
| 4.1.3 Brain retention | 23.69 | 97 |
| 4.2 Lifestyle | 45.07 | 93 |
| 4.2.1 Environmental performance..... | 24.47 | 111 |
| 4.2.2 Personal safety | 72.35 | 44 |
| 4.2.3 Physician density | n/a | n/a |
| 4.2.4 Sanitation | 38.41 | 104 |

| | | |
|--|--------------|------------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 30.08 | 103 |
| 5.1 Mid-Level Skills | 13.18 | 99 |
| 5.1.1 Workforce with secondary education | 10.36 | 95 |
| 5.1.2 Population with secondary education | 21.54 | 82 |
| 5.1.3 Technicians and associate professionals | 7.62 | 98 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 46.99 | 83 |
| 5.2.1 Ease of finding skilled employees | 28.05 | 99 |
| 5.2.2 Relevance of education system to the economy | 38.46 | 67 |
| 5.2.3 Skills matching with secondary education..... | 57.92 | 81 |
| 5.2.4 Skills matching with tertiary education | 63.51 | 88 |

| | | |
|--|-------------|------------|
| 6 GLOBAL KNOWLEDGE SKILLS | 9.46 | 109 |
| 6.1 High-Level Skills | 11.70 | 104 |
| 6.1.1 Workforce with tertiary education | 17.05 | 86 |
| 6.1.2 Population with tertiary education | 10.46 | 83 |
| 6.1.3 Professionals..... | 2.31 | 105 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 2.50 | 103 |
| 6.1.6 Availability of scientists and engineers | 26.18 | 93 |
| 6.2 Talent Impact..... | 7.21 | 110 |
| 6.2.1 Innovation output..... | 12.30 | 107 |
| 6.2.2 High-value exports..... | 1.13 | 104 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 3.83 | 77 |
| 6.2.5 Scientific journal articles..... | 11.59 | 74 |

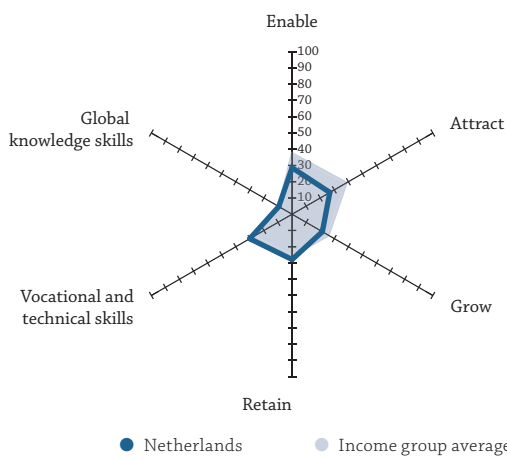
NETHERLANDS

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 9 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 16.94 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 48,458.90 |
| GDP (US\$ billions) | 752.55 |
| GTCI score..... | 72.56 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 81.42 | 12 |
| 1.1 Regulatory Landscape..... | 86.76 | 10 |
| 1.1.1 Government effectiveness | 89.46 | 6 |
| 1.1.2 Business-government relations | 79.03 | 17 |
| 1.1.3 Political stability | 86.41 | 20 |
| 1.1.4 Regulatory quality..... | 88.11 | 8 |
| 1.1.5 Corruption | 90.79 | 8 |
| 1.2 Market Landscape..... | 82.01 | 9 |
| 1.2.1 Competition intensity | 90.57 | 7 |
| 1.2.2 Ease of doing business | 80.18 | 26 |
| 1.2.3 Cluster development | 91.02 | 6 |
| 1.2.4 R&D expenditure | 45.79 | 18 |
| 1.2.5 ICT infrastructure..... | 94.41 | 7 |
| 1.2.6 Technology utilisation..... | 90.11 | 8 |
| 1.3 Business and Labour Landscape..... | 75.48 | 23 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 83.33 | 44 |
| 1.3.2 Ease of redundancy | 30.00 | 114 |
| 1.3.3 Cluster labour market policies..... | 84.74 | 10 |
| 1.3.4 Labour-employer cooperation | 89.97 | 6 |
| Management Practice | | |
| 1.3.5 Professional management..... | 96.85 | 6 |
| 1.3.6 Relationship of pay to productivity..... | 68.01 | 23 |
| 2 ATTRACT..... | 64.69 | 17 |
| 2.1 External Openness | 58.14 | 16 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 73.37 | 11 |
| 2.1.2 Prevalence of foreign ownership | 80.25 | 19 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 25.66 | 32 |
| 2.1.4 International students..... | 37.72 | 25 |
| 2.1.5 Brain gain..... | 73.69 | 12 |
| 2.2 Internal Openness..... | 71.25 | 15 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 70.11 | 17 |
| 2.2.2 Tolerance of immigrants..... | 83.10 | 21 |
| 2.2.3 Social mobility..... | 91.55 | 7 |
| Gender Equality | | |
| 2.2.4 Female graduates | 74.05 | 55 |
| 2.2.5 Gender earnings gap..... | 37.35 | 89 |
| 2.2.6 Leadership opportunities for women..... | 71.33 | 20 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 81.95 | 1 |
| 3.1 Formal Education..... | 68.27 | 3 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 77.55 | 2 |
| 3.1.2 Tertiary enrolment..... | 68.72 | 17 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 39.13 | 15 |
| 3.1.4 Reading, maths, and science | 79.45 | 11 |
| 3.1.5 University ranking | 76.49 | 12 |
| 3.2 Lifelong Learning..... | 88.00 | 4 |
| 3.2.1 Quality of management schools..... | 86.77 | 6 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 89.23 | 6 |
| 3.3 Access to Growth Opportunities | 89.57 | 3 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 85.75 | 4 |
| 3.3.2 Personal rights..... | 88.17 | 16 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 99.39 | 2 |
| 3.3.4 Use of virtual professional networks..... | 87.99 | 3 |
| 3.3.5 Collaboration within organisations | 80.77 | 9 |
| 3.3.6 Collaboration across organisations | 95.35 | 6 |
| 4 RETAIN..... | 84.38 | 9 |
| 4.1 Sustainability | 87.22 | 5 |
| 4.1.1 Pension system..... | 90.82 | 15 |
| 4.1.2 Social protection | 89.54 | 10 |
| 4.1.3 Brain retention | 81.32 | 9 |
| 4.2 Lifestyle..... | 81.53 | 20 |
| 4.2.1 Environmental performance..... | 83.86 | 35 |
| 4.2.2 Personal safety | 91.51 | 14 |
| 4.2.3 Physician density | 53.37 | 23 |
| 4.2.4 Sanitation | 97.39 | 34 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 70.38 | 9 |
| 5.1 Mid-Level Skills | 54.26 | 23 |
| 5.1.1 Workforce with secondary education | 36.14 | 39 |
| 5.1.2 Population with secondary education | 53.92 | 29 |
| 5.1.3 Technicians and associate professionals | 69.96 | 15 |
| 5.1.4 Labour productivity per employee..... | 57.04 | 15 |
| 5.2 Employability..... | 86.50 | 6 |
| 5.2.1 Ease of finding skilled employees | 85.81 | 8 |
| 5.2.2 Relevance of education system to the economy | 82.45 | 7 |
| 5.2.3 Skills matching with secondary education..... | 87.97 | 4 |
| 5.2.4 Skills matching with tertiary education | 89.78 | 7 |
| 6 GLOBAL KNOWLEDGE SKILLS | 52.51 | 16 |
| 6.1 High-Level Skills | 51.20 | 21 |
| 6.1.1 Workforce with tertiary education | 49.31 | 26 |
| 6.1.2 Population with tertiary education | 33.28 | 33 |
| 6.1.3 Professionals..... | 71.68 | 5 |
| 6.1.4 Researchers..... | 55.03 | 14 |
| 6.1.5 Senior officials and managers | 34.38 | 40 |
| 6.1.6 Availability of scientists and engineers | 63.53 | 21 |
| 6.2 Talent Impact..... | 53.83 | 14 |
| 6.2.1 Innovation output..... | 91.39 | 2 |
| 6.2.2 High-value exports..... | 37.48 | 15 |
| 6.2.3 New product entrepreneurial activity | 41.62 | 54 |
| 6.2.4 New business density | 30.82 | 21 |
| 6.2.5 Scientific journal articles..... | 67.83 | 16 |

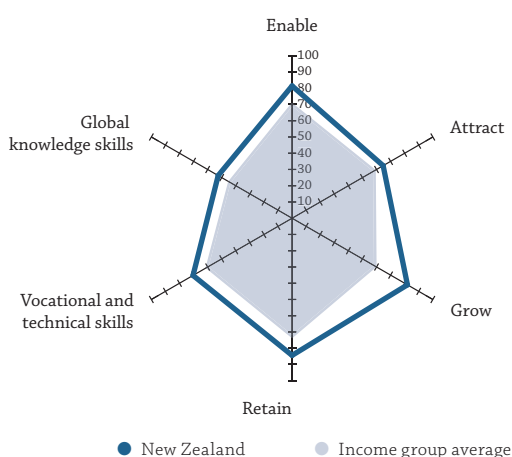
NEW ZEALAND

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 12 |
| Income group | High income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 4.60 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 36,982.30 |
| GDP (US\$ billions) | 173.75 |
| GTCI score | 71.52 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|----------|
| 1 ENABLE..... | 84.58 | 4 |
| 1.1 Regulatory Landscape..... | 94.26 | 2 |
| 1.1.1 Government effectiveness | 90.75 | 3 |
| 1.1.2 Business-government relations | 88.08 | 9 |
| 1.1.3 Political stability | 100.00 | 1 |
| 1.1.4 Regulatory quality | 92.48 | 2 |
| 1.1.5 Corruption | 100.00 | 1 |
| 1.2 Market Landscape..... | 71.67 | 22 |
| 1.2.1 Competition intensity | 78.57 | 26 |
| 1.2.2 Ease of doing business | 100.00 | 1 |
| 1.2.3 Cluster development | 49.85 | 45 |
| 1.2.4 R&D expenditure | 27.10 | 33 |
| 1.2.5 ICT infrastructure | 92.50 | 12 |
| 1.2.6 Technology utilisation | 81.98 | 16 |
| 1.3 Business and Labour Landscape..... | 87.82 | 6 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 82.46 | 12 |
| 1.3.4 Labour-employer cooperation | 85.91 | 9 |
| Management Practice | | |
| 1.3.5 Professional management..... | 97.71 | 3 |
| 1.3.6 Relationship of pay to productivity..... | 81.82 | 8 |
| 2 ATTRACT..... | 76.02 | 6 |
| 2.1 External Openness | 72.48 | 9 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 63.97 | 28 |
| 2.1.2 Prevalence of foreign ownership | 78.27 | 21 |
| Attract People | | |
| 2.1.3 Migrant stock | 50.51 | 14 |
| 2.1.4 International students..... | 97.75 | 5 |
| 2.1.5 Brain gain..... | 71.89 | 14 |
| 2.2 Internal Openness..... | 79.57 | 7 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 67.82 | 22 |
| 2.2.2 Tolerance of immigrants..... | 100.00 | 1 |
| 2.2.3 Social mobility..... | 97.55 | 2 |
| Gender Equality | | |
| 2.2.4 Female graduates | 78.40 | 48 |
| 2.2.5 Gender earnings gap | 53.01 | 52 |
| 2.2.6 Leadership opportunities for women..... | 80.65 | 11 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 71.74 | 13 |
| 3.1 Formal Education..... | 55.16 | 16 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 27.63 | 44 |
| 3.1.2 Tertiary enrolment..... | 70.82 | 15 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 38.11 | 18 |
| 3.1.4 Reading, maths, and science | 78.51 | 13 |
| 3.1.5 University ranking | 60.75 | 18 |
| 3.2 Lifelong Learning..... | 74.12 | 17 |
| 3.2.1 Quality of management schools..... | 72.49 | 23 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 75.76 | 18 |
| 3.3 Access to Growth Opportunities | 85.95 | 8 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 85.47 | 5 |
| 3.3.2 Personal rights..... | 100.00 | 1 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 85.15 | 21 |
| 3.3.4 Use of virtual professional networks..... | 75.03 | 11 |
| 3.3.5 Collaboration within organisations | 81.77 | 8 |
| 3.3.6 Collaboration across organisations | 88.25 | 15 |
| 4 RETAIN..... | 75.07 | 21 |
| 4.1 Sustainability | 73.35 | 18 |
| 4.1.1 Pension system | n/a | n/a |
| 4.1.2 Social protection | 85.65 | 11 |
| 4.1.3 Brain retention | 61.05 | 30 |
| 4.2 Lifestyle | 76.79 | 34 |
| 4.2.1 Environmental performance..... | 95.00 | 11 |
| 4.2.2 Personal safety | 90.03 | 18 |
| 4.2.3 Physician density | 45.35 | 36 |
| 4.2.4 Sanitation | n/a | n/a |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 63.00 | 20 |
| 5.1 Mid-Level Skills | 43.92 | 39 |
| 5.1.1 Workforce with secondary education | 44.36 | 24 |
| 5.1.2 Population with secondary education | 35.66 | 56 |
| 5.1.3 Technicians and associate professionals | 54.71 | 33 |
| 5.1.4 Labour productivity per employee..... | 40.96 | 35 |
| 5.2 Employability..... | 82.07 | 14 |
| 5.2.1 Ease of finding skilled employees | 74.92 | 22 |
| 5.2.2 Relevance of education system to the economy | 80.53 | 9 |
| 5.2.3 Skills matching with secondary education..... | 81.67 | 13 |
| 5.2.4 Skills matching with tertiary education | 91.16 | 5 |
| 6 GLOBAL KNOWLEDGE SKILLS | 58.70 | 7 |
| 6.1 High-Level Skills | 54.71 | 19 |
| 6.1.1 Workforce with tertiary education | 45.05 | 32 |
| 6.1.2 Population with tertiary education | 43.22 | 17 |
| 6.1.3 Professionals..... | 45.95 | 34 |
| 6.1.4 Researchers..... | 48.48 | 22 |
| 6.1.5 Senior officials and managers | 84.38 | 5 |
| 6.1.6 Availability of scientists and engineers | 61.18 | 24 |
| 6.2 Talent Impact..... | 62.68 | 4 |
| 6.2.1 Innovation output..... | 57.47 | 24 |
| 6.2.2 High-value exports..... | 18.08 | 42 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 96.34 | 2 |
| 6.2.5 Scientific journal articles..... | 78.84 | 11 |

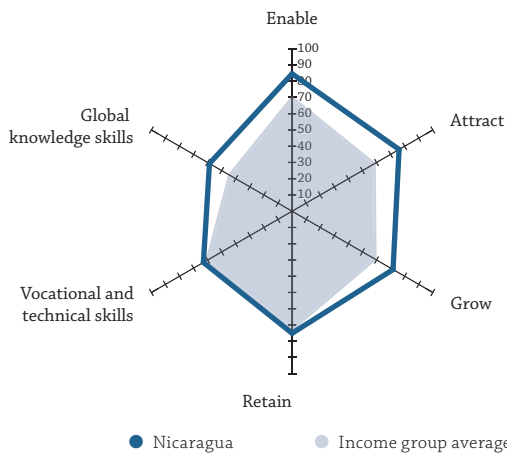
NICARAGUA

Key Indicators

Rank (out of 119)..... **111**
 Income group..... **Lower middle income**
 Regional group..... **Latin, Central America and Caribbean**
 Population (millions)..... **6.08**

GDP per capita (PPP US\$) **5,189.73**
 GDP (US\$ billions) **12.69**
 GTCI score..... **26.10**
 GTCI score (income group average) **32.92**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE..... 38.95 97 | | |
| 1.1 Regulatory Landscape..... 39.36 90 | | |
| 1.1.1 Government effectiveness 21.59 109 | | |
| 1.1.2 Business-government relations 61.59 50 | | |
| 1.1.3 Political stability 63.11 61 | | |
| 1.1.4 Regulatory quality 34.71 94 | | |
| 1.1.5 Corruption 15.79 110 | | |
| 1.2 Market Landscape 35.21 98 | | |
| 1.2.1 Competition intensity 56.29 90 | | |
| 1.2.2 Ease of doing business 41.72 101 | | |
| 1.2.3 Cluster development 24.15 100 | | |
| 1.2.4 R&D expenditure n/a n/a | | |
| 1.2.5 ICT infrastructure 18.69 101 | | |
| 1.2.6 Technology utilisation n/a n/a | | |
| 1.3 Business and Labour Landscape..... 42.28 100 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring 66.67 51 | | |
| 1.3.2 Ease of redundancy 100.00 1 | | |
| 1.3.3 Active labour market policies..... 0.00 118 | | |
| 1.3.4 Labour-employer cooperation 49.32 64 | | |
| Management Practice | | |
| 1.3.5 Professional management..... 11.75 115 | | |
| 1.3.6 Relationship of pay to productivity..... 25.93 101 | | |
| 2 ATTRACT..... 34.93 94 | | |
| 2.1 External Openness 32.44 74 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... 42.04 79 | | |
| 2.1.2 Prevalence of foreign ownership 56.30 63 | | |
| Attract People | | |
| 2.1.3 Migrant stock..... 1.30 98 | | |
| 2.1.4 International students..... n/a n/a | | |
| 2.1.5 Brain gain..... 30.12 83 | | |
| 2.2 Internal Openness..... 37.43 104 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... 40.23 68 | | |
| 2.2.2 Tolerance of immigrants..... 60.56 51 | | |
| 2.2.3 Social mobility..... 26.43 105 | | |
| Gender Equality | | |
| 2.2.4 Female graduates n/a n/a | | |
| 2.2.5 Gender earnings gap 37.35 89 | | |
| 2.2.6 Leadership opportunities for women..... 22.58 93 | | |

| | Score | Rank |
|---|-------|------|
| 3 GROW..... 23.37 110 | | |
| 3.1 Formal Education..... 9.98 109 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment 2.32 102 | | |
| 3.1.2 Tertiary enrolment..... n/a n/a | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... 27.62 41 | | |
| 3.1.4 Reading, maths, and science n/a n/a | | |
| 3.1.5 University ranking 0.00 76 | | |
| 3.2 Lifelong Learning..... 38.22 70 | | |
| 3.2.1 Quality of management schools..... 30.95 95 | | |
| 3.2.2 Prevalence of training in firms..... 57.78 27 | | |
| 3.2.3 Employee development..... 25.93 92 | | |
| 3.3 Access to Growth Opportunities 21.92 117 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority..... 27.09 96 | | |
| 3.3.2 Personal rights..... 38.16 84 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... 37.27 113 | | |
| 3.3.4 Use of virtual professional networks..... 9.35 72 | | |
| 3.3.5 Collaboration within organisations 19.63 108 | | |
| 3.3.6 Collaboration across organisations 0.00 118 | | |
| 4 RETAIN..... 32.71 98 | | |
| 4.1 Sustainability 19.02 112 | | |
| 4.1.1 Pension system 20.41 76 | | |
| 4.1.2 Social protection 7.95 114 | | |
| 4.1.3 Brain retention 28.70 89 | | |
| 4.2 Lifestyle 46.40 91 | | |
| 4.2.1 Environmental performance..... 50.56 95 | | |
| 4.2.2 Personal safety 57.25 77 | | |
| 4.2.3 Physician density 14.26 83 | | |
| 4.2.4 Sanitation 63.52 90 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... 20.17 117 | | |
| 5.1 Mid-Level Skills 34.84 62 | | |
| 5.1.1 Workforce with secondary education 31.12 58 | | |
| 5.1.2 Population with secondary education n/a n/a | | |
| 5.1.3 Technicians and associate professionals 38.57 55 | | |
| 5.1.4 Labour productivity per employee..... n/a n/a | | |
| 5.2 Employability..... 5.49 119 | | |
| 5.2.1 Ease of finding skilled employees 14.52 116 | | |
| 5.2.2 Relevance of education system to the economy 7.45 114 | | |
| 5.2.3 Skills matching with secondary education..... 0.00 118 | | |
| 5.2.4 Skills matching with tertiary education 0.00 118 | | |
| 6 GLOBAL KNOWLEDGE SKILLS 6.49 115 | | |
| 6.1 High-Level Skills 11.98 103 | | |
| 6.1.1 Workforce with tertiary education 21.28 81 | | |
| 6.1.2 Population with tertiary education n/a n/a | | |
| 6.1.3 Professionals..... 7.51 96 | | |
| 6.1.4 Researchers..... n/a n/a | | |
| 6.1.5 Senior officials and managers 15.00 74 | | |
| 6.1.6 Availability of scientists and engineers 4.12 117 | | |
| 6.2 Talent Impact..... 1.01 119 | | |
| 6.2.1 Innovation output..... n/a n/a | | |
| 6.2.2 High-value exports..... 0.94 106 | | |
| 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..... 1.07 115 | | |

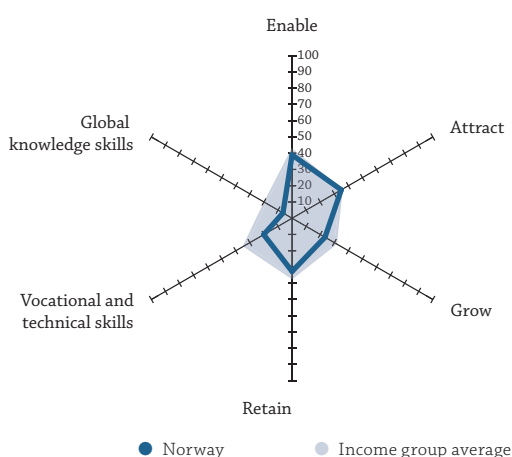
NORWAY

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 4 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 5.20 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 61,471.60 |
| GDP (US\$ billions) | 388.31 |
| GTCI score..... | 74.56 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 82.58 | 10 |
| 1.1 Regulatory Landscape..... | 90.07 | 6 |
| 1.1.1 Government effectiveness | 89.97 | 4 |
| 1.1.2 Business-government relations | 90.51 | 7 |
| 1.1.3 Political stability | 91.75 | 8 |
| 1.1.4 Regulatory quality | 84.71 | 15 |
| 1.1.5 Corruption | 93.42 | 6 |
| 1.2 Market Landscape..... | 79.93 | 12 |
| 1.2.1 Competition intensity | 68.86 | 64 |
| 1.2.2 Ease of doing business | 92.19 | 5 |
| 1.2.3 Cluster development | 89.16 | 8 |
| 1.2.4 R&D expenditure | 39.72 | 20 |
| 1.2.5 ICT infrastructure | 94.27 | 8 |
| 1.2.6 Technology utilisation | 95.41 | 4 |
| 1.3 Business and Labour Landscape..... | 77.74 | 16 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 39.00 | 100 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 84.87 | 9 |
| 1.3.4 Labour-employer cooperation | 100.00 | 1 |
| Management Practice | | |
| 1.3.5 Professional management..... | 97.13 | 5 |
| 1.3.6 Relationship of pay to productivity..... | 75.42 | 14 |
| 2 ATTRACT..... | 69.34 | 12 |
| 2.1 External Openness | 53.34 | 24 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 72.85 | 13 |
| 2.1.2 Prevalence of foreign ownership | 76.54 | 25 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 31.27 | 24 |
| 2.1.4 International students..... | 18.39 | 49 |
| 2.1.5 Brain gain..... | 67.67 | 17 |
| 2.2 Internal Openness..... | 85.35 | 4 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 72.41 | 13 |
| 2.2.2 Tolerance of immigrants..... | 88.73 | 12 |
| 2.2.3 Social mobility..... | 97.00 | 4 |
| Gender Equality | | |
| 2.2.4 Female graduates | 79.23 | 42 |
| 2.2.5 Gender earnings gap | 74.70 | 10 |
| 2.2.6 Leadership opportunities for women..... | 100.00 | 1 |

| | Score | Rank |
|---|--------------|----------|
| 3 GROW..... | 78.30 | 5 |
| 3.1 Formal Education..... | 58.64 | 12 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 45.93 | 21 |
| 3.1.2 Tertiary enrolment..... | 67.13 | 20 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 46.55 | 10 |
| 3.1.4 Reading, maths, and science | 77.82 | 14 |
| 3.1.5 University ranking | 55.80 | 22 |
| 3.2 Lifelong Learning..... | 87.52 | 6 |
| 3.2.1 Quality of management schools..... | 80.42 | 10 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 94.61 | 2 |
| 3.3 Access to Growth Opportunities | 88.74 | 4 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 93.85 | 2 |
| 3.3.2 Personal rights..... | 88.17 | 16 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 97.88 | 5 |
| 3.3.4 Use of virtual professional networks..... | 66.33 | 13 |
| 3.3.5 Collaboration within organisations | 95.86 | 2 |
| 3.3.6 Collaboration across organisations | 90.34 | 12 |

| | | |
|--------------------------------------|--------------|----------|
| 4 RETAIN..... | 91.63 | 2 |
| 4.1 Sustainability | 93.67 | 2 |
| 4.1.1 Pension system | 92.86 | 8 |
| 4.1.2 Social protection | 100.00 | 1 |
| 4.1.3 Brain retention | 88.15 | 4 |
| 4.2 Lifestyle..... | 89.58 | 4 |
| 4.2.1 Environmental performance..... | 92.95 | 17 |
| 4.2.2 Personal safety | 97.03 | 5 |
| 4.2.3 Physician density | 70.51 | 5 |
| 4.2.4 Sanitation | 97.84 | 31 |

| | | |
|--|--------------|----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 73.67 | 6 |
| 5.1 Mid-Level Skills | 60.41 | 12 |
| 5.1.1 Workforce with secondary education | 34.33 | 47 |
| 5.1.2 Population with secondary education | 54.21 | 28 |
| 5.1.3 Technicians and associate professionals | 75.34 | 13 |
| 5.1.4 Labour productivity per employee..... | 77.75 | 7 |
| 5.2 Employability..... | 86.93 | 4 |
| 5.2.1 Ease of finding skilled employees | 100.00 | 1 |
| 5.2.2 Relevance of education system to the economy | 82.45 | 7 |
| 5.2.3 Skills matching with secondary education..... | 77.05 | 20 |
| 5.2.4 Skills matching with tertiary education | 88.20 | 14 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 51.83 | 17 |
| 6.1 High-Level Skills | 62.36 | 6 |
| 6.1.1 Workforce with tertiary education | 60.51 | 11 |
| 6.1.2 Population with tertiary education | 42.54 | 18 |
| 6.1.3 Professionals..... | 75.72 | 3 |
| 6.1.4 Researchers..... | 71.62 | 7 |
| 6.1.5 Senior officials and managers | 48.75 | 22 |
| 6.1.6 Availability of scientists and engineers | 75.00 | 11 |
| 6.2 Talent Impact..... | 41.31 | 29 |
| 6.2.1 Innovation output..... | 58.70 | 22 |
| 6.2.2 High-value exports..... | 38.61 | 14 |
| 6.2.3 New product entrepreneurial activity | 12.87 | 84 |
| 6.2.4 New business density | 44.63 | 14 |
| 6.2.5 Scientific journal articles..... | 51.76 | 30 |

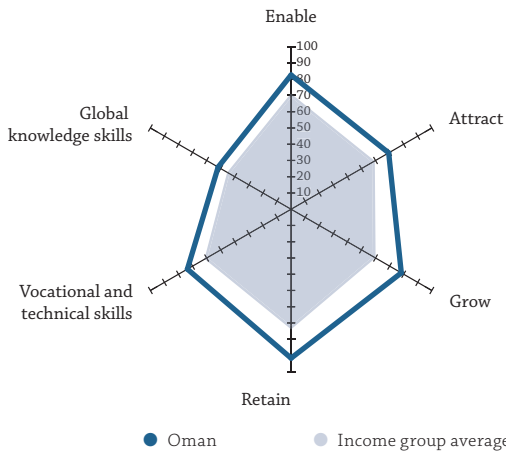
OMAN

Key Indicators

| | |
|----------------------------|--------------------------------------|
| Rank (out of 119)..... | 56 |
| Income group | High income |
| Regional group..... | North Africa and Western Asia |
| Population (millions)..... | 4.49 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 38,234.10 |
| GDP (US\$ billions) | 70.25 |
| GTCI score..... | 43.93 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 58.02 | 42 |
| 1.1 Regulatory Landscape..... | 61.44 | 41 |
| 1.1.1 Government effectiveness | 44.47 | 65 |
| 1.1.2 Business-government relations..... | 82.12 | 13 |
| 1.1.3 Political stability..... | 80.58 | 32 |
| 1.1.4 Regulatory quality..... | 59.22 | 44 |
| 1.1.5 Corruption..... | 40.79 | 52 |
| 1.2 Market Landscape..... | 46.55 | 65 |
| 1.2.1 Competition intensity..... | 53.43 | 97 |
| 1.2.2 Ease of doing business..... | 64.06 | 61 |
| 1.2.3 Cluster development..... | 43.65 | 62 |
| 1.2.4 R&D expenditure..... | 3.74 | 84 |
| 1.2.5 ICT infrastructure..... | 64.94 | 52 |
| 1.2.6 Technology utilisation..... | 49.47 | 52 |
| 1.3 Business and Labour Landscape..... | 66.08 | 33 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 89.00 | 25 |
| 1.3.2 Ease of redundancy..... | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 67.17 | 38 |
| 1.3.4 Labour-employer cooperation..... | 54.20 | 51 |
| Management Practice | | |
| 1.3.5 Professional management..... | 46.70 | 54 |
| 1.3.6 Relationship of pay to productivity..... | 39.39 | 72 |
| 2 ATTRACT..... | 53.08 | 32 |
| 2.1 External Openness..... | 51.39 | 28 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 43.08 | 77 |
| 2.1.2 Prevalence of foreign ownership..... | 49.38 | 83 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 90.51 | 7 |
| 2.1.4 International students..... | 14.52 | 55 |
| 2.1.5 Brain gain..... | 59.44 | 24 |
| 2.2 Internal Openness..... | 54.77 | 46 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 80.46 | 6 |
| 2.2.2 Tolerance of immigrants..... | n/a | n/a |
| 2.2.3 Social mobility..... | 53.41 | 41 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 71.61 | 63 |
| 2.2.5 Gender earnings gap..... | 6.02 | 115 |
| 2.2.6 Leadership opportunities for women..... | 62.37 | 28 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 33.60 | 84 |
| 3.1 Formal Education..... | 20.44 | 78 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 0.00 | 109 |
| 3.1.2 Tertiary enrolment..... | 27.52 | 75 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 26.60 | 45 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 27.65 | 50 |
| 3.2 Lifelong Learning..... | 37.07 | 74 |
| 3.2.1 Quality of management schools..... | 25.66 | 104 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 48.48 | 45 |
| 3.3 Access to Growth Opportunities..... | 43.29 | 79 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 40.78 | 71 |
| 3.3.2 Personal rights..... | 32.59 | 93 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 65.76 | 75 |
| 3.3.4 Use of virtual professional networks..... | 16.90 | 58 |
| 3.3.5 Collaboration within organisations..... | 35.18 | 72 |
| 3.3.6 Collaboration across organisations..... | 68.56 | 62 |
| 4 RETAIN..... | 57.49 | 49 |
| 4.1 Sustainability..... | 56.81 | 33 |
| 4.1.1 Pension system..... | n/a | n/a |
| 4.1.2 Social protection..... | 56.89 | 30 |
| 4.1.3 Brain retention..... | 56.72 | 33 |
| 4.2 Lifestyle..... | 58.17 | 68 |
| 4.2.1 Environmental performance..... | 42.98 | 99 |
| 4.2.2 Personal safety..... | 69.10 | 53 |
| 4.2.3 Physician density..... | 24.36 | 69 |
| 4.2.4 Sanitation..... | 96.25 | 42 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 44.84 | 55 |
| 5.1 Mid-Level Skills..... | 41.75 | 48 |
| 5.1.1 Workforce with secondary education..... | n/a | n/a |
| 5.1.2 Population with secondary education..... | 41.37 | 48 |
| 5.1.3 Technicians and associate professionals..... | n/a | n/a |
| 5.1.4 Labour productivity per employee..... | 42.14 | 33 |
| 5.2 Employability..... | 47.93 | 80 |
| 5.2.1 Ease of finding skilled employees..... | 26.40 | 104 |
| 5.2.2 Relevance of education system to the economy..... | 37.74 | 70 |
| 5.2.3 Skills matching with secondary education..... | 59.16 | 74 |
| 5.2.4 Skills matching with tertiary education..... | 68.41 | 73 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 16.57 | 93 |
| 6.1 High-Level Skills..... | 23.08 | 76 |
| 6.1.1 Workforce with tertiary education..... | n/a | n/a |
| 6.1.2 Population with tertiary education..... | 32.25 | 35 |
| 6.1.3 Professionals..... | n/a | n/a |
| 6.1.4 Researchers..... | 2.30 | 75 |
| 6.1.5 Senior officials and managers..... | n/a | n/a |
| 6.1.6 Availability of scientists and engineers..... | 34.71 | 72 |
| 6.2 Talent Impact..... | 10.06 | 102 |
| 6.2.1 Innovation output..... | 19.86 | 87 |
| 6.2.2 High-value exports..... | 7.72 | 73 |
| 6.2.3 New product entrepreneurial activity..... | n/a | n/a |
| 6.2.4 New business density..... | 5.75 | 67 |
| 6.2.5 Scientific journal articles..... | 6.92 | 85 |

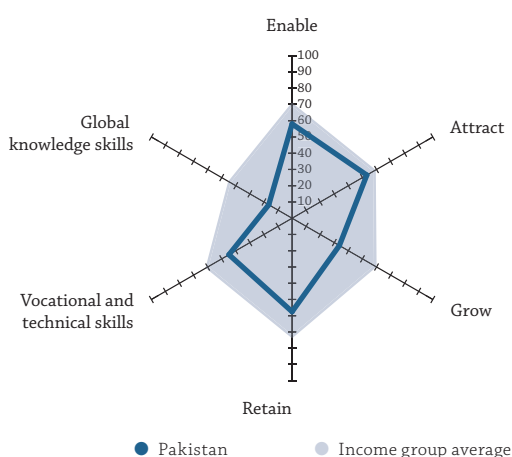
PAKISTAN

Key Indicators

| | |
|-----------------------------|----------------------------------|
| Rank (out of 119)..... | 109 |
| Income group | Lower middle income |
| Regional group | Central and Southern Asia |
| Population (millions) | 188.92 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 5,041.72 |
| GDP (US\$ billions) | 269.97 |
| GTCI score | 26.94 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....29.10 114 | | |
| 1.1 Regulatory Landscape..... | 24.13 | 116 |
| 1.1.1 Government effectiveness | 25.19 | 100 |
| 1.1.2 Business-government relations | 39.51 | 99 |
| 1.1.3 Political stability | 2.18 | 118 |
| 1.1.4 Regulatory quality | 30.10 | 103 |
| 1.1.5 Corruption | 23.68 | 89 |
| 1.2 Market Landscape..... | 27.64 | 109 |
| 1.2.1 Competition intensity | 49.71 | 105 |
| 1.2.2 Ease of doing business | 34.30 | 109 |
| 1.2.3 Cluster development | 40.87 | 70 |
| 1.2.4 R&D expenditure | 6.54 | 75 |
| 1.2.5 ICT infrastructure | 11.46 | 109 |
| 1.2.6 Technology utilisation | 22.97 | 101 |
| 1.3 Business and Labour Landscape..... | 35.51 | 110 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 11.00 | 114 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 59.43 | 63 |
| 1.3.4 Labour-employer cooperation | 23.31 | 115 |
| Management Practice | | |
| 1.3.5 Professional management..... | 16.33 | 105 |
| 1.3.6 Relationship of pay to productivity..... | 33.00 | 88 |
| 2 ATTRACT..... 23.66 116 | | |
| 2.1 External Openness | 30.05 | 78 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 42.82 | 78 |
| 2.1.2 Prevalence of foreign ownership | 36.54 | 102 |
| Attract People | | |
| 2.1.3 Migrant stock | 4.08 | 80 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain | 36.75 | 74 |
| 2.2 Internal Openness | 17.26 | 118 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 0.00 | 119 |
| 2.2.2 Tolerance of immigrants..... | 43.66 | 83 |
| 2.2.3 Social mobility..... | 28.61 | 102 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 7.23 | 113 |
| 2.2.6 Leadership opportunities for women | 6.81 | 112 |

| | Score | Rank |
|--|-------|------|
| 3 GROW.....25.13 108 | | |
| 3.1 Formal Education..... | 12.15 | 102 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 4.33 | 95 |
| 3.1.2 Tertiary enrolment..... | 8.07 | 100 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 13.30 | 84 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 22.91 | 55 |
| 3.2 Lifelong Learning..... | 32.37 | 92 |
| 3.2.1 Quality of management schools..... | 37.83 | 75 |
| 3.2.2 Prevalence of training in firms..... | 37.73 | 49 |
| 3.2.3 Employee development..... | 21.55 | 104 |
| 3.3 Access to Growth Opportunities | 30.86 | 111 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 22.63 | 109 |
| 3.3.2 Personal rights..... | 32.74 | 91 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 29.09 | 116 |
| 3.3.4 Use of virtual professional networks..... | 4.46 | 91 |
| 3.3.5 Collaboration within organisations | 25.59 | 97 |
| 3.3.6 Collaboration across organisations | 70.65 | 50 |
| 4 RETAIN.....27.72 107 | | |
| 4.1 Sustainability | 22.05 | 107 |
| 4.1.1 Pension system | 2.04 | 100 |
| 4.1.2 Social protection | 24.70 | 86 |
| 4.1.3 Brain retention | 39.41 | 69 |
| 4.2 Lifestyle | 33.39 | 102 |
| 4.2.1 Environmental performance..... | 26.73 | 107 |
| 4.2.2 Personal safety | 35.67 | 107 |
| 4.2.3 Physician density | 12.66 | 85 |
| 4.2.4 Sanitation | 58.52 | 93 |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....33.51 92 | | |
| 5.1 Mid-Level Skills | 17.15 | 94 |
| 5.1.1 Workforce with secondary education | 9.43 | 97 |
| 5.1.2 Population with secondary education | 26.96 | 67 |
| 5.1.3 Technicians and associate professionals | 22.87 | 80 |
| 5.1.4 Labour productivity per employee..... | 9.34 | 83 |
| 5.2 Employability..... | 49.88 | 76 |
| 5.2.1 Ease of finding skilled employees | 32.34 | 88 |
| 5.2.2 Relevance of education system to the economy | 41.11 | 61 |
| 5.2.3 Skills matching with secondary education..... | 56.99 | 87 |
| 5.2.4 Skills matching with tertiary education | 69.08 | 69 |
| 6 GLOBAL KNOWLEDGE SKILLS.....22.51 73 | | |
| 6.1 High-Level Skills | 28.34 | 63 |
| 6.1.1 Workforce with tertiary education | 36.23 | 45 |
| 6.1.2 Population with tertiary education | 10.81 | 82 |
| 6.1.3 Professionals | 1.73 | 107 |
| 6.1.4 Researchers..... | 3.42 | 71 |
| 6.1.5 Senior officials and managers | 78.13 | 6 |
| 6.1.6 Availability of scientists and engineers | 39.71 | 61 |
| 6.2 Talent Impact..... | 16.69 | 84 |
| 6.2.1 Innovation output..... | 16.34 | 97 |
| 6.2.2 High-value exports..... | 3.01 | 94 |
| 6.2.3 New product entrepreneurial activity | 47.78 | 40 |
| 6.2.4 New business density | 0.06 | 94 |
| 6.2.5 Scientific journal articles..... | 16.27 | 64 |

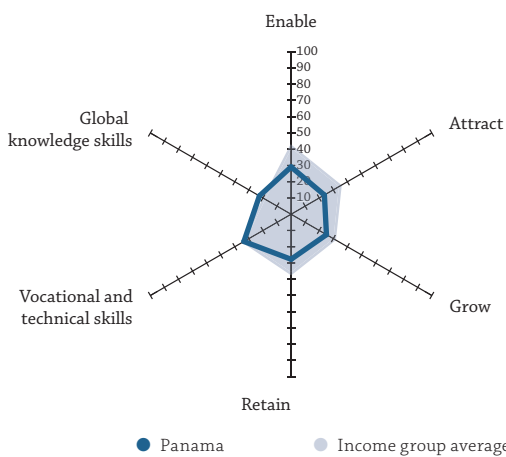
PANAMA

Key Indicators

Rank (out of 119)..... **45**
 Income group **Upper middle income**
 Regional group **Latin, Central America and Caribbean**
 Population (millions) **3.93**

GDP per capita (PPP US\$) **22,192.10**
 GDP (US\$ billions) **52.13**
 GTCI score **46.88**
 GTCI score (income group average) **40.93**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE | 51.24 | 60 |
| 1.1 Regulatory Landscape..... | 54.41 | 49 |
| 1.1.1 Government effectiveness..... | 49.87 | 50 |
| 1.1.2 Business-government relations..... | 62.69 | 42 |
| 1.1.3 Political stability..... | 73.79 | 43 |
| 1.1.4 Regulatory quality..... | 54.13 | 54 |
| 1.1.5 Corruption..... | 31.58 | 70 |
| 1.2 Market Landscape..... | 52.66 | 45 |
| 1.2.1 Competition intensity..... | 76.86 | 31 |
| 1.2.2 Ease of doing business..... | 61.19 | 64 |
| 1.2.3 Cluster development..... | 57.89 | 35 |
| 1.2.4 R&D expenditure..... | 1.40 | 98 |
| 1.2.5 ICT infrastructure..... | 45.84 | 76 |
| 1.2.6 Technology utilisation..... | 72.79 | 26 |
| 1.3 Business and Labour Landscape..... | 46.63 | 91 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 22.33 | 105 |
| 1.3.2 Ease of redundancy..... | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 70.23 | 30 |
| 1.3.4 Labour-employer cooperation..... | 59.62 | 38 |
| Management Practice | | |
| 1.3.5 Professional management..... | 41.83 | 64 |
| 1.3.6 Relationship of pay to productivity..... | 45.79 | 61 |
| 2 ATTRACT | 62.92 | 20 |
| 2.1 External Openness..... | 64.18 | 12 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 80.16 | 5 |
| 2.1.2 Prevalence of foreign ownership..... | 90.86 | 7 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 10.22 | 55 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 75.50 | 11 |
| 2.2 Internal Openness..... | 61.66 | 27 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 50.57 | 50 |
| 2.2.2 Tolerance of immigrants..... | 56.34 | 59 |
| 2.2.3 Social mobility..... | 63.49 | 29 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 95.54 | 7 |
| 2.2.5 Gender earnings gap..... | 54.22 | 48 |
| 2.2.6 Leadership opportunities for women..... | 49.82 | 44 |

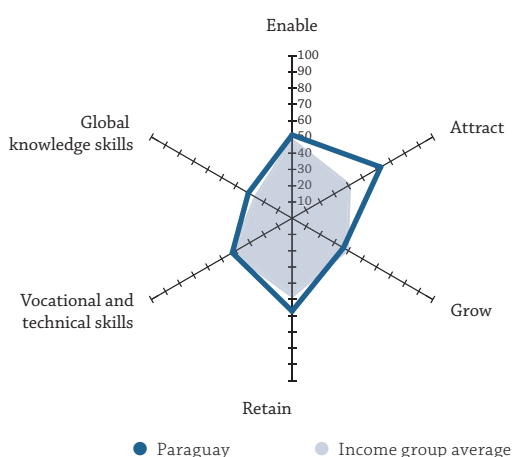
| | Score | Rank |
|---|--------------|-----------|
| 3 GROW | 36.45 | 73 |
| 3.1 Formal Education..... | 17.98 | 87 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 22.50 | 53 |
| 3.1.2 Tertiary enrolment..... | 33.55 | 66 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 15.86 | 78 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 32.21 | 94 |
| 3.2.1 Quality of management schools..... | 36.77 | 77 |
| 3.2.2 Prevalence of training in firms..... | 10.03 | 87 |
| 3.2.3 Employee development..... | 49.83 | 42 |
| 3.3 Access to Growth Opportunities..... | 59.15 | 33 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 53.63 | 33 |
| 3.3.2 Personal rights..... | 70.05 | 45 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 82.73 | 27 |
| 3.3.4 Use of virtual professional networks..... | 25.62 | 40 |
| 3.3.5 Collaboration within organisations..... | 45.72 | 42 |
| 3.3.6 Collaboration across organisations..... | 77.17 | 31 |
| 4 RETAIN | 57.17 | 50 |
| 4.1 Sustainability..... | 55.33 | 35 |
| 4.1.1 Pension system..... | n/a | n/a |
| 4.1.2 Social protection..... | 41.86 | 49 |
| 4.1.3 Brain retention..... | 68.79 | 20 |
| 4.2 Lifestyle..... | 59.02 | 67 |
| 4.2.1 Environmental performance..... | 76.33 | 49 |
| 4.2.2 Personal safety..... | 62.97 | 66 |
| 4.2.3 Physician density..... | 25.16 | 66 |
| 4.2.4 Sanitation..... | 71.59 | 85 |
| 5 VOCATIONAL AND TECHNICAL SKILLS | 42.45 | 65 |
| 5.1 Mid-Level Skills..... | 32.87 | 65 |
| 5.1.1 Workforce with secondary education..... | 38.24 | 33 |
| 5.1.2 Population with secondary education..... | 28.53 | 65 |
| 5.1.3 Technicians and associate professionals..... | 31.84 | 67 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 52.04 | 70 |
| 5.2.1 Ease of finding skilled employees..... | 37.29 | 75 |
| 5.2.2 Relevance of education system to the economy..... | 32.69 | 79 |
| 5.2.3 Skills matching with secondary education..... | 65.92 | 48 |
| 5.2.4 Skills matching with tertiary education..... | 72.25 | 54 |
| 6 GLOBAL KNOWLEDGE SKILLS | 31.07 | 53 |
| 6.1 High-Level Skills..... | 29.23 | 58 |
| 6.1.1 Workforce with tertiary education..... | 40.53 | 39 |
| 6.1.2 Population with tertiary education..... | 31.22 | 39 |
| 6.1.3 Professionals..... | 28.90 | 58 |
| 6.1.4 Researchers..... | 0.33 | 93 |
| 6.1.5 Senior officials and managers..... | 35.00 | 39 |
| 6.1.6 Availability of scientists and engineers..... | 39.41 | 63 |
| 6.2 Talent Impact..... | 32.92 | 52 |
| 6.2.1 Innovation output..... | 34.80 | 54 |
| 6.2.2 High-value exports..... | 0.00 | 110 |
| 6.2.3 New product entrepreneurial activity..... | 45.04 | 44 |
| 6.2.4 New business density..... | 81.66 | 5 |
| 6.2.5 Scientific journal articles..... | 3.09 | 104 |

PARAGUAY

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 99 |
| Income group | Upper middle income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 6.64 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 37.69 | 102 |
| 1.1 Regulatory Landscape..... | 39.14 | 91 |
| 1.1.1 Government effectiveness | 17.74 | 114 |
| 1.1.2 Business-government relations | 54.97 | 67 |
| 1.1.3 Political stability | 63.35 | 60 |
| 1.1.4 Regulatory quality | 38.59 | 84 |
| 1.1.5 Corruption | 21.05 | 95 |
| 1.2 Market Landscape..... | 37.82 | 92 |
| 1.2.1 Competition intensity | 66.00 | 69 |
| 1.2.2 Ease of doing business | 47.84 | 88 |
| 1.2.3 Cluster development | 17.96 | 113 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 35.06 | 88 |
| 1.2.6 Technology utilisation | 22.26 | 102 |
| 1.3 Business and Labour Landscape..... | 36.12 | 108 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 44.33 | 94 |
| 1.3.2 Ease of redundancy | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 51.32 | 88 |
| 1.3.4 Labour-employer cooperation | 47.15 | 70 |
| Management Practice | | |
| 1.3.5 Professional management..... | 16.05 | 106 |
| 1.3.6 Relationship of pay to productivity..... | 17.85 | 112 |
| 2 ATTRACT..... | 40.36 | 69 |
| 2.1 External Openness | 34.03 | 68 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 40.99 | 82 |
| 2.1.2 Prevalence of foreign ownership | 53.33 | 72 |
| Attract People | | |
| 2.1.3 Migrant stock | 5.05 | 74 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 36.75 | 74 |
| 2.2 Internal Openness..... | 46.69 | 77 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 47.13 | 56 |
| 2.2.2 Tolerance of immigrants..... | 80.28 | 24 |
| 2.2.3 Social mobility..... | 43.60 | 61 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 50.60 | 62 |
| 2.2.6 Leadership opportunities for women..... | 11.83 | 104 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 9,184.49 |
| GDP (US\$ billions) | 27.62 |
| GTCI score..... | 31.83 |
| GTCI score (income group average) | 40.93 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 30.71 | 93 |
| 3.1 Formal Education..... | 20.35 | 79 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 24.99 | 49 |
| 3.1.2 Tertiary enrolment..... | 30.32 | 73 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 26.09 | 49 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 35.32 | 80 |
| 3.2.1 Quality of management schools..... | 16.14 | 113 |
| 3.2.2 Prevalence of training in firms..... | 67.94 | 17 |
| 3.2.3 Employee development..... | 21.89 | 103 |
| 3.3 Access to Growth Opportunities | 36.45 | 102 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 22.91 | 108 |
| 3.3.2 Personal rights..... | 57.28 | 65 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 54.85 | 93 |
| 3.3.4 Use of virtual professional networks..... | 7.95 | 79 |
| 3.3.5 Collaboration within organisations | 20.49 | 106 |
| 3.3.6 Collaboration across organisations | 55.20 | 106 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 39.72 | 89 |
| 4.1 Sustainability | 23.21 | 105 |
| 4.1.1 Pension system | 10.20 | 84 |
| 4.1.2 Social protection | 16.84 | 101 |
| 4.1.3 Brain retention | 42.60 | 57 |
| 4.2 Lifestyle | 56.24 | 72 |
| 4.2.1 Environmental performance..... | 62.08 | 73 |
| 4.2.2 Personal safety | 55.47 | 81 |
| 4.2.3 Physician density | 20.35 | 73 |
| 4.2.4 Sanitation | 87.05 | 67 |

| | | |
|--|--------------|------------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 29.16 | 105 |
| 5.1 Mid-Level Skills | 29.83 | 71 |
| 5.1.1 Workforce with secondary education | 21.45 | 76 |
| 5.1.2 Population with secondary education | 33.95 | 59 |
| 5.1.3 Technicians and associate professionals | 34.08 | 61 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 28.50 | 116 |
| 5.2.1 Ease of finding skilled employees | 9.90 | 117 |
| 5.2.2 Relevance of education system to the economy | 2.64 | 118 |
| 5.2.3 Skills matching with secondary education..... | 48.25 | 107 |
| 5.2.4 Skills matching with tertiary education | 53.21 | 114 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 13.32 | 97 |
| 6.1 High-Level Skills | 14.36 | 98 |
| 6.1.1 Workforce with tertiary education | 31.78 | 59 |
| 6.1.2 Population with tertiary education | 12.01 | 81 |
| 6.1.3 Professionals..... | 19.65 | 73 |
| 6.1.4 Researchers..... | 2.08 | 77 |
| 6.1.5 Senior officials and managers | 20.63 | 63 |
| 6.1.6 Availability of scientists and engineers | 0.00 | 119 |
| 6.2 Talent Impact..... | 12.29 | 92 |
| 6.2.1 Innovation output..... | 24.78 | 78 |
| 6.2.2 High-value exports..... | 10.73 | 64 |
| 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..... | 1.35 | 114 |

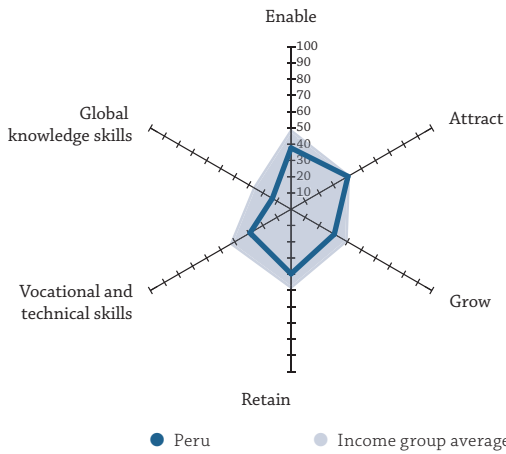
PERU

Key Indicators

Rank (out of 119)..... **74**
 Income group **Upper middle income**
 Regional group **Latin, Central America and Caribbean**
 Population (millions) **31.38**

GDP per capita (PPP US\$) **12,402.40**
 GDP (US\$ billions) **192.08**
 GTCI score **38.51**
 GTCI score (income group average) **40.93**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE | 46.49 | 82 |
| 1.1 Regulatory Landscape..... | 45.12 | 76 |
| 1.1.1 Government effectiveness..... | 34.96 | 85 |
| 1.1.2 Business-government relations..... | 54.53 | 68 |
| 1.1.3 Political stability..... | 51.46 | 85 |
| 1.1.4 Regulatory quality..... | 57.04 | 46 |
| 1.1.5 Corruption..... | 27.63 | 79 |
| 1.2 Market Landscape..... | 47.90 | 59 |
| 1.2.1 Competition intensity..... | 70.00 | 62 |
| 1.2.2 Ease of doing business..... | 68.75 | 51 |
| 1.2.3 Cluster development..... | 28.17 | 92 |
| 1.2.4 R&D expenditure..... | n/a | n/a |
| 1.2.5 ICT infrastructure..... | 39.70 | 82 |
| 1.2.6 Technology utilisation..... | 32.86 | 89 |
| 1.3 Business and Labour Landscape..... | 46.44 | 92 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 55.67 | 69 |
| 1.3.2 Ease of redundancy..... | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 47.29 | 101 |
| 1.3.4 Labour-employer cooperation..... | 48.51 | 67 |
| Management Practice | | |
| 1.3.5 Professional management..... | 48.14 | 49 |
| 1.3.6 Relationship of pay to productivity..... | 39.06 | 75 |
| 2 ATTRACT | 41.85 | 63 |
| 2.1 External Openness..... | 44.28 | 36 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 57.70 | 42 |
| 2.1.2 Prevalence of foreign ownership..... | 70.12 | 40 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 0.49 | 111 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 48.80 | 41 |
| 2.2 Internal Openness..... | 39.43 | 98 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 28.74 | 87 |
| 2.2.2 Tolerance of immigrants..... | 59.15 | 53 |
| 2.2.3 Social mobility..... | 50.68 | 47 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | n/a | n/a |
| 2.2.5 Gender earnings gap..... | 48.19 | 70 |
| 2.2.6 Leadership opportunities for women..... | 10.39 | 106 |

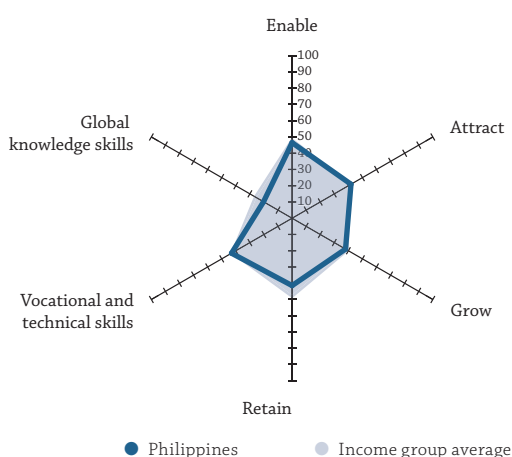
| | Score | Rank |
|---|--------------|-----------|
| 3 GROW | 37.96 | 68 |
| 3.1 Formal Education..... | 19.61 | 81 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 2.19 | 103 |
| 3.1.2 Tertiary enrolment..... | 35.12 | 63 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 13.81 | 83 |
| 3.1.4 Reading, maths, and science..... | 25.67 | 63 |
| 3.1.5 University ranking..... | 21.26 | 61 |
| 3.2 Lifelong Learning..... | 49.56 | 45 |
| 3.2.1 Quality of management schools..... | 40.21 | 70 |
| 3.2.2 Prevalence of training in firms..... | 74.80 | 9 |
| 3.2.3 Employee development..... | 33.67 | 72 |
| 3.3 Access to Growth Opportunities..... | 44.70 | 72 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 47.21 | 51 |
| 3.3.2 Personal rights..... | 63.34 | 54 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 52.42 | 96 |
| 3.3.4 Use of virtual professional networks..... | 1.52 | 105 |
| 3.3.5 Collaboration within organisations..... | 36.48 | 69 |
| 3.3.6 Collaboration across organisations..... | 67.23 | 67 |
| 4 RETAIN | 41.45 | 81 |
| 4.1 Sustainability..... | 30.30 | 80 |
| 4.1.1 Pension system..... | 20.41 | 76 |
| 4.1.2 Social protection..... | 21.99 | 91 |
| 4.1.3 Brain retention..... | 48.52 | 41 |
| 4.2 Lifestyle..... | 52.59 | 84 |
| 4.2.1 Environmental performance..... | 66.91 | 65 |
| 4.2.2 Personal safety..... | 52.87 | 86 |
| 4.2.3 Physician density..... | 17.63 | 80 |
| 4.2.4 Sanitation..... | 72.95 | 84 |
| 5 VOCATIONAL AND TECHNICAL SKILLS | 43.03 | 62 |
| 5.1 Mid-Level Skills..... | 41.99 | 47 |
| 5.1.1 Workforce with secondary education..... | 37.98 | 34 |
| 5.1.2 Population with secondary education..... | 49.93 | 33 |
| 5.1.3 Technicians and associate professionals..... | 30.04 | 70 |
| 5.1.4 Labour productivity per employee..... | 49.99 | 26 |
| 5.2 Employability..... | 44.06 | 95 |
| 5.2.1 Ease of finding skilled employees..... | 40.59 | 69 |
| 5.2.2 Relevance of education system to the economy..... | 13.94 | 111 |
| 5.2.3 Skills matching with secondary education..... | 52.97 | 98 |
| 5.2.4 Skills matching with tertiary education..... | 68.75 | 71 |
| 6 GLOBAL KNOWLEDGE SKILLS | 20.29 | 78 |
| 6.1 High-Level Skills..... | 23.25 | 75 |
| 6.1.1 Workforce with tertiary education..... | 43.10 | 36 |
| 6.1.2 Population with tertiary education..... | 31.90 | 36 |
| 6.1.3 Professionals..... | 18.21 | 74 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers..... | 1.88 | 106 |
| 6.1.6 Availability of scientists and engineers..... | 21.18 | 101 |
| 6.2 Talent Impact..... | 17.32 | 82 |
| 6.2.1 Innovation output..... | 22.32 | 83 |
| 6.2.2 High-value exports..... | 8.85 | 69 |
| 6.2.3 New product entrepreneurial activity..... | 38.73 | 57 |
| 6.2.4 New business density..... | 13.99 | 40 |
| 6.2.5 Scientific journal articles..... | 2.71 | 106 |

PHILIPPINES

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 54 |
| Income group | Lower middle income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 100.70 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 51.31 | 59 |
| 1.1 Regulatory Landscape..... | 46.71 | 66 |
| 1.1.1 Government effectiveness | 44.99 | 62 |
| 1.1.2 Business-government relations | 73.29 | 23 |
| 1.1.3 Political stability | 43.45 | 95 |
| 1.1.4 Regulatory quality | 44.17 | 70 |
| 1.1.5 Corruption | 27.63 | 79 |
| 1.2 Market Landscape | 42.71 | 73 |
| 1.2.1 Competition intensity | 70.86 | 56 |
| 1.2.2 Ease of doing business | 50.39 | 83 |
| 1.2.3 Cluster development | 43.65 | 62 |
| 1.2.4 R&D expenditure | 3.04 | 88 |
| 1.2.5 ICT infrastructure | 37.79 | 86 |
| 1.2.6 Technology utilisation | 50.53 | 50 |
| 1.3 Business and Labour Landscape..... | 64.52 | 35 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 77.67 | 45 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Cluster labour market policies..... | 55.73 | 73 |
| 1.3.4 Labour-employer cooperation | 68.29 | 24 |
| Management Practice | | |
| 1.3.5 Professional management..... | 54.15 | 33 |
| 1.3.6 Relationship of pay to productivity..... | 61.28 | 34 |
| 2 ATTRACT..... | 43.62 | 56 |
| 2.1 External Openness | 30.05 | 78 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 52.74 | 58 |
| 2.1.2 Prevalence of foreign ownership | 58.27 | 56 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.31 | 114 |
| 2.1.4 International students..... | 0.37 | 96 |
| 2.1.5 Brain gain | 38.55 | 66 |
| 2.2 Internal Openness | 57.19 | 38 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 19.54 | 100 |
| 2.2.2 Tolerance of immigrants..... | 61.97 | 49 |
| 2.2.3 Social mobility..... | 40.05 | 69 |
| Gender Equality | | |
| 2.2.4 Female graduates | 76.47 | 53 |
| 2.2.5 Gender earnings gap | 62.65 | 28 |
| 2.2.6 Leadership opportunities for women..... | 82.44 | 10 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 7,358.82 |
| GDP (US\$ billions) | 291.97 |
| GTCI score | 44.17 |
| GTCI score (income group average) | 32.92 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 46.44 | 41 |
| 3.1 Formal Education..... | 21.54 | 77 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 30.91 | 72 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 5.88 | 97 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 27.82 | 49 |
| 3.2 Lifelong Learning..... | 64.10 | 26 |
| 3.2.1 Quality of management schools..... | 56.61 | 37 |
| 3.2.2 Prevalence of training in firms..... | 74.41 | 10 |
| 3.2.3 Employee development..... | 61.28 | 29 |
| 3.3 Access to Growth Opportunities | 53.69 | 41 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 55.31 | 29 |
| 3.3.2 Personal rights..... | 52.16 | 68 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 84.24 | 23 |
| 3.3.4 Use of virtual professional networks..... | 8.08 | 77 |
| 3.3.5 Collaboration within organisations | 52.96 | 33 |
| 3.3.6 Collaboration across organisations | 69.38 | 59 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 46.16 | 68 |
| 4.1 Sustainability | 31.99 | 72 |
| 4.1.1 Pension system | 23.47 | 71 |
| 4.1.2 Social protection | 25.80 | 83 |
| 4.1.3 Brain retention | 46.70 | 48 |
| 4.2 Lifestyle | 60.33 | 65 |
| 4.2.1 Environmental performance..... | 68.31 | 61 |
| 4.2.2 Personal safety | 42.33 | 103 |
| 4.2.3 Physician density | n/a | n/a |
| 4.2.4 Sanitation | 70.34 | 87 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 39.42 | 74 |
| 5.1 Mid-Level Skills | 15.37 | 97 |
| 5.1.1 Workforce with secondary education | 3.55 | 102 |
| 5.1.2 Population with secondary education | 36.38 | 54 |
| 5.1.3 Technicians and associate professionals | 11.21 | 94 |
| 5.1.4 Labour productivity per employee..... | 10.33 | 82 |
| 5.2 Employability..... | 63.47 | 38 |
| 5.2.1 Ease of finding skilled employees | 59.41 | 41 |
| 5.2.2 Relevance of education system to the economy | 54.33 | 39 |
| 5.2.3 Skills matching with secondary education..... | 64.80 | 54 |
| 5.2.4 Skills matching with tertiary education | 75.35 | 42 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 38.05 | 36 |
| 6.1 High-Level Skills | 38.25 | 38 |
| 6.1.1 Workforce with tertiary education | 36.79 | 44 |
| 6.1.2 Population with tertiary education | 43.74 | 16 |
| 6.1.3 Professionals | 12.14 | 88 |
| 6.1.4 Researchers | 2.15 | 76 |
| 6.1.5 Senior officials and managers | 100.00 | 1 |
| 6.1.6 Availability of scientists and engineers | 34.71 | 72 |
| 6.2 Talent Impact..... | 37.84 | 36 |
| 6.2.1 Innovation output..... | 29.35 | 63 |
| 6.2.2 High-value exports..... | 100.00 | 1 |
| 6.2.3 New product entrepreneurial activity | 56.43 | 24 |
| 6.2.4 New business density | 1.39 | 87 |
| 6.2.5 Scientific journal articles..... | 2.04 | 109 |

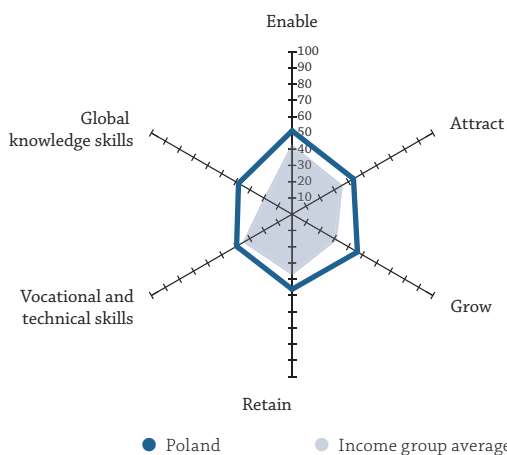
POLAND

Key Indicators

| | |
|----------------------------|--------------------|
| Rank (out of 119)..... | 39 |
| Income group..... | High income |
| Regional group..... | Europe |
| Population (millions)..... | 38.00 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 26,135.30 |
| GDP (US\$ billions)..... | 474.78 |
| GTCI score..... | 50.06 |
| GTCI score (income group average)..... | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 60.51 | 36 |
| 1.1 Regulatory Landscape..... | 65.23 | 34 |
| 1.1.1 Government effectiveness..... | 62.72 | 38 |
| 1.1.2 Business-government relations..... | 45.92 | 86 |
| 1.1.3 Political stability..... | 84.95 | 25 |
| 1.1.4 Regulatory quality..... | 69.42 | 32 |
| 1.1.5 Corruption..... | 63.16 | 27 |
| 1.2 Market Landscape..... | 56.72 | 38 |
| 1.2.1 Competition intensity..... | 73.71 | 40 |
| 1.2.2 Ease of doing business..... | 82.85 | 22 |
| 1.2.3 Cluster development..... | 42.11 | 66 |
| 1.2.4 R&D expenditure..... | 21.73 | 36 |
| 1.2.5 ICT infrastructure..... | 70.12 | 43 |
| 1.2.6 Technology utilisation..... | 49.82 | 51 |
| 1.3 Business and Labour Landscape..... | 59.56 | 50 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 89.00 | 25 |
| 1.3.2 Ease of redundancy..... | 80.00 | 44 |
| 1.3.3 Cluster labour market policies..... | 53.75 | 79 |
| 1.3.4 Labour-employer cooperation..... | 44.44 | 82 |
| Management Practice | | |
| 1.3.5 Professional management..... | 42.69 | 58 |
| 1.3.6 Relationship of pay to productivity..... | 47.47 | 58 |
| 2 ATTRACT..... | 42.87 | 61 |
| 2.1 External Openness..... | 32.62 | 73 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 56.40 | 45 |
| 2.1.2 Prevalence of foreign ownership..... | 72.35 | 33 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 3.38 | 85 |
| 2.1.4 International students..... | 7.47 | 71 |
| 2.1.5 Brain gain..... | 23.49 | 98 |
| 2.2 Internal Openness..... | 53.13 | 50 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 64.37 | 30 |
| 2.2.2 Tolerance of immigrants..... | 25.35 | 109 |
| 2.2.3 Social mobility..... | 40.05 | 69 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 99.04 | 2 |
| 2.2.5 Gender earnings gap..... | 56.63 | 44 |
| 2.2.6 Leadership opportunities for women..... | 33.33 | 73 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 45.78 | 43 |
| 3.1 Formal Education..... | 49.18 | 26 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 45.48 | 22 |
| 3.1.2 Tertiary enrolment..... | 62.23 | 24 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 28.64 | 39 |
| 3.1.4 Reading, maths, and science..... | 77.54 | 16 |
| 3.1.5 University ranking..... | 32.02 | 41 |
| 3.2 Lifelong Learning..... | 42.10 | 62 |
| 3.2.1 Quality of management schools..... | 43.39 | 62 |
| 3.2.2 Prevalence of training in firms..... | 41.16 | 46 |
| 3.2.3 Employee development..... | 41.75 | 56 |
| 3.3 Access to Growth Opportunities..... | 46.05 | 64 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 37.43 | 75 |
| 3.3.2 Personal rights..... | 82.14 | 28 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 60.91 | 85 |
| 3.3.4 Use of virtual professional networks..... | 11.44 | 68 |
| 3.3.5 Collaboration within organisations..... | 26.66 | 93 |
| 3.3.6 Collaboration across organisations..... | 57.69 | 100 |
| 4 RETAIN..... | 59.43 | 43 |
| 4.1 Sustainability..... | 43.05 | 55 |
| 4.1.1 Pension system..... | 80.61 | 29 |
| 4.1.2 Social protection..... | 18.93 | 98 |
| 4.1.3 Brain retention..... | 29.61 | 86 |
| 4.2 Lifestyle..... | 75.80 | 37 |
| 4.2.1 Environmental performance..... | 82.42 | 37 |
| 4.2.2 Personal safety..... | 87.91 | 22 |
| 4.2.3 Physician density..... | 36.06 | 53 |
| 4.2.4 Sanitation..... | 96.82 | 39 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 55.65 | 29 |
| 5.1 Mid-Level Skills..... | 57.11 | 15 |
| 5.1.1 Workforce with secondary education..... | 53.68 | 12 |
| 5.1.2 Population with secondary education..... | 80.31 | 5 |
| 5.1.3 Technicians and associate professionals..... | 56.05 | 32 |
| 5.1.4 Labour productivity per employee..... | 38.39 | 40 |
| 5.2 Employability..... | 54.18 | 61 |
| 5.2.1 Ease of finding skilled employees..... | 54.79 | 46 |
| 5.2.2 Relevance of education system to the economy..... | 38.22 | 69 |
| 5.2.3 Skills matching with secondary education..... | 58.97 | 75 |
| 5.2.4 Skills matching with tertiary education..... | 64.76 | 82 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 36.14 | 44 |
| 6.1 High-Level Skills..... | 36.19 | 43 |
| 6.1.1 Workforce with tertiary education..... | 46.26 | 31 |
| 6.1.2 Population with tertiary education..... | 7.89 | 86 |
| 6.1.3 Professionals..... | 52.02 | 21 |
| 6.1.4 Researchers..... | 25.80 | 34 |
| 6.1.5 Senior officials and managers..... | 38.13 | 34 |
| 6.1.6 Availability of scientists and engineers..... | 47.06 | 48 |
| 6.2 Talent Impact..... | 36.10 | 45 |
| 6.2.1 Innovation output..... | 43.76 | 40 |
| 6.2.2 High-value exports..... | 16.57 | 46 |
| 6.2.3 New product entrepreneurial activity..... | 61.85 | 14 |
| 6.2.4 New business density..... | 2.90 | 80 |
| 6.2.5 Scientific journal articles..... | 55.40 | 26 |

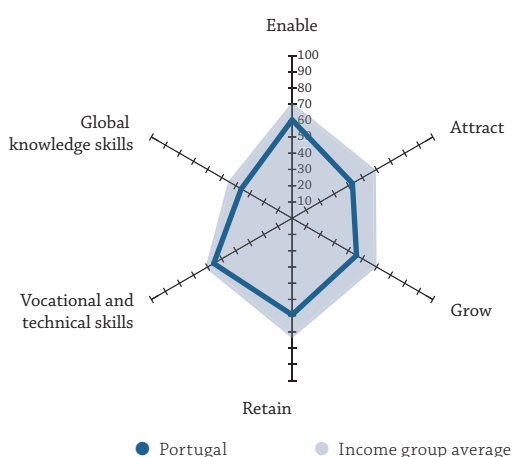
PORTUGAL

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 29 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 10.35 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 29,214.30 |
| GDP (US\$ billions) | 198.93 |
| GTCI score | 55.75 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 62.55 | 31 |
| 1.1 Regulatory Landscape..... | 70.60 | 25 |
| 1.1.1 Government effectiveness | 73.78 | 23 |
| 1.1.2 Business-government relations | 63.13 | 41 |
| 1.1.3 Political stability | 84.95 | 25 |
| 1.1.4 Regulatory quality | 67.96 | 33 |
| 1.1.5 Corruption | 63.16 | 27 |
| 1.2 Market Landscape..... | 64.31 | 29 |
| 1.2.1 Competition intensity | 71.43 | 52 |
| 1.2.2 Ease of doing business | 82.08 | 23 |
| 1.2.3 Cluster development | 56.66 | 36 |
| 1.2.4 R&D expenditure | 29.91 | 26 |
| 1.2.5 ICT infrastructure | 74.08 | 37 |
| 1.2.6 Technology utilisation | 71.73 | 28 |
| 1.3 Business and Labour Landscape..... | 52.75 | 69 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 63.67 | 52 |
| 1.3.4 Labour-employer cooperation | 55.01 | 47 |
| Management Practice | | |
| 1.3.5 Professional management..... | 36.68 | 69 |
| 1.3.6 Relationship of pay to productivity..... | 45.45 | 62 |
| 2 ATTRACT..... | 53.98 | 30 |
| 2.1 External Openness | 41.80 | 46 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 69.45 | 18 |
| 2.1.2 Prevalence of foreign ownership | 63.21 | 48 |
| Attract People | | |
| 2.1.3 Migrant stock | 17.70 | 45 |
| 2.1.4 International students..... | 21.32 | 46 |
| 2.1.5 Brain gain..... | 37.35 | 70 |
| 2.2 Internal Openness..... | 66.15 | 19 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 85.06 | 5 |
| 2.2.2 Tolerance of immigrants..... | 85.92 | 17 |
| 2.2.3 Social mobility..... | 43.32 | 64 |
| Gender Equality | | |
| 2.2.4 Female graduates | 81.32 | 39 |
| 2.2.5 Gender earnings gap | 65.06 | 22 |
| 2.2.6 Leadership opportunities for women..... | 36.20 | 70 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 50.57 | 35 |
| 3.1 Formal Education..... | 47.25 | 30 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 44.61 | 24 |
| 3.1.2 Tertiary enrolment..... | 57.32 | 34 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 20.72 | 63 |
| 3.1.4 Reading, maths, and science | 74.28 | 21 |
| 3.1.5 University ranking | 39.32 | 34 |
| 3.2 Lifelong Learning..... | 46.08 | 56 |
| 3.2.1 Quality of management schools..... | 56.88 | 36 |
| 3.2.2 Prevalence of training in firms..... | 37.60 | 50 |
| 3.2.3 Employee development..... | 43.77 | 53 |
| 3.3 Access to Growth Opportunities | 58.39 | 34 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 37.99 | 74 |
| 3.3.2 Personal rights..... | 83.34 | 24 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 75.76 | 45 |
| 3.3.4 Use of virtual professional networks..... | 50.71 | 16 |
| 3.3.5 Collaboration within organisations | 32.68 | 77 |
| 3.3.6 Collaboration across organisations | 69.85 | 56 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 76.80 | 19 |
| 4.1 Sustainability | 64.62 | 26 |
| 4.1.1 Pension system | 91.84 | 12 |
| 4.1.2 Social protection | 59.65 | 29 |
| 4.1.3 Brain retention | 42.37 | 58 |
| 4.2 Lifestyle..... | 88.97 | 5 |
| 4.2.1 Environmental performance..... | 96.17 | 7 |
| 4.2.2 Personal safety | 89.39 | 20 |
| 4.2.3 Physician density | 70.67 | 4 |
| 4.2.4 Sanitation | 99.66 | 15 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 51.19 | 40 |
| 5.1 Mid-Level Skills | 33.69 | 64 |
| 5.1.1 Workforce with secondary education | 22.23 | 72 |
| 5.1.2 Population with secondary education | 23.68 | 77 |
| 5.1.3 Technicians and associate professionals | 52.02 | 36 |
| 5.1.4 Labour productivity per employee..... | 36.86 | 43 |
| 5.2 Employability..... | 68.69 | 26 |
| 5.2.1 Ease of finding skilled employees | 71.62 | 24 |
| 5.2.2 Relevance of education system to the economy | 54.57 | 38 |
| 5.2.3 Skills matching with secondary education..... | 69.95 | 36 |
| 5.2.4 Skills matching with tertiary education | 78.64 | 32 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 39.38 | 35 |
| 6.1 High-Level Skills | 39.09 | 36 |
| 6.1.1 Workforce with tertiary education | 35.69 | 48 |
| 6.1.2 Population with tertiary education | 6.17 | 89 |
| 6.1.3 Professionals..... | 49.42 | 24 |
| 6.1.4 Researchers..... | 46.24 | 23 |
| 6.1.5 Senior officials and managers | 39.38 | 33 |
| 6.1.6 Availability of scientists and engineers | 57.65 | 34 |
| 6.2 Talent Impact..... | 39.67 | 33 |
| 6.2.1 Innovation output..... | 51.67 | 30 |
| 6.2.2 High-value exports..... | 8.29 | 71 |
| 6.2.3 New product entrepreneurial activity | 28.87 | 68 |
| 6.2.4 New business density | 26.64 | 24 |
| 6.2.5 Scientific journal articles..... | 82.88 | 6 |

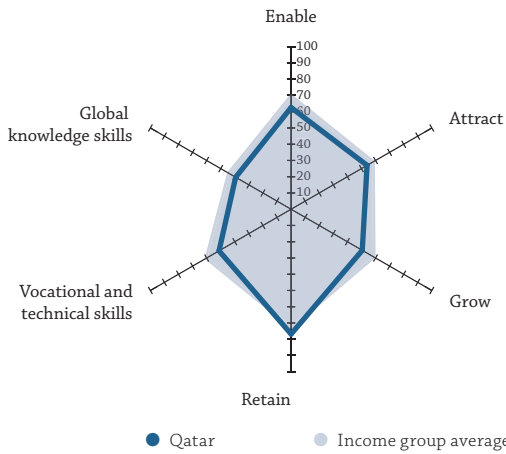
QATAR

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 23 |
| Income group | High income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 2.24 |

| | |
|---|-------------------|
| GDP per capita (PPP US\$) | 143,788.00 |
| GDP (US\$ billions) | 166.91 |
| GTCI score | 61.90 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-----------|------|
| 1 ENABLE.....76.85 | 20 | |
| 1.1 Regulatory Landscape..... | 75.14 | 20 |
| 1.1.1 Government effectiveness | 67.87 | 33 |
| 1.1.2 Business-government relations | 96.47 | 3 |
| 1.1.3 Political stability | 87.62 | 14 |
| 1.1.4 Regulatory quality | 61.89 | 41 |
| 1.1.5 Corruption | 61.84 | 29 |
| 1.2 Market Landscape..... | 66.79 | 27 |
| 1.2.1 Competition intensity | 86.00 | 15 |
| 1.2.2 Ease of doing business | 56.47 | 75 |
| 1.2.3 Cluster development | 88.85 | 9 |
| 1.2.4 R&D expenditure | 10.75 | 60 |
| 1.2.5 ICT infrastructure | 73.53 | 38 |
| 1.2.6 Technology utilisation | 85.16 | 11 |
| 1.3 Business and Labour Landscape..... | 88.62 | 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..... | 87.85 | 5 |
| 1.3.4 Labour-employer cooperation | 81.03 | 13 |
| Management Practice | | |
| 1.3.5 Professional management..... | 71.92 | 26 |
| 1.3.6 Relationship of pay to productivity..... | 90.91 | 3 |
| 2 ATTRACT.....81.88 | 4 | |
| 2.1 External Openness | 84.78 | 4 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 77.28 | 7 |
| 2.1.2 Prevalence of foreign ownership | 57.04 | 60 |
| Attract People | | |
| 2.1.3 Migrant stock | 100.00 | 1 |
| 2.1.4 International students..... | 100.00 | 1 |
| 2.1.5 Brain gain..... | 89.56 | 6 |
| 2.2 Internal Openness..... | 78.99 | 9 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 62.07 | 33 |
| 2.2.2 Tolerance of immigrants..... | 87.32 | 16 |
| 2.2.3 Social mobility..... | 83.92 | 12 |
| Gender Equality | | |
| 2.2.4 Female graduates | 78.35 | 49 |
| 2.2.5 Gender earnings gap | 89.16 | 2 |
| 2.2.6 Leadership opportunities for women..... | 73.12 | 15 |

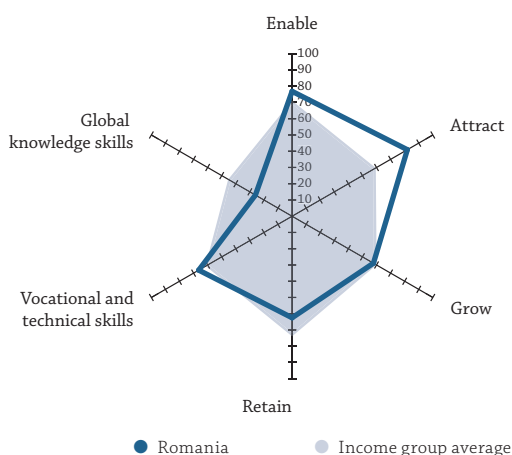
| | Score | Rank |
|--|--------------|-----------|
| 3 GROW.....57.80 | 23 | |
| 3.1 Formal Education..... | 19.42 | 83 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 1.06 | 105 |
| 3.1.2 Tertiary enrolment..... | 14.52 | 91 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | n/a | n/a |
| 3.1.4 Reading, maths, and science | 32.11 | 58 |
| 3.1.5 University ranking | 29.97 | 44 |
| 3.2 Lifelong Learning..... | 89.51 | 3 |
| 3.2.1 Quality of management schools..... | 90.48 | 5 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 88.55 | 8 |
| 3.3 Access to Growth Opportunities | 64.46 | 26 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 71.79 | 20 |
| 3.3.2 Personal rights..... | 14.51 | 107 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 90.30 | 13 |
| 3.3.4 Use of virtual professional networks..... | 32.88 | 28 |
| 3.3.5 Collaboration within organisations | 79.47 | 14 |
| 3.3.6 Collaboration across organisations | 97.80 | 4 |
| 4 RETAIN.....62.47 | 38 | |
| 4.1 Sustainability | 56.74 | 34 |
| 4.1.1 Pension system | 2.45 | 99 |
| 4.1.2 Social protection | 79.84 | 17 |
| 4.1.3 Brain retention | 87.93 | 5 |
| 4.2 Lifestyle | 68.21 | 50 |
| 4.2.1 Environmental performance..... | 61.29 | 76 |
| 4.2.2 Personal safety | 82.74 | 29 |
| 4.2.3 Physician density | 31.09 | 56 |
| 4.2.4 Sanitation | 97.73 | 32 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... 66.32 | 16 | |
| 5.1 Mid-Level Skills | 42.71 | 45 |
| 5.1.1 Workforce with secondary education | 22.03 | 74 |
| 5.1.2 Population with secondary education | 27.53 | 66 |
| 5.1.3 Technicians and associate professionals | 22.42 | 81 |
| 5.1.4 Labour productivity per employee..... | 98.87 | 2 |
| 5.2 Employability..... | 89.92 | 3 |
| 5.2.1 Ease of finding skilled employees | 82.51 | 11 |
| 5.2.2 Relevance of education system to the economy | 86.30 | 5 |
| 5.2.3 Skills matching with secondary education..... | 95.64 | 2 |
| 5.2.4 Skills matching with tertiary education | 95.24 | 2 |
| 6 GLOBAL KNOWLEDGE SKILLS | 26.06 | 62 |
| 6.1 High-Level Skills | 30.93 | 54 |
| 6.1.1 Workforce with tertiary education | 25.76 | 73 |
| 6.1.2 Population with tertiary education | 33.79 | 32 |
| 6.1.3 Professionals..... | 22.25 | 69 |
| 6.1.4 Researchers..... | 7.09 | 60 |
| 6.1.5 Senior officials and managers | 13.13 | 80 |
| 6.1.6 Availability of scientists and engineers | 83.53 | 4 |
| 6.2 Talent Impact..... | 21.20 | 73 |
| 6.2.1 Innovation output..... | 34.97 | 53 |
| 6.2.2 High-value exports..... | 6.40 | 81 |
| 6.2.3 New product entrepreneurial activity | 50.69 | 32 |
| 6.2.4 New business density | 9.69 | 50 |
| 6.2.5 Scientific journal articles..... | 4.24 | 99 |

ROMANIA

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 64 |
| Income group | Upper middle income |
| Regional group | Europe |
| Population (millions) | 19.83 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....49.19 67 | | |
| 1.1 Regulatory Landscape..... | 51.19 | 54 |
| 1.1.1 Government effectiveness | 41.13 | 71 |
| 1.1.2 Business-government relations | 41.94 | 94 |
| 1.1.3 Political stability | 68.69 | 51 |
| 1.1.4 Regulatory quality | 59.47 | 43 |
| 1.1.5 Corruption | 44.74 | 47 |
| 1.2 Market Landscape..... | 45.36 | 67 |
| 1.2.1 Competition intensity | 58.86 | 85 |
| 1.2.2 Ease of doing business | 76.23 | 34 |
| 1.2.3 Cluster development | 27.55 | 94 |
| 1.2.4 R&D expenditure | 8.64 | 65 |
| 1.2.5 ICT infrastructure | 64.80 | 53 |
| 1.2.6 Technology utilisation | 36.04 | 80 |
| 1.3 Business and Labour Landscape..... | 51.01 | 78 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 61.53 | 57 |
| 1.3.4 Labour-employer cooperation | 40.65 | 91 |
| Management Practice | | |
| 1.3.5 Professional management..... | 31.52 | 80 |
| 1.3.6 Relationship of pay to productivity..... | 35.69 | 81 |
| 2 ATTRACT.....39.56 75 | | |
| 2.1 External Openness | 29.08 | 83 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 50.39 | 62 |
| 2.1.2 Prevalence of foreign ownership | 52.84 | 73 |
| Attract People | | |
| 2.1.3 Migrant stock | 2.41 | 91 |
| 2.1.4 International students..... | 22.10 | 39 |
| 2.1.5 Brain gain..... | 17.67 | 110 |
| 2.2 Internal Openness..... | 50.03 | 61 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 36.78 | 73 |
| 2.2.2 Tolerance of immigrants..... | 53.52 | 66 |
| 2.2.3 Social mobility..... | 21.53 | 109 |
| Gender Equality | | |
| 2.2.4 Female graduates | 79.46 | 40 |
| 2.2.5 Gender earnings gap | 62.65 | 28 |
| 2.2.6 Leadership opportunities for women..... | 46.24 | 54 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 21,403.10 |
| GDP (US\$ billions) | 177.95 |
| GTCI score..... | 41.13 |
| GTCI score (income group average) | 40.93 |

| | Score | Rank |
|---|-------|------|
| 3 GROW..... 36.03 77 | | |
| 3.1 Formal Education..... | 34.08 | 49 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 45.04 | 23 |
| 3.1.2 Tertiary enrolment..... | 46.36 | 49 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 16.11 | 77 |
| 3.1.4 Reading, maths, and science | 46.31 | 45 |
| 3.1.5 University ranking | 16.55 | 69 |
| 3.2 Lifelong Learning..... | 33.01 | 90 |
| 3.2.1 Quality of management schools..... | 23.54 | 106 |
| 3.2.2 Prevalence of training in firms | 49.21 | 35 |
| 3.2.3 Employee development..... | 26.26 | 89 |
| 3.3 Access to Growth Opportunities | 41.02 | 91 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 10.89 | 118 |
| 3.3.2 Personal rights..... | 62.15 | 59 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 68.48 | 66 |
| 3.3.4 Use of virtual professional networks..... | 20.79 | 47 |
| 3.3.5 Collaboration within organisations | 27.28 | 90 |
| 3.3.6 Collaboration across organisations | 56.52 | 103 |

| | | |
|--------------------------------------|-------|-----|
| 4 RETAIN..... 53.68 57 | | |
| 4.1 Sustainability | 37.16 | 66 |
| 4.1.1 Pension system | 67.35 | 36 |
| 4.1.2 Social protection | 35.24 | 64 |
| 4.1.3 Brain retention | 8.88 | 114 |
| 4.2 Lifestyle | 70.20 | 46 |
| 4.2.1 Environmental performance..... | 86.11 | 34 |
| 4.2.2 Personal safety | 75.96 | 40 |
| 4.2.3 Physician density | 42.47 | 42 |
| 4.2.4 Sanitation | 76.25 | 79 |

| | | |
|--|-------|-----|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... 39.24 76 | | |
| 5.1 Mid-Level Skills | 43.76 | 40 |
| 5.1.1 Workforce with secondary education | 51.62 | 13 |
| 5.1.2 Population with secondary education | 66.76 | 18 |
| 5.1.3 Technicians and associate professionals | 26.01 | 74 |
| 5.1.4 Labour productivity per employee..... | 30.65 | 52 |
| 5.2 Employability..... | 34.73 | 114 |
| 5.2.1 Ease of finding skilled employees | 17.82 | 114 |
| 5.2.2 Relevance of education system to the economy | 19.23 | 105 |
| 5.2.3 Skills matching with secondary education..... | 44.08 | 114 |
| 5.2.4 Skills matching with tertiary education | 57.78 | 108 |

| | | |
|--|-------|----|
| 6 GLOBAL KNOWLEDGE SKILLS..... 29.10 58 | | |
| 6.1 High-Level Skills | 23.50 | 72 |
| 6.1.1 Workforce with tertiary education | 28.24 | 66 |
| 6.1.2 Population with tertiary education | 6.17 | 89 |
| 6.1.3 Professionals..... | 41.33 | 41 |
| 6.1.4 Researchers..... | 10.71 | 50 |
| 6.1.5 Senior officials and managers | 12.50 | 82 |
| 6.1.6 Availability of scientists and engineers | 42.06 | 56 |
| 6.2 Talent Impact..... | 34.71 | 47 |
| 6.2.1 Innovation output..... | 40.60 | 43 |
| 6.2.2 High-value exports..... | 14.12 | 50 |
| 6.2.3 New product entrepreneurial activity | 44.46 | 47 |
| 6.2.4 New business density | 23.45 | 29 |
| 6.2.5 Scientific journal articles..... | 50.90 | 31 |

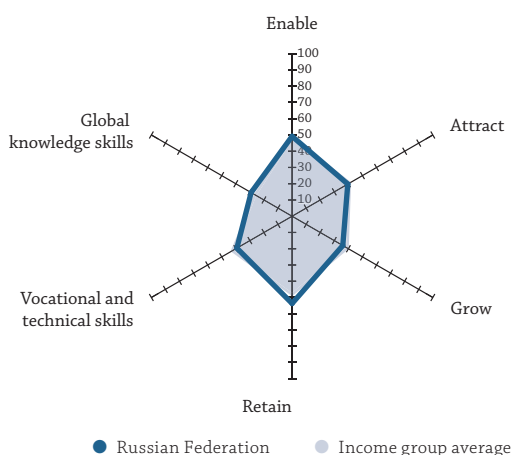
RUSSIAN FEDERATION

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 53 |
| Income group | Upper middle income |
| Regional group | Europe |
| Population (millions) | 144.10 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 24,451.40 |
| GDP (US\$ billions) | 1,326.02 |
| GTCI score | 44.22 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 46.37 | 83 |
| 1.1 Regulatory Landscape..... | 35.03 | 102 |
| 1.1.1 Government effectiveness | 37.53 | 78 |
| 1.1.2 Business-government relations | 47.02 | 84 |
| 1.1.3 Political stability | 38.35 | 105 |
| 1.1.4 Regulatory quality | 32.52 | 100 |
| 1.1.5 Corruption | 19.74 | 101 |
| 1.2 Market Landscape | 51.47 | 50 |
| 1.2.1 Competition intensity | 63.43 | 73 |
| 1.2.2 Ease of doing business | 74.24 | 37 |
| 1.2.3 Cluster development | 31.89 | 86 |
| 1.2.4 R&D expenditure | 27.57 | 32 |
| 1.2.5 ICT infrastructure | 74.22 | 36 |
| 1.2.6 Technology utilisation | 37.46 | 78 |
| 1.3 Business and Labour Landscape..... | 52.60 | 70 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 66.18 | 44 |
| 1.3.4 Labour-employer cooperation | 42.01 | 88 |
| Management Practice | | |
| 1.3.5 Professional management..... | 31.81 | 78 |
| 1.3.6 Relationship of pay to productivity..... | 59.93 | 38 |
| 2 ATTRACT..... | 31.86 | 106 |
| 2.1 External Openness | 26.23 | 98 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 31.07 | 101 |
| 2.1.2 Prevalence of foreign ownership | 29.38 | 110 |
| Attract People | | |
| 2.1.3 Migrant stock | 17.76 | 44 |
| 2.1.4 International students..... | 15.78 | 52 |
| 2.1.5 Brain gain | 37.15 | 71 |
| 2.2 Internal Openness | 37.50 | 102 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 8.05 | 115 |
| 2.2.2 Tolerance of immigrants..... | 40.85 | 87 |
| 2.2.3 Social mobility..... | 37.33 | 80 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 51.81 | 55 |
| 2.2.6 Leadership opportunities for women..... | 49.46 | 45 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 42.93 | 50 |
| 3.1 Formal Education..... | 47.53 | 29 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 26.30 | 46 |
| 3.1.2 Tertiary enrolment..... | 68.85 | 16 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 18.67 | 69 |
| 3.1.4 Reading, maths, and science | 71.85 | 25 |
| 3.1.5 University ranking | 52.00 | 26 |
| 3.2 Lifelong Learning..... | 44.39 | 57 |
| 3.2.1 Quality of management schools..... | 41.01 | 66 |
| 3.2.2 Prevalence of training in firms | 56.46 | 29 |
| 3.2.3 Employee development..... | 35.69 | 67 |
| 3.3 Access to Growth Opportunities | 36.87 | 101 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 37.43 | 75 |
| 3.3.2 Personal rights..... | 3.66 | 116 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 67.27 | 72 |
| 3.3.4 Use of virtual professional networks..... | 8.36 | 76 |
| 3.3.5 Collaboration within organisations | 32.76 | 76 |
| 3.3.6 Collaboration across organisations | 71.72 | 47 |
| 4 RETAIN..... | 54.36 | 55 |
| 4.1 Sustainability | 45.80 | 48 |
| 4.1.1 Pension system | 66.33 | 37 |
| 4.1.2 Social protection | 33.71 | 71 |
| 4.1.3 Brain retention | 37.36 | 71 |
| 4.2 Lifestyle | 62.92 | 60 |
| 4.2.1 Environmental performance..... | 86.64 | 32 |
| 4.2.2 Personal safety | 43.90 | 101 |
| 4.2.3 Physician density | 52.72 | 26 |
| 4.2.4 Sanitation | 68.41 | 88 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 47.22 | 51 |
| 5.1 Mid-Level Skills | 40.93 | 50 |
| 5.1.1 Workforce with secondary education | 33.06 | 51 |
| 5.1.2 Population with secondary education | 31.10 | 64 |
| 5.1.3 Technicians and associate professionals | 67.71 | 16 |
| 5.1.4 Labour productivity per employee..... | 31.85 | 50 |
| 5.2 Employability..... | 53.50 | 62 |
| 5.2.1 Ease of finding skilled employees | 35.64 | 81 |
| 5.2.2 Relevance of education system to the economy | 41.35 | 59 |
| 5.2.3 Skills matching with secondary education..... | 67.54 | 43 |
| 5.2.4 Skills matching with tertiary education | 69.47 | 67 |
| 6 GLOBAL KNOWLEDGE SKILLS | 42.61 | 26 |
| 6.1 High-Level Skills | 62.13 | 7 |
| 6.1.1 Workforce with tertiary education | 81.94 | 3 |
| 6.1.2 Population with tertiary education | 100.00 | 1 |
| 6.1.3 Professionals..... | 56.36 | 17 |
| 6.1.4 Researchers..... | 37.84 | 28 |
| 6.1.5 Senior officials and managers | 53.13 | 18 |
| 6.1.6 Availability of scientists and engineers | 43.53 | 55 |
| 6.2 Talent Impact..... | 23.09 | 68 |
| 6.2.1 Innovation output..... | 35.85 | 50 |
| 6.2.2 High-value exports..... | 25.99 | 27 |
| 6.2.3 New product entrepreneurial activity | 9.97 | 85 |
| 6.2.4 New business density | 24.20 | 27 |
| 6.2.5 Scientific journal articles..... | 19.44 | 59 |

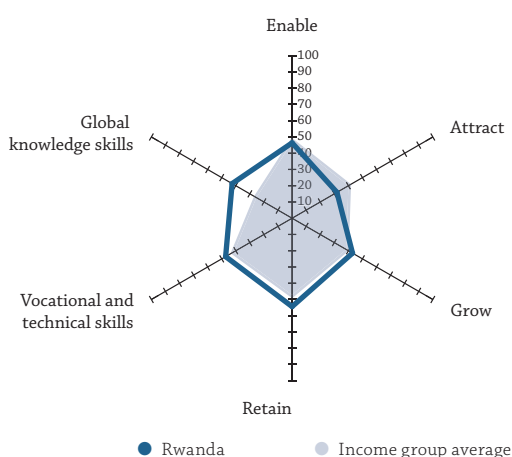
RWANDA

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 76 |
| Income group | Low income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 11.61 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 1,758.73 |
| GDP (US\$ billions) | 8.10 |
| GTCI score..... | 38.07 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 60.23 | 37 |
| 1.1 Regulatory Landscape..... | 59.65 | 43 |
| 1.1.1 Government effectiveness | 41.13 | 71 |
| 1.1.2 Business-government relations | 91.39 | 6 |
| 1.1.3 Political stability | 61.89 | 66 |
| 1.1.4 Regulatory quality | 51.21 | 59 |
| 1.1.5 Corruption | 52.63 | 40 |
| 1.2 Market Landscape..... | 49.67 | 56 |
| 1.2.1 Competition intensity | 64.29 | 71 |
| 1.2.2 Ease of doing business | 67.93 | 52 |
| 1.2.3 Cluster development | 55.73 | 39 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 8.46 | 112 |
| 1.2.6 Technology utilisation | 51.94 | 48 |
| 1.3 Business and Labour Landscape..... | 71.38 | 27 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 65.04 | 49 |
| 1.3.4 Labour-employer cooperation | 75.34 | 16 |
| Management Practice | | |
| 1.3.5 Professional management..... | 59.31 | 29 |
| 1.3.6 Relationship of pay to productivity..... | 58.59 | 42 |
| 2 ATTRACT..... | 50.76 | 37 |
| 2.1 External Openness | 41.57 | 47 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 60.84 | 33 |
| 2.1.2 Prevalence of foreign ownership | 61.23 | 52 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 8.23 | 62 |
| 2.1.4 International students..... | 4.86 | 73 |
| 2.1.5 Brain gain..... | 72.69 | 13 |
| 2.2 Internal Openness..... | 59.95 | 32 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 13.79 | 111 |
| 2.2.2 Tolerance of immigrants..... | 53.52 | 66 |
| 2.2.3 Social mobility..... | 77.66 | 18 |
| Gender Equality | | |
| 2.2.4 Female graduates | 37.15 | 94 |
| 2.2.5 Gender earnings gap | 78.31 | 8 |
| 2.2.6 Leadership opportunities for women..... | 99.28 | 2 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 36.20 | 75 |
| 3.1 Formal Education..... | 11.47 | 104 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 24.06 | 51 |
| 3.1.2 Tertiary enrolment..... | 5.95 | 105 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 15.86 | 78 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 54.32 | 36 |
| 3.2.1 Quality of management schools..... | 47.88 | 52 |
| 3.2.2 Prevalence of training in firms..... | 68.60 | 15 |
| 3.2.3 Employee development..... | 46.46 | 50 |
| 3.3 Access to Growth Opportunities | 42.83 | 83 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 55.31 | 29 |
| 3.3.2 Personal rights..... | 25.42 | 102 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 55.15 | 92 |
| 3.3.4 Use of virtual professional networks..... | 1.62 | 104 |
| 3.3.5 Collaboration within organisations | 48.95 | 39 |
| 3.3.6 Collaboration across organisations | 70.53 | 51 |
| 4 RETAIN..... | 37.48 | 92 |
| 4.1 Sustainability | 41.71 | 56 |
| 4.1.1 Pension system | 3.06 | 97 |
| 4.1.2 Social protection | 52.81 | 34 |
| 4.1.3 Brain retention | 69.25 | 19 |
| 4.2 Lifestyle..... | 33.26 | 103 |
| 4.2.1 Environmental performance..... | 24.71 | 109 |
| 4.2.2 Personal safety | 51.33 | 89 |
| 4.2.3 Physician density | 0.64 | 107 |
| 4.2.4 Sanitation | 56.36 | 95 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 32.68 | 96 |
| 5.1 Mid-Level Skills | 4.63 | 111 |
| 5.1.1 Workforce with secondary education | n/a | n/a |
| 5.1.2 Population with secondary education | 6.56 | 94 |
| 5.1.3 Technicians and associate professionals | 2.69 | 108 |
| 5.1.4 Labour productivity per employee..... | n/a | n/a |
| 5.2 Employability..... | 60.73 | 47 |
| 5.2.1 Ease of finding skilled employees | 47.19 | 59 |
| 5.2.2 Relevance of education system to the economy | 54.09 | 42 |
| 5.2.3 Skills matching with secondary education..... | 69.60 | 38 |
| 5.2.4 Skills matching with tertiary education | 72.02 | 56 |
| 6 GLOBAL KNOWLEDGE SKILLS | 11.05 | 102 |
| 6.1 High-Level Skills | 9.92 | 110 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 4.63 | 92 |
| 6.1.3 Professionals..... | 4.62 | 101 |
| 6.1.4 Researchers..... | 0.00 | 102 |
| 6.1.5 Senior officials and managers | 1.25 | 109 |
| 6.1.6 Availability of scientists and engineers | 39.12 | 65 |
| 6.2 Talent Impact..... | 12.18 | 94 |
| 6.2.1 Innovation output..... | 8.44 | 111 |
| 6.2.2 High-value exports..... | 24.48 | 33 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 8.47 | 57 |
| 6.2.5 Scientific journal articles..... | 7.33 | 82 |

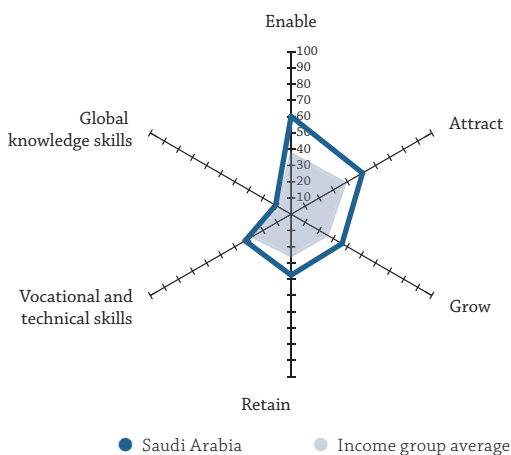
SAUDI ARABIA

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 41 |
| Income group | High income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 31.54 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 53,430.10 |
| GDP (US\$ billions) | 646.00 |
| GTCI score | 49.61 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 60.53 | 35 |
| 1.1 Regulatory Landscape..... | 51.56 | 53 |
| 1.1.1 Government effectiveness | 47.56 | 57 |
| 1.1.2 Business-government relations | 71.52 | 26 |
| 1.1.3 Political stability | 50.73 | 87 |
| 1.1.4 Regulatory quality | 45.87 | 67 |
| 1.1.5 Corruption | 42.11 | 51 |
| 1.2 Market Landscape..... | 55.23 | 40 |
| 1.2.1 Competition intensity | 76.29 | 34 |
| 1.2.2 Ease of doing business | 51.72 | 80 |
| 1.2.3 Cluster development | 71.21 | 21 |
| 1.2.4 R&D expenditure | 1.40 | 98 |
| 1.2.5 ICT infrastructure | 73.53 | 38 |
| 1.2.6 Technology utilisation | 57.24 | 42 |
| 1.3 Business and Labour Landscape..... | 74.80 | 24 |
| 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..... | 69.93 | 31 |
| 1.3.4 Labour-employer cooperation | 62.87 | 31 |
| Management Practice | | |
| 1.3.5 Professional management..... | 54.73 | 31 |
| 1.3.6 Relationship of pay to productivity..... | 61.28 | 34 |
| 2 ATTRACT..... | 47.45 | 44 |
| 2.1 External Openness | 52.69 | 26 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 60.84 | 33 |
| 2.1.2 Prevalence of foreign ownership | 38.02 | 100 |
| Attract People | | |
| 2.1.3 Migrant stock | 71.09 | 10 |
| 2.1.4 International students..... | 24.82 | 34 |
| 2.1.5 Brain gain | 68.67 | 16 |
| 2.2 Internal Openness..... | 42.21 | 90 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 29.89 | 84 |
| 2.2.2 Tolerance of immigrants..... | 78.87 | 27 |
| 2.2.3 Social mobility..... | 64.03 | 27 |
| Gender Equality | | |
| 2.2.4 Female graduates | 55.53 | 81 |
| 2.2.5 Gender earnings gap | 8.43 | 112 |
| 2.2.6 Leadership opportunities for women..... | 16.49 | 100 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 42.39 | 53 |
| 3.1 Formal Education..... | 37.38 | 45 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 8.62 | 82 |
| 3.1.2 Tertiary enrolment..... | 55.07 | 39 |
| 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 | 48.47 | 29 |
| 3.2 Lifelong Learning..... | 47.09 | 54 |
| 3.2.1 Quality of management schools..... | 49.74 | 48 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 44.44 | 52 |
| 3.3 Access to Growth Opportunities | 42.70 | 84 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 46.09 | 54 |
| 3.3.2 Personal rights..... | 4.82 | 114 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 81.52 | 29 |
| 3.3.4 Use of virtual professional networks..... | 17.87 | 56 |
| 3.3.5 Collaboration within organisations | 40.77 | 55 |
| 3.3.6 Collaboration across organisations | 65.14 | 79 |
| 4 RETAIN..... | 66.46 | 33 |
| 4.1 Sustainability | 66.82 | 24 |
| 4.1.1 Pension system | n/a | n/a |
| 4.1.2 Social protection | 64.16 | 25 |
| 4.1.3 Brain retention | 69.48 | 18 |
| 4.2 Lifestyle..... | 66.11 | 54 |
| 4.2.1 Environmental performance..... | 58.85 | 82 |
| 4.2.2 Personal safety | 64.71 | 64 |
| 4.2.3 Physician density | 40.87 | 44 |
| 4.2.4 Sanitation | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 53.34 | 37 |
| 5.1 Mid-Level Skills | 49.74 | 28 |
| 5.1.1 Workforce with secondary education | 28.74 | 63 |
| 5.1.2 Population with secondary education | 32.67 | 61 |
| 5.1.3 Technicians and associate professionals | 51.12 | 38 |
| 5.1.4 Labour productivity per employee..... | 86.42 | 4 |
| 5.2 Employability..... | 56.93 | 54 |
| 5.2.1 Ease of finding skilled employees | 44.88 | 63 |
| 5.2.2 Relevance of education system to the economy | 52.40 | 44 |
| 5.2.3 Skills matching with secondary education..... | 60.11 | 71 |
| 5.2.4 Skills matching with tertiary education | 70.33 | 63 |
| 6 GLOBAL KNOWLEDGE SKILLS | 27.50 | 60 |
| 6.1 High-Level Skills | 37.36 | 39 |
| 6.1.1 Workforce with tertiary education | 38.44 | 41 |
| 6.1.2 Population with tertiary education | 33.96 | 30 |
| 6.1.3 Professionals..... | 30.92 | 54 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers | 24.38 | 57 |
| 6.1.6 Availability of scientists and engineers | 59.12 | 32 |
| 6.2 Talent Impact..... | 17.63 | 80 |
| 6.2.1 Innovation output..... | 28.30 | 65 |
| 6.2.2 High-value exports..... | 1.51 | 99 |
| 6.2.3 New product entrepreneurial activity | 32.17 | 65 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 8.54 | 79 |

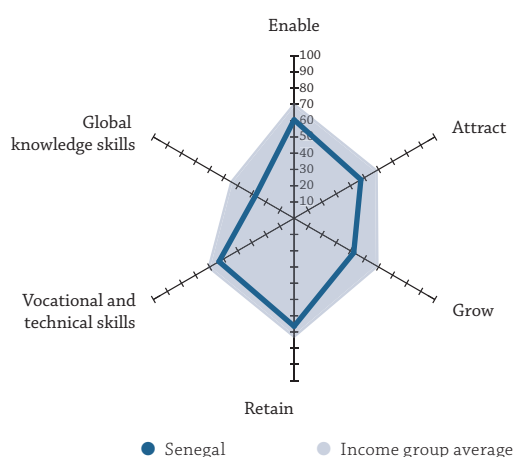
SENEGAL

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 97 |
| Income group | Low income |
| Regional group | Sub-Saharan Africa |
| Population (millions) | 15.13 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 2,430.80 |
| GDP (US\$ billions) | 13.78 |
| GTCI score | 31.98 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-----------|------|
| 1 ENABLE.....41.53 | 91 | |
| 1.1 Regulatory Landscape..... | 47.80 | 64 |
| 1.1.1 Government effectiveness | 30.85 | 89 |
| 1.1.2 Business-government relations | 66.89 | 35 |
| 1.1.3 Political stability | 59.71 | 72 |
| 1.1.4 Regulatory quality | 40.78 | 77 |
| 1.1.5 Corruption | 40.79 | 52 |
| 1.2 Market Landscape..... | 38.06 | 91 |
| 1.2.1 Competition intensity | 71.71 | 51 |
| 1.2.2 Ease of doing business | 32.27 | 111 |
| 1.2.3 Cluster development | 41.18 | 69 |
| 1.2.4 R&D expenditure | 12.38 | 55 |
| 1.2.5 ICT infrastructure | 13.92 | 105 |
| 1.2.6 Technology utilisation | 56.89 | 43 |
| 1.3 Business and Labour Landscape..... | 38.74 | 105 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 0.00 | 116 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 53.41 | 80 |
| 1.3.4 Labour-employer cooperation | 47.43 | 69 |
| Management Practice | | |
| 1.3.5 Professional management..... | 37.25 | 68 |
| 1.3.6 Relationship of pay to productivity..... | 34.34 | 84 |
| 2 ATTRACT.....45.69 | 49 | |
| 2.1 External Openness | 45.42 | 33 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 36.81 | 94 |
| 2.1.2 Prevalence of foreign ownership | 60.49 | 54 |
| Attract People | | |
| 2.1.3 Migrant stock | 3.68 | 83 |
| 2.1.4 International students..... | 82.34 | 11 |
| 2.1.5 Brain gain | 43.78 | 54 |
| 2.2 Internal Openness..... | 45.96 | 79 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 42.53 | 62 |
| 2.2.2 Tolerance of immigrants..... | 91.55 | 8 |
| 2.2.3 Social mobility..... | 44.96 | 57 |
| Gender Equality | | |
| 2.2.4 Female graduates | 12.52 | 100 |
| 2.2.5 Gender earnings gap | 39.76 | 86 |
| 2.2.6 Leadership opportunities for women..... | 44.44 | 58 |

| | Score | Rank |
|--|------------|------|
| 3 GROW.....32.20 | 88 | |
| 3.1 Formal Education..... | 16.75 | 88 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 7.63 | 87 |
| 3.1.2 Tertiary enrolment..... | 8.48 | 98 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 50.90 | 5 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 37.37 | 73 |
| 3.2.1 Quality of management schools..... | 61.64 | 33 |
| 3.2.2 Prevalence of training in firms..... | 18.47 | 81 |
| 3.2.3 Employee development..... | 31.99 | 78 |
| 3.3 Access to Growth Opportunities | 42.47 | 87 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 23.18 | 106 |
| 3.3.2 Personal rights..... | 63.34 | 54 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 56.67 | 91 |
| 3.3.4 Use of virtual professional networks..... | 4.84 | 90 |
| 3.3.5 Collaboration within organisations | 41.53 | 51 |
| 3.3.6 Collaboration across organisations | 65.28 | 78 |
| 4 RETAIN.....30.67 | 102 | |
| 4.1 Sustainability | 22.42 | 106 |
| 4.1.1 Pension system | 3.06 | 97 |
| 4.1.2 Social protection | 28.20 | 78 |
| 4.1.3 Brain retention | 35.99 | 75 |
| 4.2 Lifestyle | 38.92 | 100 |
| 4.2.1 Environmental performance..... | 49.70 | 96 |
| 4.2.2 Personal safety | 64.89 | 62 |
| 4.2.3 Physician density | 0.64 | 107 |
| 4.2.4 Sanitation | 40.45 | 103 |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....31.99 | 98 | |
| 5.1 Mid-Level Skills | 4.12 | 113 |
| 5.1.1 Workforce with secondary education | 3.84 | 101 |
| 5.1.2 Population with secondary education | 5.56 | 96 |
| 5.1.3 Technicians and associate professionals | n/a | n/a |
| 5.1.4 Labour productivity per employee..... | 2.95 | 93 |
| 5.2 Employability..... | 59.86 | 48 |
| 5.2.1 Ease of finding skilled employees | 67.99 | 26 |
| 5.2.2 Relevance of education system to the economy | 37.26 | 72 |
| 5.2.3 Skills matching with secondary education..... | 63.24 | 58 |
| 5.2.4 Skills matching with tertiary education | 70.96 | 61 |
| 6 GLOBAL KNOWLEDGE SKILLS.....9.81 | 106 | |
| 6.1 High-Level Skills | 10.81 | 107 |
| 6.1.1 Workforce with tertiary education | 3.14 | 103 |
| 6.1.2 Population with tertiary education | 2.92 | 95 |
| 6.1.3 Professionals..... | n/a | n/a |
| 6.1.4 Researchers..... | 4.23 | 67 |
| 6.1.5 Senior officials and managers | n/a | n/a |
| 6.1.6 Availability of scientists and engineers | 32.94 | 77 |
| 6.2 Talent Impact..... | 8.81 | 105 |
| 6.2.1 Innovation output..... | 17.75 | 94 |
| 6.2.2 High-value exports..... | 6.78 | 79 |
| 6.2.3 New product entrepreneurial activity | 3.49 | 87 |
| 6.2.4 New business density | 1.57 | 85 |
| 6.2.5 Scientific journal articles..... | 14.45 | 66 |

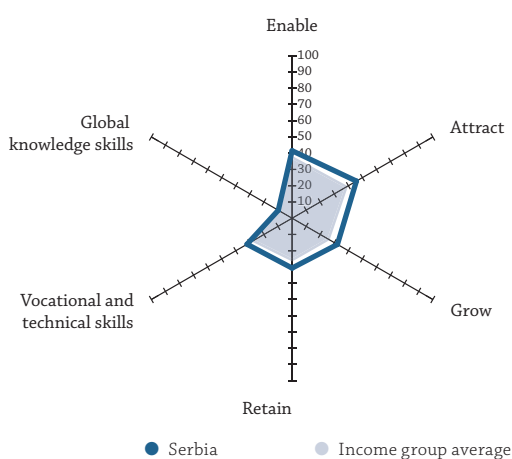
SERBIA

Key Indicators

| | |
|----------------------------|----------------------------|
| Rank (out of 119)..... | 69 |
| Income group..... | Upper middle income |
| Regional group..... | Europe |
| Population (millions)..... | 7.10 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 13,481.90 |
| GDP (US\$ billions)..... | 36.51 |
| GTCI score..... | 40.05 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 42.30 | 89 |
| 1.1 Regulatory Landscape..... | 48.08 | 61 |
| 1.1.1 Government effectiveness..... | 44.99 | 62 |
| 1.1.2 Business-government relations..... | 40.62 | 96 |
| 1.1.3 Political stability..... | 69.42 | 50 |
| 1.1.4 Regulatory quality..... | 48.54 | 65 |
| 1.1.5 Corruption..... | 36.84 | 59 |
| 1.2 Market Landscape..... | 41.09 | 80 |
| 1.2.1 Competition intensity..... | 42.86 | 113 |
| 1.2.2 Ease of doing business..... | 72.56 | 44 |
| 1.2.3 Cluster development..... | 23.84 | 101 |
| 1.2.4 R&D expenditure..... | 17.99 | 44 |
| 1.2.5 ICT infrastructure..... | 69.17 | 44 |
| 1.2.6 Technology utilisation..... | 20.14 | 107 |
| 1.3 Business and Labour Landscape..... | 37.72 | 107 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 22.33 | 105 |
| 1.3.2 Ease of redundancy..... | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 52.00 | 85 |
| 1.3.4 Labour-employer cooperation..... | 30.35 | 108 |
| Management Practice | | |
| 1.3.5 Professional management..... | 12.32 | 112 |
| 1.3.6 Relationship of pay to productivity..... | 29.29 | 94 |
| 2 ATTRACT..... | 33.44 | 102 |
| 2.1 External Openness..... | 26.21 | 99 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 32.90 | 100 |
| 2.1.2 Prevalence of foreign ownership..... | 49.14 | 85 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 19.97 | 41 |
| 2.1.4 International students..... | 21.42 | 45 |
| 2.1.5 Brain gain..... | 7.63 | 118 |
| 2.2 Internal Openness..... | 40.68 | 94 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 21.84 | 98 |
| 2.2.2 Tolerance of immigrants..... | 50.70 | 73 |
| 2.2.3 Social mobility..... | 14.17 | 115 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 79.23 | 42 |
| 2.2.5 Gender earnings gap..... | 56.63 | 44 |
| 2.2.6 Leadership opportunities for women..... | 21.51 | 96 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 37.16 | 70 |
| 3.1 Formal Education..... | 37.96 | 43 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 57.41 | 12 |
| 3.1.2 Tertiary enrolment..... | 50.84 | 42 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 30.69 | 35 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 12.92 | 72 |
| 3.2 Lifelong Learning..... | 30.31 | 96 |
| 3.2.1 Quality of management schools..... | 31.75 | 92 |
| 3.2.2 Prevalence of training in firms..... | 45.38 | 39 |
| 3.2.3 Employee development..... | 13.80 | 111 |
| 3.3 Access to Growth Opportunities..... | 43.19 | 80 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 33.52 | 84 |
| 3.3.2 Personal rights..... | 69.74 | 46 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 63.64 | 80 |
| 3.3.4 Use of virtual professional networks..... | 13.80 | 64 |
| 3.3.5 Collaboration within organisations..... | 19.36 | 109 |
| 3.3.6 Collaboration across organisations..... | 59.09 | 96 |
| 4 RETAIN..... | 46.67 | 67 |
| 4.1 Sustainability..... | 21.06 | 109 |
| 4.1.1 Pension system..... | 43.88 | 53 |
| 4.1.2 Social protection..... | 19.30 | 97 |
| 4.1.3 Brain retention..... | 0.00 | 118 |
| 4.2 Lifestyle..... | 72.28 | 44 |
| 4.2.1 Environmental performance..... | 77.58 | 46 |
| 4.2.2 Personal safety..... | 76.52 | 38 |
| 4.2.3 Physician density..... | 39.10 | 49 |
| 4.2.4 Sanitation..... | 95.91 | 43 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 44.16 | 58 |
| 5.1 Mid-Level Skills..... | 43.67 | 41 |
| 5.1.1 Workforce with secondary education..... | 30.57 | 59 |
| 5.1.2 Population with secondary education..... | 70.04 | 14 |
| 5.1.3 Technicians and associate professionals..... | 50.22 | 39 |
| 5.1.4 Labour productivity per employee..... | 23.84 | 61 |
| 5.2 Employability..... | 44.64 | 91 |
| 5.2.1 Ease of finding skilled employees..... | 24.75 | 106 |
| 5.2.2 Relevance of education system to the economy..... | 28.37 | 92 |
| 5.2.3 Skills matching with secondary education..... | 61.43 | 67 |
| 5.2.4 Skills matching with tertiary education..... | 64.02 | 85 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 36.60 | 40 |
| 6.1 High-Level Skills..... | 29.43 | 56 |
| 6.1.1 Workforce with tertiary education..... | 34.55 | 51 |
| 6.1.2 Population with tertiary education..... | 30.02 | 44 |
| 6.1.3 Professionals..... | 35.55 | 48 |
| 6.1.4 Researchers..... | 24.98 | 35 |
| 6.1.5 Senior officials and managers..... | 20.00 | 64 |
| 6.1.6 Availability of scientists and engineers..... | 31.47 | 82 |
| 6.2 Talent Impact..... | 43.77 | 24 |
| 6.2.1 Innovation output..... | 31.63 | 60 |
| 6.2.2 High-value exports..... | n/a | n/a |
| 6.2.3 New product entrepreneurial activity..... | 42.18 | 53 |
| 6.2.4 New business density..... | 9.23 | 52 |
| 6.2.5 Scientific journal articles..... | 92.05 | 3 |

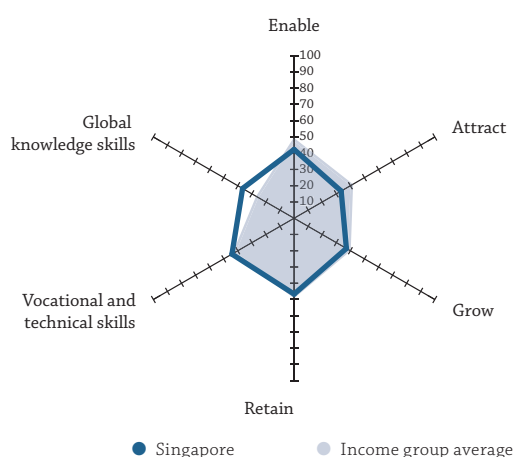
SINGAPORE

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 2 |
| Income group | High income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 5.54 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 85,208.80 |
| GDP (US\$ billions) | 292.74 |
| GTCI score | 78.42 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|----------|
| 1 ENABLE..... | 92.38 | 1 |
| 1.1 Regulatory Landscape..... | 97.21 | 1 |
| 1.1.1 Government effectiveness | 100.00 | 1 |
| 1.1.2 Business-government relations | 100.00 | 1 |
| 1.1.3 Political stability | 93.93 | 5 |
| 1.1.4 Regulatory quality | 100.00 | 1 |
| 1.1.5 Corruption | 92.11 | 7 |
| 1.2 Market Landscape..... | 81.74 | 10 |
| 1.2.1 Competition intensity | 82.57 | 18 |
| 1.2.2 Ease of doing business | 96.35 | 2 |
| 1.2.3 Cluster development | 87.93 | 11 |
| 1.2.4 R&D expenditure | 50.93 | 15 |
| 1.2.5 ICT infrastructure | 87.86 | 18 |
| 1.2.6 Technology utilisation | 84.81 | 12 |
| 1.3 Business and Labour Landscape..... | 98.20 | 2 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 97.45 | 2 |
| 1.3.4 Labour-employer cooperation | 98.37 | 2 |
| Management Practice | | |
| 1.3.5 Professional management..... | 97.42 | 4 |
| 1.3.6 Relationship of pay to productivity..... | 95.96 | 2 |
| 2 ATTRACT..... | 90.61 | 1 |
| 2.1 External Openness | 96.24 | 1 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 89.82 | 2 |
| 2.1.2 Prevalence of foreign ownership | 96.79 | 4 |
| Attract People | | |
| 2.1.3 Migrant stock | 100.00 | 1 |
| 2.1.4 International students..... | 100.00 | 1 |
| 2.1.5 Brain gain | 94.58 | 4 |
| 2.2 Internal Openness | 84.99 | 5 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 79.31 | 8 |
| 2.2.2 Tolerance of immigrants..... | 71.83 | 37 |
| 2.2.3 Social mobility..... | 95.64 | 5 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 86.75 | 3 |
| 2.2.6 Leadership opportunities for women..... | 91.40 | 6 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 75.71 | 10 |
| 3.1 Formal Education..... | 59.71 | 9 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 18.57 | 59 |
| 3.1.2 Tertiary enrolment..... | 61.03 | 25 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 24.04 | 54 |
| 3.1.4 Reading, maths, and science | 100.00 | 1 |
| 3.1.5 University ranking | 94.90 | 3 |
| 3.2 Lifelong Learning..... | 92.00 | 2 |
| 3.2.1 Quality of management schools..... | 90.74 | 4 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 93.27 | 3 |
| 3.3 Access to Growth Opportunities | 75.43 | 16 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 73.74 | 17 |
| 3.3.2 Personal rights..... | 47.21 | 76 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 93.03 | 9 |
| 3.3.4 Use of virtual professional networks..... | 67.96 | 12 |
| 3.3.5 Collaboration within organisations | 80.72 | 10 |
| 3.3.6 Collaboration across organisations | 89.92 | 13 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 72.57 | 25 |
| 4.1 Sustainability | 66.69 | 25 |
| 4.1.1 Pension system | 61.22 | 41 |
| 4.1.2 Social protection | 52.29 | 36 |
| 4.1.3 Brain retention | 86.56 | 6 |
| 4.2 Lifestyle | 78.46 | 31 |
| 4.2.1 Environmental performance..... | 93.21 | 14 |
| 4.2.2 Personal safety | 90.33 | 17 |
| 4.2.3 Physician density | 30.29 | 59 |
| 4.2.4 Sanitation | 100.00 | 1 |

| | | |
|--|--------------|----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 70.96 | 8 |
| 5.1 Mid-Level Skills | 55.06 | 20 |
| 5.1.1 Workforce with secondary education | 25.97 | 67 |
| 5.1.2 Population with secondary education | 26.82 | 68 |
| 5.1.3 Technicians and associate professionals | 88.79 | 4 |
| 5.1.4 Labour productivity per employee..... | 78.66 | 6 |
| 5.2 Employability..... | 86.86 | 5 |
| 5.2.1 Ease of finding skilled employees | 77.89 | 19 |
| 5.2.2 Relevance of education system to the economy | 93.27 | 2 |
| 5.2.3 Skills matching with secondary education..... | 83.88 | 9 |
| 5.2.4 Skills matching with tertiary education | 92.41 | 3 |

| | | |
|--|--------------|----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 68.26 | 1 |
| 6.1 High-Level Skills | 75.41 | 1 |
| 6.1.1 Workforce with tertiary education | 73.15 | 5 |
| 6.1.2 Population with tertiary education | 72.56 | 4 |
| 6.1.3 Professionals..... | 50.29 | 23 |
| 6.1.4 Researchers..... | 80.63 | 6 |
| 6.1.5 Senior officials and managers | 99.38 | 2 |
| 6.1.6 Availability of scientists and engineers | 76.47 | 9 |
| 6.2 Talent Impact..... | 61.10 | 5 |
| 6.2.1 Innovation output..... | 63.62 | 17 |
| 6.2.2 High-value exports..... | 92.84 | 2 |
| 6.2.3 New product entrepreneurial activity | 50.21 | 34 |
| 6.2.4 New business density | 55.02 | 10 |
| 6.2.5 Scientific journal articles..... | 43.82 | 40 |

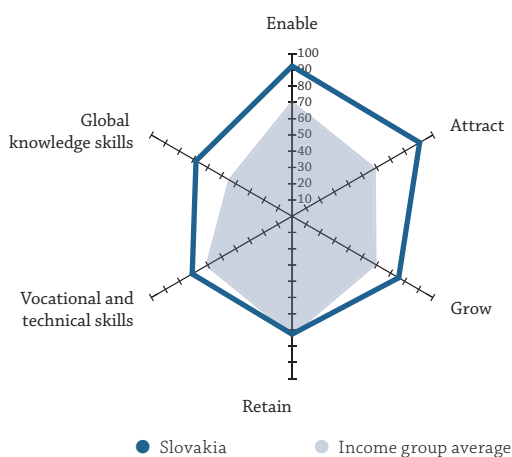
SLOVAKIA

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 40 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 5.42 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 28,877.30 |
| GDP (US\$ billions) | 86.58 |
| GTCI score..... | 50.02 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 58.70 | 40 |
| 1.1 Regulatory Landscape..... | 57.77 | 45 |
| 1.1.1 Government effectiveness | 63.75 | 37 |
| 1.1.2 Business-government relations | 24.94 | 116 |
| 1.1.3 Political stability | 87.14 | 17 |
| 1.1.4 Regulatory quality | 64.32 | 36 |
| 1.1.5 Corruption | 48.68 | 44 |
| 1.2 Market Landscape..... | 60.10 | 34 |
| 1.2.1 Competition intensity | 79.71 | 23 |
| 1.2.2 Ease of doing business | 78.75 | 31 |
| 1.2.3 Cluster development | 48.92 | 48 |
| 1.2.4 R&D expenditure | 20.56 | 37 |
| 1.2.5 ICT infrastructure | 74.35 | 35 |
| 1.2.6 Technology utilisation | 58.30 | 40 |
| 1.3 Business and Labour Landscape..... | 58.23 | 56 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Cluster labour market policies..... | 58.90 | 65 |
| 1.3.4 Labour-employer cooperation | 45.80 | 77 |
| Management Practice | | |
| 1.3.5 Professional management..... | 48.42 | 47 |
| 1.3.6 Relationship of pay to productivity..... | 59.60 | 39 |
| 2 ATTRACT..... | 45.49 | 51 |
| 2.1 External Openness | 43.36 | 43 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 72.58 | 14 |
| 2.1.2 Prevalence of foreign ownership | 93.33 | 6 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 7.06 | 68 |
| 2.1.4 International students..... | 29.15 | 31 |
| 2.1.5 Brain gain..... | 14.66 | 114 |
| 2.2 Internal Openness..... | 47.62 | 72 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 47.13 | 56 |
| 2.2.2 Tolerance of immigrants..... | 21.13 | 112 |
| 2.2.3 Social mobility..... | 44.41 | 60 |
| Gender Equality | | |
| 2.2.4 Female graduates | 91.48 | 13 |
| 2.2.5 Gender earnings gap | 51.81 | 55 |
| 2.2.6 Leadership opportunities for women..... | 29.75 | 80 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 44.70 | 44 |
| 3.1 Formal Education..... | 40.19 | 38 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 51.53 | 16 |
| 3.1.2 Tertiary enrolment..... | 46.10 | 50 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 22.51 | 56 |
| 3.1.4 Reading, maths, and science | 58.24 | 38 |
| 3.1.5 University ranking | 22.60 | 57 |
| 3.2 Lifelong Learning..... | 41.95 | 64 |
| 3.2.1 Quality of management schools..... | 32.54 | 91 |
| 3.2.2 Prevalence of training in firms..... | 52.90 | 30 |
| 3.2.3 Employee development..... | 40.40 | 58 |
| 3.3 Access to Growth Opportunities | 51.95 | 49 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 47.49 | 50 |
| 3.3.2 Personal rights..... | 78.53 | 33 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 66.36 | 74 |
| 3.3.4 Use of virtual professional networks..... | 15.32 | 62 |
| 3.3.5 Collaboration within organisations | 33.60 | 74 |
| 3.3.6 Collaboration across organisations | 70.39 | 53 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 64.75 | 35 |
| 4.1 Sustainability | 46.41 | 46 |
| 4.1.1 Pension system | 78.57 | 30 |
| 4.1.2 Social protection | 39.46 | 54 |
| 4.1.3 Brain retention | 21.18 | 105 |
| 4.2 Lifestyle | 83.09 | 16 |
| 4.2.1 Environmental performance..... | 90.18 | 24 |
| 4.2.2 Personal safety | 89.55 | 19 |
| 4.2.3 Physician density | 54.01 | 21 |
| 4.2.4 Sanitation | 98.64 | 27 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 54.96 | 31 |
| 5.1 Mid-Level Skills | 66.78 | 5 |
| 5.1.1 Workforce with secondary education | 62.66 | 3 |
| 5.1.2 Population with secondary education | 94.15 | 2 |
| 5.1.3 Technicians and associate professionals | 67.71 | 16 |
| 5.1.4 Labour productivity per employee..... | 42.58 | 32 |
| 5.2 Employability..... | 43.13 | 98 |
| 5.2.1 Ease of finding skilled employees | 29.70 | 95 |
| 5.2.2 Relevance of education system to the economy | 20.91 | 103 |
| 5.2.3 Skills matching with secondary education..... | 60.98 | 69 |
| 5.2.4 Skills matching with tertiary education | 60.94 | 98 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 31.53 | 51 |
| 6.1 High-Level Skills | 25.67 | 68 |
| 6.1.1 Workforce with tertiary education | 32.02 | 57 |
| 6.1.2 Population with tertiary education | 3.60 | 94 |
| 6.1.3 Professionals..... | 31.21 | 53 |
| 6.1.4 Researchers..... | 32.06 | 30 |
| 6.1.5 Senior officials and managers | 26.88 | 52 |
| 6.1.6 Availability of scientists and engineers | 28.24 | 89 |
| 6.2 Talent Impact..... | 37.40 | 38 |
| 6.2.1 Innovation output..... | 49.74 | 33 |
| 6.2.2 High-value exports..... | 19.40 | 41 |
| 6.2.3 New product entrepreneurial activity | 43.98 | 50 |
| 6.2.4 New business density | 17.82 | 35 |
| 6.2.5 Scientific journal articles..... | 56.05 | 24 |

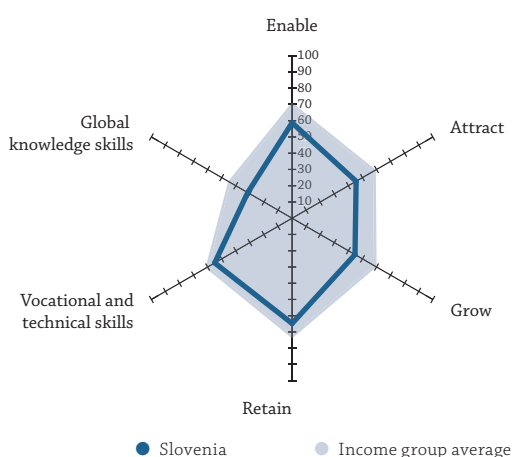
SLOVENIA

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 28 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 2.06 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 31,122.40 |
| GDP (US\$ billions) | 42.75 |
| GTCI score | 55.77 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 58.68 | 41 |
| 1.1 Regulatory Landscape..... | 61.46 | 40 |
| 1.1.1 Government effectiveness | 67.10 | 34 |
| 1.1.2 Business-government relations | 32.01 | 112 |
| 1.1.3 Political stability | 86.17 | 22 |
| 1.1.4 Regulatory quality | 60.19 | 42 |
| 1.1.5 Corruption | 61.84 | 29 |
| 1.2 Market Landscape..... | 62.82 | 32 |
| 1.2.1 Competition intensity | 71.43 | 52 |
| 1.2.2 Ease of doing business | 79.74 | 28 |
| 1.2.3 Cluster development | 35.91 | 78 |
| 1.2.4 R&D expenditure | 55.61 | 12 |
| 1.2.5 ICT infrastructure | 78.04 | 28 |
| 1.2.6 Technology utilisation | 56.18 | 44 |
| 1.3 Business and Labour Landscape..... | 51.76 | 74 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 22.33 | 105 |
| 1.3.2 Ease of redundancy | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 65.38 | 47 |
| 1.3.4 Labour-employer cooperation | 48.51 | 67 |
| Management Practice | | |
| 1.3.5 Professional management..... | 41.55 | 65 |
| 1.3.6 Relationship of pay to productivity..... | 42.76 | 66 |
| 2 ATTRACT..... | 46.49 | 47 |
| 2.1 External Openness | 27.17 | 92 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 38.64 | 90 |
| 2.1.2 Prevalence of foreign ownership | 34.07 | 104 |
| Attract People | | |
| 2.1.3 Migrant stock | 25.02 | 33 |
| 2.1.4 International students..... | 14.21 | 57 |
| 2.1.5 Brain gain..... | 23.90 | 96 |
| 2.2 Internal Openness..... | 65.82 | 20 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 70.11 | 17 |
| 2.2.2 Tolerance of immigrants..... | 59.15 | 53 |
| 2.2.3 Social mobility..... | 47.96 | 50 |
| Gender Equality | | |
| 2.2.4 Female graduates | 82.65 | 33 |
| 2.2.5 Gender earnings gap | 75.90 | 9 |
| 2.2.6 Leadership opportunities for women..... | 59.14 | 34 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 54.21 | 30 |
| 3.1 Formal Education..... | 54.44 | 17 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 67.15 | 5 |
| 3.1.2 Tertiary enrolment..... | 72.64 | 9 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 26.60 | 45 |
| 3.1.4 Reading, maths, and science | 80.11 | 8 |
| 3.1.5 University ranking | 25.73 | 51 |
| 3.2 Lifelong Learning..... | 50.51 | 44 |
| 3.2.1 Quality of management schools..... | 52.12 | 46 |
| 3.2.2 Prevalence of training in firms..... | 50.26 | 34 |
| 3.2.3 Employee development..... | 49.16 | 43 |
| 3.3 Access to Growth Opportunities | 57.66 | 35 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 45.25 | 57 |
| 3.3.2 Personal rights..... | 91.56 | 12 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 71.52 | 56 |
| 3.3.4 Use of virtual professional networks..... | 28.18 | 33 |
| 3.3.5 Collaboration within organisations | 44.06 | 45 |
| 3.3.6 Collaboration across organisations | 65.39 | 77 |
| 4 RETAIN..... | 71.03 | 26 |
| 4.1 Sustainability | 58.13 | 32 |
| 4.1.1 Pension system | 86.73 | 23 |
| 4.1.2 Social protection | 54.62 | 32 |
| 4.1.3 Brain retention | 33.03 | 83 |
| 4.2 Lifestyle | 83.93 | 15 |
| 4.2.1 Environmental performance..... | 96.83 | 5 |
| 4.2.2 Personal safety | 95.83 | 11 |
| 4.2.3 Physician density | 44.07 | 41 |
| 4.2.4 Sanitation | 98.98 | 23 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 59.21 | 26 |
| 5.1 Mid-Level Skills | 56.08 | 18 |
| 5.1.1 Workforce with secondary education | 49.22 | 16 |
| 5.1.2 Population with secondary education | 78.74 | 6 |
| 5.1.3 Technicians and associate professionals | 56.50 | 31 |
| 5.1.4 Labour productivity per employee..... | 39.86 | 38 |
| 5.2 Employability..... | 62.34 | 40 |
| 5.2.1 Ease of finding skilled employees | 60.40 | 39 |
| 5.2.2 Relevance of education system to the economy | 51.20 | 45 |
| 5.2.3 Skills matching with secondary education..... | 70.84 | 31 |
| 5.2.4 Skills matching with tertiary education | 66.93 | 77 |
| 6 GLOBAL KNOWLEDGE SKILLS | 45.03 | 25 |
| 6.1 High-Level Skills | 43.76 | 32 |
| 6.1.1 Workforce with tertiary education | 48.00 | 28 |
| 6.1.2 Population with tertiary education | 19.04 | 69 |
| 6.1.3 Professionals..... | 60.98 | 14 |
| 6.1.4 Researchers..... | 46.20 | 24 |
| 6.1.5 Senior officials and managers | 46.25 | 24 |
| 6.1.6 Availability of scientists and engineers | 42.06 | 56 |
| 6.2 Talent Impact..... | 46.30 | 20 |
| 6.2.1 Innovation output..... | 49.74 | 33 |
| 6.2.2 High-value exports..... | 12.05 | 59 |
| 6.2.3 New product entrepreneurial activity | 44.11 | 49 |
| 6.2.4 New business density | 25.59 | 25 |
| 6.2.5 Scientific journal articles..... | 100.00 | 1 |

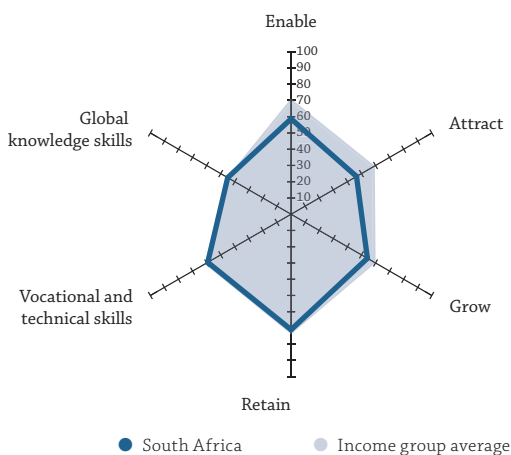
SOUTH AFRICA

Key Indicators

Rank (out of 119)..... **63**
 Income group..... **Upper middle income**
 Regional group..... **Sub-Saharan Africa**
 Population (millions)..... **54.96**

GDP per capita (PPP US\$) **13,165.20**
 GDP (US\$ billions) **312.80**
 GTCI score..... **41.22**
 GTCI score (income group average) **40.93**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|---|-------|------|
| 1 ENABLE..... 50.63 62 | | |
| 1.1 Regulatory Landscape..... 47.82 63 | | |
| 1.1.1 Government effectiveness 49.10 51 | | |
| 1.1.2 Business-government relations 37.31 101 | | |
| 1.1.3 Political stability 59.47 73 | | |
| 1.1.4 Regulatory quality 52.43 57 | | |
| 1.1.5 Corruption 40.79 52 | | |
| 1.2 Market Landscape 57.00 37 | | |
| 1.2.1 Competition intensity 78.00 27 | | |
| 1.2.2 Ease of doing business 59.34 67 | | |
| 1.2.3 Cluster development 63.47 28 | | |
| 1.2.4 R&D expenditure 16.82 45 | | |
| 1.2.5 ICT infrastructure 48.02 72 | | |
| 1.2.6 Technology utilisation 76.33 20 | | |
| 1.3 Business and Labour Landscape..... 47.07 90 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring 55.67 69 | | |
| 1.3.2 Ease of redundancy 70.00 63 | | |
| 1.3.3 Active labour market policies..... 46.37 104 | | |
| 1.3.4 Labour-employer cooperation 0.00 119 | | |
| Management Practice | | |
| 1.3.5 Professional management..... 77.36 21 | | |
| 1.3.6 Relationship of pay to productivity..... 33.00 88 | | |
| 2 ATTRACT..... 49.50 40 | | |
| 2.1 External Openness 42.09 45 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... 55.09 48 | | |
| 2.1.2 Prevalence of foreign ownership 74.32 27 | | |
| Attract People | | |
| 2.1.3 Migrant stock..... 12.58 50 | | |
| 2.1.4 International students..... 21.68 43 | | |
| 2.1.5 Brain gain..... 46.79 45 | | |
| 2.2 Internal Openness..... 56.90 39 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... 51.72 49 | | |
| 2.2.2 Tolerance of immigrants..... 60.56 51 | | |
| 2.2.3 Social mobility..... 48.23 49 | | |
| Gender Equality | | |
| 2.2.4 Female graduates 84.16 28 | | |
| 2.2.5 Gender earnings gap 53.01 52 | | |
| 2.2.6 Leadership opportunities for women..... 43.73 60 | | |

| | Score | Rank |
|---|-------|------|
| 3 GROW..... 50.09 38 | | |
| 3.1 Formal Education..... 22.05 76 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment 8.13 83 | | |
| 3.1.2 Tertiary enrolment..... 16.43 89 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... 16.62 75 | | |
| 3.1.4 Reading, maths, and science n/a n/a | | |
| 3.1.5 University ranking 47.02 31 | | |
| 3.2 Lifelong Learning..... 65.02 24 | | |
| 3.2.1 Quality of management schools..... 75.93 20 | | |
| 3.2.2 Prevalence of training in firms..... 44.06 40 | | |
| 3.2.3 Employee development..... 75.08 19 | | |
| 3.3 Access to Growth Opportunities 63.19 28 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority..... 68.72 22 | | |
| 3.3.2 Personal rights..... 74.86 37 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... 73.94 50 | | |
| 3.3.4 Use of virtual professional networks..... 26.57 36 | | |
| 3.3.5 Collaboration within organisations 62.28 25 | | |
| 3.3.6 Collaboration across organisations 72.76 43 | | |
| 4 RETAIN..... 33.93 97 | | |
| 4.1 Sustainability 28.93 86 | | |
| 4.1.1 Pension system 4.08 95 | | |
| 4.1.2 Social protection 40.56 51 | | |
| 4.1.3 Brain retention 42.14 61 | | |
| 4.2 Lifestyle 38.93 99 | | |
| 4.2.1 Environmental performance..... 62.37 72 | | |
| 4.2.2 Personal safety 19.52 114 | | |
| 4.2.3 Physician density 12.02 87 | | |
| 4.2.4 Sanitation 61.82 91 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... 41.61 67 | | |
| 5.1 Mid-Level Skills 42.63 46 | | |
| 5.1.1 Workforce with secondary education 30.47 60 | | |
| 5.1.2 Population with secondary education 69.04 16 | | |
| 5.1.3 Technicians and associate professionals 47.09 46 | | |
| 5.1.4 Labour productivity per employee..... 23.93 60 | | |
| 5.2 Employability..... 40.59 106 | | |
| 5.2.1 Ease of finding skilled employees 33.99 87 | | |
| 5.2.2 Relevance of education system to the economy 6.97 115 | | |
| 5.2.3 Skills matching with secondary education..... 49.60 105 | | |
| 5.2.4 Skills matching with tertiary education 71.80 58 | | |
| 6 GLOBAL KNOWLEDGE SKILLS 21.57 76 | | |
| 6.1 High-Level Skills 18.47 85 | | |
| 6.1.1 Workforce with tertiary education 19.58 84 | | |
| 6.1.2 Population with tertiary education 10.12 85 | | |
| 6.1.3 Professionals..... 9.54 92 | | |
| 6.1.4 Researchers..... 5.15 64 | | |
| 6.1.5 Senior officials and managers 44.38 26 | | |
| 6.1.6 Availability of scientists and engineers 22.06 99 | | |
| 6.2 Talent Impact..... 24.68 60 | | |
| 6.2.1 Innovation output..... 27.77 68 | | |
| 6.2.2 High-value exports..... 11.11 62 | | |
| 6.2.3 New product entrepreneurial activity 49.05 35 | | |
| 6.2.4 New business density 10.39 47 | | |
| 6.2.5 Scientific journal articles..... 25.08 52 | | |

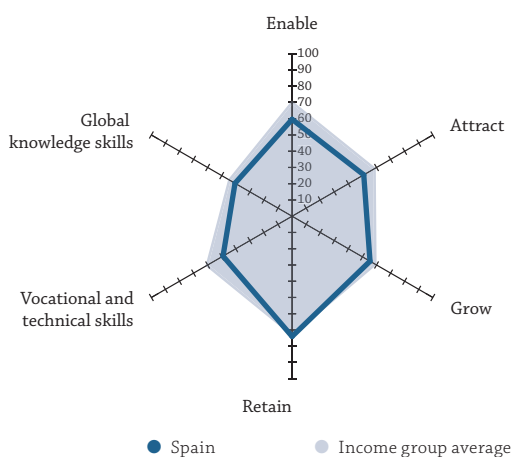
SPAIN

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 31 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 46.42 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 34,526.50 |
| GDP (US\$ billions) | 1,199.06 |
| GTCI score | 54.91 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|---|--------------|-----------|
| 1 ENABLE | 59.62 | 38 |
| 1.1 Regulatory Landscape | 65.57 | 32 |
| 1.1.1 Government effectiveness | 72.49 | 25 |
| 1.1.2 Business-government relations | 62.25 | 44 |
| 1.1.3 Political stability | 70.87 | 47 |
| 1.1.4 Regulatory quality | 64.32 | 36 |
| 1.1.5 Corruption | 57.89 | 33 |
| 1.2 Market Landscape | 64.23 | 30 |
| 1.2.1 Competition intensity | 83.14 | 16 |
| 1.2.2 Ease of doing business | 78.97 | 30 |
| 1.2.3 Cluster development | 59.44 | 31 |
| 1.2.4 R&D expenditure | 28.50 | 31 |
| 1.2.5 ICT infrastructure | 83.36 | 23 |
| 1.2.6 Technology utilisation | 51.94 | 48 |
| 1.3 Business and Labour Landscape | 49.07 | 84 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 22.33 | 105 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies | 59.48 | 62 |
| 1.3.4 Labour-employer cooperation | 47.15 | 70 |
| Management Practice | | |
| 1.3.5 Professional management | 54.15 | 33 |
| 1.3.6 Relationship of pay to productivity | 31.31 | 93 |
| 2 ATTRACT | 50.92 | 34 |
| 2.1 External Openness | 43.63 | 41 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer | 65.80 | 26 |
| 2.1.2 Prevalence of foreign ownership | 72.59 | 29 |
| Attract People | | |
| 2.1.3 Migrant stock | 27.85 | 29 |
| 2.1.4 International students | 14.79 | 53 |
| 2.1.5 Brain gain | 37.15 | 71 |
| 2.2 Internal Openness | 58.21 | 36 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 48.28 | 54 |
| 2.2.2 Tolerance of immigrants | 92.96 | 5 |
| 2.2.3 Social mobility | 54.50 | 38 |
| Gender Equality | | |
| 2.2.4 Female graduates | 72.67 | 60 |
| 2.2.5 Gender earnings gap | 55.42 | 46 |
| 2.2.6 Leadership opportunities for women | 25.45 | 89 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW | 55.36 | 28 |
| 3.1 Formal Education | 51.83 | 23 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 29.57 | 41 |
| 3.1.2 Tertiary enrolment | 78.60 | 4 |
| Quality | | |
| 3.1.3 Tertiary education expenditure | 22.51 | 56 |
| 3.1.4 Reading, maths, and science | 71.67 | 26 |
| 3.1.5 University ranking | 56.81 | 20 |
| 3.2 Lifelong Learning | 57.93 | 31 |
| 3.2.1 Quality of management schools | 79.63 | 12 |
| 3.2.2 Prevalence of training in firms | 63.19 | 23 |
| 3.2.3 Employee development | 30.98 | 81 |
| 3.3 Access to Growth Opportunities | 56.31 | 38 |
| Empowerment | | |
| 3.3.1 Delegation of authority | 44.69 | 59 |
| 3.3.2 Personal rights | 83.34 | 24 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks | 68.48 | 66 |
| 3.3.4 Use of virtual professional networks | 41.54 | 24 |
| 3.3.5 Collaboration within organisations | 27.28 | 90 |
| 3.3.6 Collaboration across organisations | 72.53 | 44 |

| | | |
|---------------------------------------|--------------|-----------|
| 4 RETAIN | 73.96 | 23 |
| 4.1 Sustainability | 62.47 | 27 |
| 4.1.1 Pension system | 68.37 | 35 |
| 4.1.2 Social protection | 82.15 | 15 |
| 4.1.3 Brain retention | 36.90 | 72 |
| 4.2 Lifestyle | 85.45 | 13 |
| 4.2.1 Environmental performance | 96.70 | 6 |
| 4.2.2 Personal safety | 84.33 | 25 |
| 4.2.3 Physician density | 60.90 | 14 |
| 4.2.4 Sanitation | 99.89 | 12 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS | 49.06 | 45 |
| 5.1 Mid-Level Skills | 36.82 | 59 |
| 5.1.1 Workforce with secondary education | 20.24 | 78 |
| 5.1.2 Population with secondary education | 26.39 | 69 |
| 5.1.3 Technicians and associate professionals | 48.88 | 43 |
| 5.1.4 Labour productivity per employee | 51.79 | 23 |
| 5.2 Employability | 61.29 | 43 |
| 5.2.1 Ease of finding skilled employees | 62.38 | 35 |
| 5.2.2 Relevance of education system to the economy | 42.55 | 56 |
| 5.2.3 Skills matching with secondary education | 67.20 | 45 |
| 5.2.4 Skills matching with tertiary education | 73.02 | 50 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 40.55 | 32 |
| 6.1 High-Level Skills | 44.60 | 28 |
| 6.1.1 Workforce with tertiary education | 54.30 | 20 |
| 6.1.2 Population with tertiary education | 49.23 | 14 |
| 6.1.3 Professionals | 49.13 | 25 |
| 6.1.4 Researchers | 32.06 | 30 |
| 6.1.5 Senior officials and managers | 24.38 | 57 |
| 6.1.6 Availability of scientists and engineers | 58.53 | 33 |
| 6.2 Talent Impact | 36.50 | 42 |
| 6.2.1 Innovation output | 55.18 | 25 |
| 6.2.2 High-value exports | 13.37 | 55 |
| 6.2.3 New product entrepreneurial activity | 34.18 | 62 |
| 6.2.4 New business density | 17.06 | 36 |
| 6.2.5 Scientific journal articles | 62.71 | 20 |

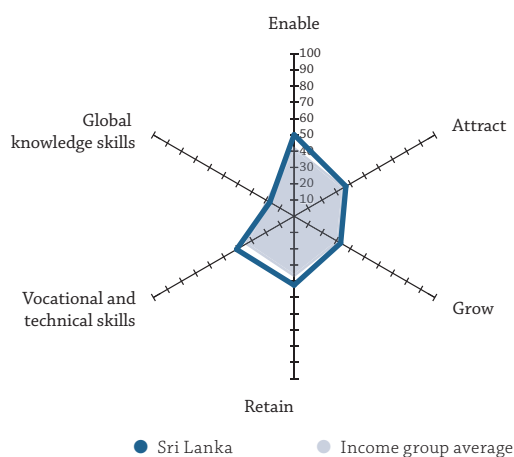
SRI LANKA

Key Indicators

| | |
|----------------------------|----------------------------------|
| Rank (out of 119)..... | 82 |
| Income group..... | Lower middle income |
| Regional group..... | Central and Southern Asia |
| Population (millions)..... | 20.97 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 11,738.90 |
| GDP (US\$ billions)..... | 82.32 |
| GTCI score..... | 36.75 |
| GTCI score (income group average)..... | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 50.14 | 63 |
| 1.1 Regulatory Landscape..... | 49.72 | 57 |
| 1.1.1 Government effectiveness..... | 42.42 | 68 |
| 1.1.2 Business-government relations..... | 70.20 | 27 |
| 1.1.3 Political stability..... | 63.11 | 61 |
| 1.1.4 Regulatory quality..... | 43.93 | 72 |
| 1.1.5 Corruption..... | 28.95 | 76 |
| 1.2 Market Landscape..... | 40.25 | 84 |
| 1.2.1 Competition intensity..... | 70.00 | 62 |
| 1.2.2 Ease of doing business..... | 47.39 | 92 |
| 1.2.3 Cluster development..... | 44.89 | 58 |
| 1.2.4 R&D expenditure..... | 2.10 | 92 |
| 1.2.5 ICT infrastructure..... | 30.83 | 93 |
| 1.2.6 Technology utilisation..... | 46.29 | 58 |
| 1.3 Business and Labour Landscape..... | 60.44 | 47 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 100.00 | 1 |
| 1.3.2 Ease of redundancy..... | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 60.49 | 59 |
| 1.3.4 Labour-employer cooperation..... | 54.74 | 49 |
| Management Practice | | |
| 1.3.5 Professional management..... | 50.14 | 41 |
| 1.3.6 Relationship of pay to productivity..... | 57.24 | 44 |
| 2 ATTRACT..... | 36.80 | 88 |
| 2.1 External Openness..... | 27.76 | 87 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 46.74 | 69 |
| 2.1.2 Prevalence of foreign ownership..... | 55.56 | 67 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 0.26 | 115 |
| 2.1.4 International students..... | 1.52 | 85 |
| 2.1.5 Brain gain..... | 34.74 | 77 |
| 2.2 Internal Openness..... | 45.84 | 80 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 8.05 | 115 |
| 2.2.2 Tolerance of immigrants..... | 52.11 | 71 |
| 2.2.3 Social mobility..... | 53.13 | 42 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 89.71 | 21 |
| 2.2.5 Gender earnings gap..... | 16.87 | 104 |
| 2.2.6 Leadership opportunities for women..... | 55.20 | 36 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 33.09 | 87 |
| 3.1 Formal Education..... | 12.95 | 100 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 9.19 | 80 |
| 3.1.2 Tertiary enrolment..... | 16.80 | 87 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 8.44 | 89 |
| 3.1.4 Reading, maths, and science..... | n/a | n/a |
| 3.1.5 University ranking..... | 17.36 | 68 |
| 3.2 Lifelong Learning..... | 42.22 | 60 |
| 3.2.1 Quality of management schools..... | 58.73 | 34 |
| 3.2.2 Prevalence of training in firms..... | 19.79 | 78 |
| 3.2.3 Employee development..... | 48.15 | 46 |
| 3.3 Access to Growth Opportunities..... | 44.11 | 76 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 52.79 | 36 |
| 3.3.2 Personal rights..... | 26.04 | 101 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 64.55 | 78 |
| 3.3.4 Use of virtual professional networks..... | 8.06 | 78 |
| 3.3.5 Collaboration within organisations..... | 42.80 | 48 |
| 3.3.6 Collaboration across organisations..... | 70.43 | 52 |
| 4 RETAIN..... | 42.40 | 78 |
| 4.1 Sustainability..... | 30.05 | 83 |
| 4.1.1 Pension system..... | 22.45 | 72 |
| 4.1.2 Social protection..... | 20.09 | 95 |
| 4.1.3 Brain retention..... | 47.61 | 45 |
| 4.2 Lifestyle..... | 54.76 | 74 |
| 4.2.1 Environmental performance..... | 53.10 | 89 |
| 4.2.2 Personal safety..... | 60.13 | 72 |
| 4.2.3 Physician density..... | 11.38 | 88 |
| 4.2.4 Sanitation..... | 94.43 | 49 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 40.84 | 69 |
| 5.1 Mid-Level Skills..... | 19.63 | 90 |
| 5.1.1 Workforce with secondary education..... | 13.73 | 91 |
| 5.1.2 Population with secondary education..... | 21.97 | 81 |
| 5.1.3 Technicians and associate professionals..... | 25.56 | 76 |
| 5.1.4 Labour productivity per employee..... | 17.26 | 69 |
| 5.2 Employability..... | 62.06 | 41 |
| 5.2.1 Ease of finding skilled employees..... | 57.10 | 43 |
| 5.2.2 Relevance of education system to the economy..... | 55.77 | 37 |
| 5.2.3 Skills matching with secondary education..... | 68.40 | 40 |
| 5.2.4 Skills matching with tertiary education..... | 66.97 | 76 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 17.24 | 90 |
| 6.1 High-Level Skills..... | 25.70 | 67 |
| 6.1.1 Workforce with tertiary education..... | 27.67 | 67 |
| 6.1.2 Population with tertiary education..... | 23.16 | 58 |
| 6.1.3 Professionals..... | 15.90 | 81 |
| 6.1.4 Researchers..... | 1.20 | 85 |
| 6.1.5 Senior officials and managers..... | 26.88 | 52 |
| 6.1.6 Availability of scientists and engineers..... | 59.41 | 31 |
| 6.2 Talent Impact..... | 8.77 | 106 |
| 6.2.1 Innovation output..... | 25.48 | 76 |
| 6.2.2 High-value exports..... | 1.51 | 99 |
| 6.2.3 New product entrepreneurial activity..... | n/a | n/a |
| 6.2.4 New business density..... | 2.79 | 83 |
| 6.2.5 Scientific journal articles..... | 5.31 | 90 |

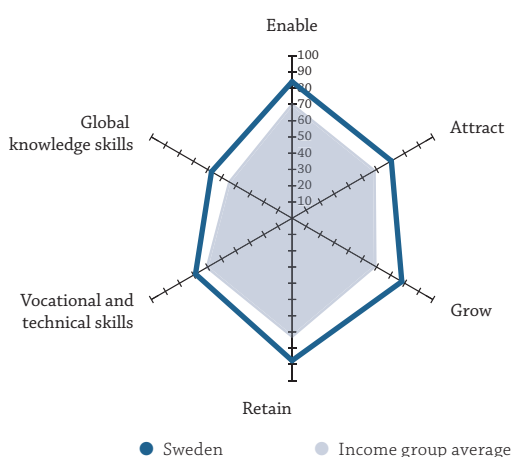
SWEDEN

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 5 |
| Income group | High income |
| Regional group..... | Europe |
| Population (millions) | 9.80 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 46,420.40 |
| GDP (US\$ billions) | 492.62 |
| GTCI score..... | 74.32 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 83.98 | 5 |
| 1.1 Regulatory Landscape..... | 88.18 | 7 |
| 1.1.1 Government effectiveness | 88.69 | 8 |
| 1.1.2 Business-government relations | 78.37 | 18 |
| 1.1.3 Political stability | 87.38 | 16 |
| 1.1.4 Regulatory quality..... | 89.08 | 5 |
| 1.1.5 Corruption | 97.37 | 4 |
| 1.2 Market Landscape..... | 86.85 | 4 |
| 1.2.1 Competition intensity | 81.71 | 20 |
| 1.2.2 Ease of doing business | 90.90 | 8 |
| 1.2.3 Cluster development | 82.35 | 14 |
| 1.2.4 R&D expenditure | 73.60 | 5 |
| 1.2.5 ICT infrastructure..... | 94.68 | 6 |
| 1.2.6 Technology utilisation..... | 97.88 | 2 |
| 1.3 Business and Labour Landscape..... | 76.92 | 19 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 60.00 | 81 |
| 1.3.3 Active labour market policies..... | 76.27 | 23 |
| 1.3.4 Labour-employer cooperation | 95.66 | 4 |
| Management Practice | | |
| 1.3.5 Professional management..... | 98.28 | 2 |
| 1.3.6 Relationship of pay to productivity..... | 64.65 | 28 |
| 2 ATTRACT..... | 70.52 | 11 |
| 2.1 External Openness | 54.23 | 22 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 66.06 | 25 |
| 2.1.2 Prevalence of foreign ownership | 81.48 | 16 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 36.85 | 19 |
| 2.1.4 International students..... | 30.72 | 30 |
| 2.1.5 Brain gain..... | 56.02 | 28 |
| 2.2 Internal Openness..... | 86.81 | 2 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 100.00 | 1 |
| 2.2.2 Tolerance of immigrants..... | 84.51 | 18 |
| 2.2.3 Social mobility..... | 82.83 | 14 |
| Gender Equality | | |
| 2.2.4 Female graduates | 87.53 | 23 |
| 2.2.5 Gender earnings gap | 73.49 | 11 |
| 2.2.6 Leadership opportunities for women..... | 92.47 | 5 |

| | Score | Rank |
|---|--------------|----------|
| 3 GROW..... | 77.95 | 6 |
| 3.1 Formal Education..... | 58.30 | 13 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 43.29 | 25 |
| 3.1.2 Tertiary enrolment..... | 54.44 | 40 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 47.83 | 7 |
| 3.1.4 Reading, maths, and science | 73.76 | 22 |
| 3.1.5 University ranking | 72.22 | 13 |
| 3.2 Lifelong Learning..... | 85.43 | 7 |
| 3.2.1 Quality of management schools..... | 76.46 | 18 |
| 3.2.2 Prevalence of training in firms..... | 88.26 | 3 |
| 3.2.3 Employee development..... | 91.58 | 4 |
| 3.3 Access to Growth Opportunities | 90.11 | 2 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 100.00 | 1 |
| 3.3.2 Personal rights..... | 88.17 | 16 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 98.79 | 3 |
| 3.3.4 Use of virtual professional networks..... | 60.60 | 15 |
| 3.3.5 Collaboration within organisations | 100.00 | 1 |
| 3.3.6 Collaboration across organisations | 93.08 | 8 |

| | | |
|--------------------------------------|--------------|----------|
| 4 RETAIN..... | 87.59 | 4 |
| 4.1 Sustainability | 84.72 | 8 |
| 4.1.1 Pension system | 88.78 | 21 |
| 4.1.2 Social protection | 89.76 | 9 |
| 4.1.3 Brain retention | 75.63 | 12 |
| 4.2 Lifestyle..... | 90.46 | 3 |
| 4.2.1 Environmental performance..... | 99.53 | 3 |
| 4.2.2 Personal safety | 97.55 | 2 |
| 4.2.3 Physician density | 65.54 | 8 |
| 4.2.4 Sanitation | 99.20 | 19 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 68.63 | 11 |
| 5.1 Mid-Level Skills | 58.21 | 13 |
| 5.1.1 Workforce with secondary education | 39.60 | 29 |
| 5.1.2 Population with secondary education | 52.92 | 31 |
| 5.1.3 Technicians and associate professionals | 80.72 | 9 |
| 5.1.4 Labour productivity per employee..... | 59.59 | 11 |
| 5.2 Employability..... | 79.04 | 17 |
| 5.2.1 Ease of finding skilled employees | 77.56 | 20 |
| 5.2.2 Relevance of education system to the economy | 64.66 | 21 |
| 5.2.3 Skills matching with secondary education..... | 84.66 | 7 |
| 5.2.4 Skills matching with tertiary education | 89.30 | 9 |

| | | |
|--|--------------|----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 57.26 | 8 |
| 6.1 High-Level Skills | 58.96 | 11 |
| 6.1.1 Workforce with tertiary education | 55.83 | 18 |
| 6.1.2 Population with tertiary education | 33.96 | 30 |
| 6.1.3 Professionals..... | 77.75 | 2 |
| 6.1.4 Researchers..... | 85.04 | 4 |
| 6.1.5 Senior officials and managers | 35.63 | 38 |
| 6.1.6 Availability of scientists and engineers | 65.59 | 20 |
| 6.2 Talent Impact..... | 55.55 | 10 |
| 6.2.1 Innovation output..... | 86.12 | 3 |
| 6.2.2 High-value exports..... | 26.93 | 26 |
| 6.2.3 New product entrepreneurial activity | 44.83 | 45 |
| 6.2.4 New business density | 39.70 | 15 |
| 6.2.5 Scientific journal articles..... | 80.20 | 9 |

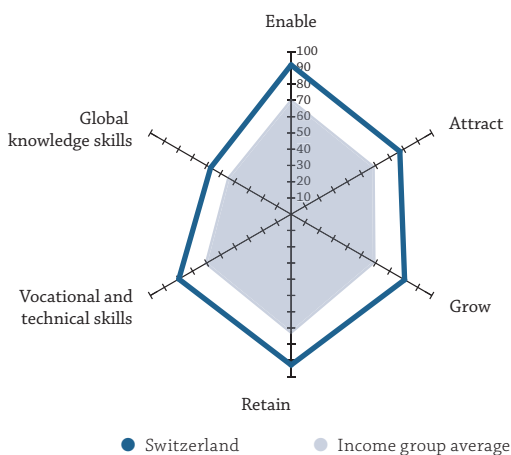
SWITZERLAND

Key Indicators

Rank (out of 119) **1**
 Income group **High income**
 Regional group **Europe**
 Population (millions) **8.29**

GDP per capita (PPP US\$) **60,535.20**
 GDP (US\$ billions) **664.74**
 GTCI score **79.90**
 GTCI score (income group average) **60.92**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|----------|
| 1 ENABLE | 91.85 | 2 |
| 1.1 Regulatory Landscape..... | 91.72 | 3 |
| 1.1.1 Government effectiveness..... | 93.83 | 2 |
| 1.1.2 Business-government relations..... | 86.53 | 11 |
| 1.1.3 Political stability..... | 95.63 | 3 |
| 1.1.4 Regulatory quality..... | 87.86 | 9 |
| 1.1.5 Corruption..... | 94.74 | 5 |
| 1.2 Market Landscape..... | 84.93 | 6 |
| 1.2.1 Competition intensity..... | 76.00 | 36 |
| 1.2.2 Ease of doing business..... | 79.59 | 29 |
| 1.2.3 Cluster development..... | 87.00 | 13 |
| 1.2.4 R&D expenditure..... | 69.16 | 8 |
| 1.2.5 ICT infrastructure..... | 97.82 | 4 |
| 1.2.6 Technology utilisation..... | 100.00 | 1 |
| 1.3 Business and Labour Landscape..... | 98.92 | 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..... | 98.37 | 2 |
| Management Practice | | |
| 1.3.5 Professional management..... | 95.13 | 8 |
| 1.3.6 Relationship of pay to productivity..... | 100.00 | 1 |
| 2 ATTRACT | 77.26 | 5 |
| 2.1 External Openness..... | 82.07 | 5 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 74.93 | 9 |
| 2.1.2 Prevalence of foreign ownership..... | 81.48 | 16 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 64.70 | 11 |
| 2.1.4 International students..... | 89.24 | 9 |
| 2.1.5 Brain gain..... | 100.00 | 1 |
| 2.2 Internal Openness..... | 72.45 | 13 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 73.56 | 11 |
| 2.2.2 Tolerance of immigrants..... | 77.46 | 30 |
| 2.2.3 Social mobility..... | 97.55 | 2 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 51.90 | 86 |
| 2.2.5 Gender earnings gap..... | 65.06 | 22 |
| 2.2.6 Leadership opportunities for women..... | 69.18 | 21 |

| | Score | Rank |
|---|--------------|----------|
| 3 GROW | 80.65 | 3 |
| 3.1 Formal Education..... | 61.64 | 8 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 60.19 | 10 |
| 3.1.2 Tertiary enrolment..... | 49.91 | 44 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 31.46 | 33 |
| 3.1.4 Reading, maths, and science..... | 78.69 | 12 |
| 3.1.5 University ranking..... | 87.96 | 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..... | 80.31 | 13 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 82.12 | 7 |
| 3.3.2 Personal rights..... | 88.17 | 16 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 79.70 | 33 |
| 3.3.4 Use of virtual professional networks..... | 46.67 | 20 |
| 3.3.5 Collaboration within organisations..... | 91.49 | 3 |
| 3.3.6 Collaboration across organisations..... | 93.69 | 7 |
| 4 RETAIN | 92.75 | 1 |
| 4.1 Sustainability..... | 96.55 | 1 |
| 4.1.1 Pension system..... | 94.90 | 3 |
| 4.1.2 Social protection..... | 94.77 | 5 |
| 4.1.3 Brain retention..... | 100.00 | 1 |
| 4.2 Lifestyle..... | 88.95 | 6 |
| 4.2.1 Environmental performance..... | 93.00 | 16 |
| 4.2.2 Personal safety..... | 97.37 | 3 |
| 4.2.3 Physician density..... | 65.54 | 8 |
| 4.2.4 Sanitation..... | 99.89 | 12 |
| 5 VOCATIONAL AND TECHNICAL SKILLS | 79.75 | 3 |
| 5.1 Mid-Level Skills..... | 62.87 | 8 |
| 5.1.1 Workforce with secondary education..... | 39.52 | 31 |
| 5.1.2 Population with secondary education..... | 68.47 | 17 |
| 5.1.3 Technicians and associate professionals..... | 86.10 | 5 |
| 5.1.4 Labour productivity per employee..... | 57.40 | 14 |
| 5.2 Employability..... | 96.62 | 1 |
| 5.2.1 Ease of finding skilled employees..... | 86.47 | 7 |
| 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 | 57.17 | 9 |
| 6.1 High-Level Skills..... | 56.72 | 12 |
| 6.1.1 Workforce with tertiary education..... | 57.12 | 17 |
| 6.1.2 Population with tertiary education..... | 29.67 | 46 |
| 6.1.3 Professionals..... | 72.83 | 4 |
| 6.1.4 Researchers..... | 54.21 | 17 |
| 6.1.5 Senior officials and managers..... | 55.00 | 17 |
| 6.1.6 Availability of scientists and engineers..... | 71.47 | 14 |
| 6.2 Talent Impact..... | 57.62 | 8 |
| 6.2.1 Innovation output..... | 100.00 | 1 |
| 6.2.2 High-value exports..... | 50.47 | 7 |
| 6.2.3 New product entrepreneurial activity..... | 44.43 | 48 |
| 6.2.4 New business density..... | 14.51 | 38 |
| 6.2.5 Scientific journal articles..... | 78.67 | 12 |

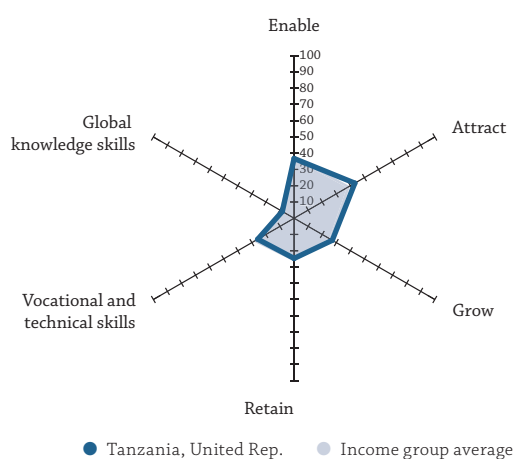
TANZANIA, UNITED REP.

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 107 |
| Income group | Low income |
| Regional group | Sub-Saharan Africa |
| Population (millions) | 53.47 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 2,667.29 |
| GDP (US\$ billions) | 44.90 |
| GTCI score | 27.66 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 36.75 | 105 |
| 1.1 Regulatory Landscape..... | 36.87 | 96 |
| 1.1.1 Government effectiveness | 26.74 | 97 |
| 1.1.2 Business-government relations | 44.59 | 91 |
| 1.1.3 Political stability | 52.91 | 83 |
| 1.1.4 Regulatory quality | 36.41 | 89 |
| 1.1.5 Corruption | 23.68 | 89 |
| 1.2 Market Landscape..... | 30.87 | 105 |
| 1.2.1 Competition intensity | 56.86 | 89 |
| 1.2.2 Ease of doing business | 39.35 | 104 |
| 1.2.3 Cluster development | 42.11 | 66 |
| 1.2.4 R&D expenditure | 12.15 | 57 |
| 1.2.5 ICT infrastructure | 1.91 | 117 |
| 1.2.6 Technology utilisation | 32.86 | 89 |
| 1.3 Business and Labour Landscape..... | 42.52 | 99 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 50.00 | 98 |
| 1.3.3 Active labour market policies..... | 55.89 | 72 |
| 1.3.4 Labour-employer cooperation | 33.88 | 98 |
| Management Practice | | |
| 1.3.5 Professional management..... | 32.09 | 77 |
| 1.3.6 Relationship of pay to productivity..... | 27.61 | 98 |
| 2 ATTRACT..... | 43.16 | 60 |
| 2.1 External Openness | 34.38 | 66 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 39.43 | 88 |
| 2.1.2 Prevalence of foreign ownership | 51.60 | 77 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.93 | 103 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain..... | 45.58 | 48 |
| 2.2 Internal Openness..... | 51.94 | 53 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 49.43 | 52 |
| 2.2.2 Tolerance of immigrants..... | 47.89 | 76 |
| 2.2.3 Social mobility..... | 39.24 | 73 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 81.93 | 5 |
| 2.2.6 Leadership opportunities for women..... | 41.22 | 62 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 27.14 | 100 |
| 3.1 Formal Education..... | 11.62 | 103 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 19.42 | 57 |
| 3.1.2 Tertiary enrolment..... | 2.52 | 111 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 16.88 | 74 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 7.67 | 74 |
| 3.2 Lifelong Learning..... | 27.10 | 105 |
| 3.2.1 Quality of management schools..... | 20.37 | 110 |
| 3.2.2 Prevalence of training in firms..... | 36.02 | 54 |
| 3.2.3 Employee development..... | 24.92 | 94 |
| 3.3 Access to Growth Opportunities | 42.70 | 84 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 30.17 | 91 |
| 3.3.2 Personal rights..... | 46.96 | 77 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 44.24 | 109 |
| 3.3.4 Use of virtual professional networks..... | n/a | n/a |
| 3.3.5 Collaboration within organisations | 21.78 | 105 |
| 3.3.6 Collaboration across organisations | 70.36 | 54 |
| 4 RETAIN..... | 24.72 | 113 |
| 4.1 Sustainability | 26.12 | 95 |
| 4.1.1 Pension system | 2.04 | 100 |
| 4.1.2 Social protection | 35.55 | 62 |
| 4.1.3 Brain retention | 40.77 | 64 |
| 4.2 Lifestyle | 23.33 | 116 |
| 4.2.1 Environmental performance..... | 39.64 | 103 |
| 4.2.2 Personal safety | 49.42 | 93 |
| 4.2.3 Physician density | 0.16 | 110 |
| 4.2.4 Sanitation | 4.09 | 116 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 25.79 | 112 |
| 5.1 Mid-Level Skills | 3.64 | 115 |
| 5.1.1 Workforce with secondary education | 2.70 | 104 |
| 5.1.2 Population with secondary education | 1.00 | 103 |
| 5.1.3 Technicians and associate professionals | 8.52 | 96 |
| 5.1.4 Labour productivity per employee..... | 2.34 | 94 |
| 5.2 Employability..... | 47.94 | 79 |
| 5.2.1 Ease of finding skilled employees | 45.87 | 62 |
| 5.2.2 Relevance of education system to the economy | 30.77 | 85 |
| 5.2.3 Skills matching with secondary education..... | 51.44 | 101 |
| 5.2.4 Skills matching with tertiary education | 63.68 | 87 |
| 6 GLOBAL KNOWLEDGE SKILLS | 8.36 | 111 |
| 6.1 High-Level Skills | 5.89 | 115 |
| 6.1.1 Workforce with tertiary education | 1.46 | 105 |
| 6.1.2 Population with tertiary education | 2.23 | 99 |
| 6.1.3 Professionals..... | 0.00 | 110 |
| 6.1.4 Researchers..... | 0.08 | 101 |
| 6.1.5 Senior officials and managers | 1.88 | 106 |
| 6.1.6 Availability of scientists and engineers | 29.71 | 87 |
| 6.2 Talent Impact..... | 10.82 | 100 |
| 6.2.1 Innovation output..... | 25.83 | 75 |
| 6.2.2 High-value exports..... | 1.51 | 99 |
| 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..... | 5.13 | 92 |

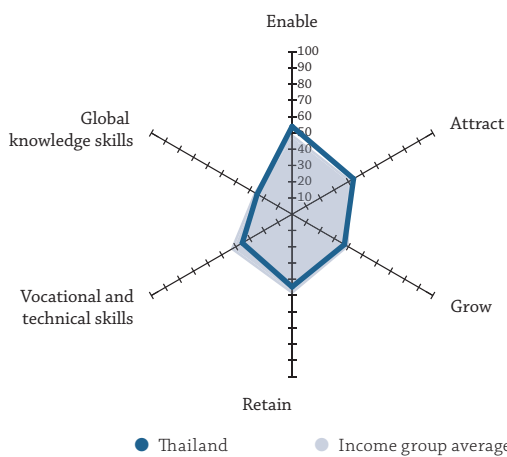
THAILAND

Key Indicators

| | |
|----------------------------|--|
| Rank (out of 119)..... | 70 |
| Income group..... | Upper middle income |
| Regional group..... | East, Southeastern Asia and Oceania |
| Population (millions)..... | 67.96 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 16,305.50 |
| GDP (US\$ billions)..... | 395.28 |
| GTCI score..... | 39.96 |
| GTCI score (income group average)..... | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 54.02 | 48 |
| 1.1 Regulatory Landscape..... | 45.79 | 73 |
| 1.1.1 Government effectiveness..... | 51.41 | 49 |
| 1.1.2 Business-government relations..... | 56.95 | 63 |
| 1.1.3 Political stability..... | 40.53 | 103 |
| 1.1.4 Regulatory quality..... | 52.43 | 57 |
| 1.1.5 Corruption..... | 27.63 | 79 |
| 1.2 Market Landscape..... | 51.78 | 49 |
| 1.2.1 Competition intensity..... | 73.71 | 40 |
| 1.2.2 Ease of doing business..... | 73.01 | 43 |
| 1.2.3 Cluster development..... | 44.58 | 59 |
| 1.2.4 R&D expenditure..... | 10.98 | 58 |
| 1.2.5 ICT infrastructure..... | 50.07 | 69 |
| 1.2.6 Technology utilisation..... | 58.30 | 40 |
| 1.3 Business and Labour Landscape..... | 64.50 | 36 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 55.67 | 69 |
| 1.3.2 Ease of redundancy..... | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 66.77 | 39 |
| 1.3.4 Labour-employer cooperation..... | 60.43 | 34 |
| Management Practice | | |
| 1.3.5 Professional management..... | 49.57 | 44 |
| 1.3.6 Relationship of pay to productivity..... | 54.55 | 49 |
| 2 ATTRACT..... | 43.66 | 55 |
| 2.1 External Openness..... | 39.06 | 51 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 58.75 | 38 |
| 2.1.2 Prevalence of foreign ownership..... | 64.20 | 46 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 12.56 | 51 |
| 2.1.4 International students..... | 10.82 | 61 |
| 2.1.5 Brain gain..... | 49.00 | 40 |
| 2.2 Internal Openness..... | 48.25 | 69 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 17.24 | 105 |
| 2.2.2 Tolerance of immigrants..... | 25.35 | 109 |
| 2.2.3 Social mobility..... | 37.60 | 78 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 73.47 | 56 |
| 2.2.5 Gender earnings gap..... | 73.49 | 11 |
| 2.2.6 Leadership opportunities for women..... | 62.37 | 28 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 37.19 | 69 |
| 3.1 Formal Education..... | 29.45 | 64 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 16.26 | 65 |
| 3.1.2 Tertiary enrolment..... | 42.50 | 53 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 14.07 | 82 |
| 3.1.4 Reading, maths, and science..... | 35.88 | 55 |
| 3.1.5 University ranking..... | 38.52 | 35 |
| 3.2 Lifelong Learning..... | 35.51 | 79 |
| 3.2.1 Quality of management schools..... | 40.48 | 69 |
| 3.2.2 Prevalence of training in firms..... | 19.26 | 79 |
| 3.2.3 Employee development..... | 46.80 | 49 |
| 3.3 Access to Growth Opportunities..... | 46.62 | 61 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 46.37 | 53 |
| 3.3.2 Personal rights..... | 28.97 | 97 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 90.61 | 12 |
| 3.3.4 Use of virtual professional networks..... | 2.97 | 97 |
| 3.3.5 Collaboration within organisations..... | 45.10 | 44 |
| 3.3.6 Collaboration across organisations..... | 65.72 | 75 |
| 4 RETAIN..... | 44.72 | 71 |
| 4.1 Sustainability..... | 38.27 | 62 |
| 4.1.1 Pension system..... | 21.43 | 74 |
| 4.1.2 Social protection..... | 42.58 | 45 |
| 4.1.3 Brain retention..... | 50.80 | 39 |
| 4.2 Lifestyle..... | 51.17 | 86 |
| 4.2.1 Environmental performance..... | 60.54 | 79 |
| 4.2.2 Personal safety..... | 46.17 | 97 |
| 4.2.3 Physician density..... | 5.93 | 92 |
| 4.2.4 Sanitation..... | 92.05 | 58 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 35.36 | 89 |
| 5.1 Mid-Level Skills..... | 18.09 | 91 |
| 5.1.1 Workforce with secondary education..... | 16.48 | 86 |
| 5.1.2 Population with secondary education..... | 19.12 | 86 |
| 5.1.3 Technicians and associate professionals..... | 19.73 | 83 |
| 5.1.4 Labour productivity per employee..... | 17.02 | 70 |
| 5.2 Employability..... | 52.64 | 67 |
| 5.2.1 Ease of finding skilled employees..... | 36.96 | 77 |
| 5.2.2 Relevance of education system to the economy..... | 41.59 | 58 |
| 5.2.3 Skills matching with secondary education..... | 58.16 | 79 |
| 5.2.4 Skills matching with tertiary education..... | 73.83 | 47 |
| 6 GLOBAL KNOWLEDGE SKILLS..... | 24.79 | 68 |
| 6.1 High-Level Skills..... | 22.66 | 79 |
| 6.1.1 Workforce with tertiary education..... | 18.03 | 85 |
| 6.1.2 Population with tertiary education..... | 27.79 | 48 |
| 6.1.3 Professionals..... | 12.72 | 86 |
| 6.1.4 Researchers..... | 10.46 | 51 |
| 6.1.5 Senior officials and managers..... | 23.13 | 60 |
| 6.1.6 Availability of scientists and engineers..... | 43.82 | 52 |
| 6.2 Talent Impact..... | 26.92 | 54 |
| 6.2.1 Innovation output..... | 40.95 | 42 |
| 6.2.2 High-value exports..... | 40.30 | 12 |
| 6.2.3 New product entrepreneurial activity..... | 33.83 | 63 |
| 6.2.4 New business density..... | 5.05 | 72 |
| 6.2.5 Scientific journal articles..... | 14.49 | 65 |

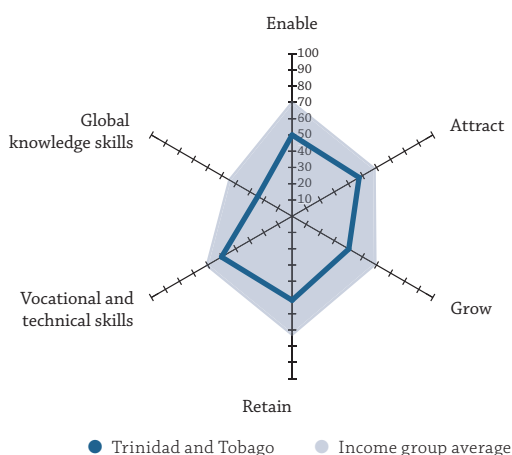
TRINIDAD AND TOBAGO

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 55 |
| Income group | High income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 1.36 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 32,596.50 |
| GDP (US\$ billions) | 27.81 |
| GTCI score | 44.02 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------|------|
| 1 ENABLE.....49.98 64 | | |
| 1.1 Regulatory Landscape..... | 50.99 | 55 |
| 1.1.1 Government effectiveness | 48.33 | 54 |
| 1.1.2 Business-government relations | 59.82 | 58 |
| 1.1.3 Political stability | 70.39 | 48 |
| 1.1.4 Regulatory quality | 48.79 | 64 |
| 1.1.5 Corruption | 27.63 | 79 |
| 1.2 Market Landscape..... | 41.96 | 76 |
| 1.2.1 Competition intensity | 71.14 | 54 |
| 1.2.2 Ease of doing business | 51.49 | 82 |
| 1.2.3 Cluster development | 35.91 | 78 |
| 1.2.4 R&D expenditure | 1.64 | 95 |
| 1.2.5 ICT infrastructure | 57.98 | 59 |
| 1.2.6 Technology utilisation | 33.57 | 86 |
| 1.3 Business and Labour Landscape..... | 57.00 | 61 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 80.00 | 44 |
| 1.3.3 Active labour market policies..... | 51.84 | 86 |
| 1.3.4 Labour-employer cooperation | 16.80 | 118 |
| Management Practice | | |
| 1.3.5 Professional management..... | 51.29 | 40 |
| 1.3.6 Relationship of pay to productivity..... | 42.09 | 67 |
| 2 ATTRACT.....47.63 43 | | |
| 2.1 External Openness | 38.74 | 55 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 45.95 | 71 |
| 2.1.2 Prevalence of foreign ownership | 56.30 | 63 |
| Attract People | | |
| 2.1.3 Migrant stock | 7.94 | 64 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain | 44.78 | 51 |
| 2.2 Internal Openness | 56.51 | 41 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 67.82 | 22 |
| 2.2.2 Tolerance of immigrants | 70.42 | 40 |
| 2.2.3 Social mobility..... | 52.32 | 43 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 45.78 | 76 |
| 2.2.6 Leadership opportunities for women | 46.24 | 54 |

| | Score | Rank |
|---|-------|------|
| 3 GROW.....40.29 60 | | |
| 3.1 Formal Education..... | 19.76 | 80 |
| 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 | 76 |
| 3.2 Lifelong Learning..... | 47.43 | 52 |
| 3.2.1 Quality of management schools..... | 62.70 | 30 |
| 3.2.2 Prevalence of training in firms | 32.45 | 58 |
| 3.2.3 Employee development | 47.14 | 48 |
| 3.3 Access to Growth Opportunities | 53.69 | 41 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 51.12 | 39 |
| 3.3.2 Personal rights..... | 74.86 | 37 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 75.45 | 48 |
| 3.3.4 Use of virtual professional networks..... | 47.22 | 17 |
| 3.3.5 Collaboration within organisations | 24.37 | 99 |
| 3.3.6 Collaboration across organisations | 49.09 | 115 |

| | | |
|--------------------------------------|-------|-----|
| 4 RETAIN.....51.69 60 | | |
| 4.1 Sustainability | 49.59 | 40 |
| 4.1.1 Pension system | 70.41 | 33 |
| 4.1.2 Social protection | 34.18 | 69 |
| 4.1.3 Brain retention | 44.19 | 54 |
| 4.2 Lifestyle | 53.79 | 81 |
| 4.2.1 Environmental performance..... | 69.50 | 57 |
| 4.2.2 Personal safety | 36.71 | 106 |
| 4.2.3 Physician density | 18.59 | 77 |
| 4.2.4 Sanitation | 90.34 | 61 |

| | | |
|--|-------|-----|
| 5 VOCATIONAL AND TECHNICAL SKILLS.....50.12 43 | | |
| 5.1 Mid-Level Skills | 38.84 | 56 |
| 5.1.1 Workforce with secondary education | n/a | n/a |
| 5.1.2 Population with secondary education | 17.97 | 91 |
| 5.1.3 Technicians and associate professionals | 58.30 | 28 |
| 5.1.4 Labour productivity per employee..... | 40.26 | 37 |
| 5.2 Employability..... | 61.40 | 42 |
| 5.2.1 Ease of finding skilled employees | 50.17 | 54 |
| 5.2.2 Relevance of education system to the economy | 57.45 | 34 |
| 5.2.3 Skills matching with secondary education..... | 65.67 | 50 |
| 5.2.4 Skills matching with tertiary education | 72.31 | 53 |

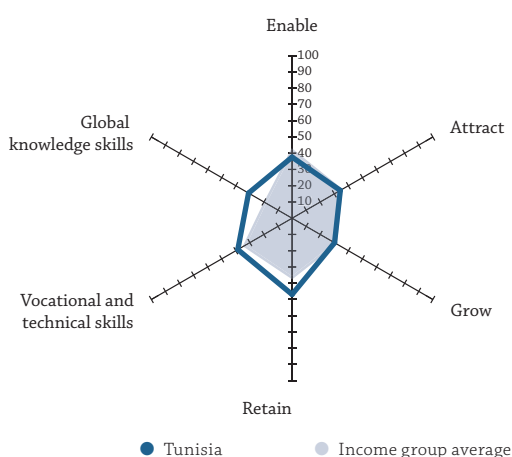
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|--|-------|-----|
| 6 GLOBAL KNOWLEDGE SKILLS.....24.41 69 | | |
| 6.1 High-Level Skills | 32.64 | 48 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 15.44 | 75 |
| 6.1.3 Professionals | 13.01 | 84 |
| 6.1.4 Researchers | n/a | n/a |
| 6.1.5 Senior officials and managers | 56.25 | 16 |
| 6.1.6 Availability of scientists and engineers | 45.88 | 51 |
| 6.2 Talent Impact..... | 16.17 | 86 |
| 6.2.1 Innovation output | 21.79 | 84 |
| 6.2.2 High-value exports..... | n/a | n/a |
| 6.2.3 New product entrepreneurial activity | 20.94 | 78 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 5.79 | 88 |

TUNISIA

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 83 |
| Income group | Lower middle income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 11.11 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 37.59 | 103 |
| 1.1 Regulatory Landscape..... | 40.02 | 89 |
| 1.1.1 Government effectiveness | 39.59 | 76 |
| 1.1.2 Business-government relations | 46.58 | 85 |
| 1.1.3 Political stability | 42.72 | 97 |
| 1.1.4 Regulatory quality | 35.68 | 90 |
| 1.1.5 Corruption | 35.53 | 60 |
| 1.2 Market Landscape | 39.22 | 88 |
| 1.2.1 Competition intensity | 60.57 | 78 |
| 1.2.2 Ease of doing business | 58.76 | 70 |
| 1.2.3 Cluster development | 26.32 | 95 |
| 1.2.4 R&D expenditure | 14.72 | 51 |
| 1.2.5 ICT infrastructure | 45.29 | 78 |
| 1.2.6 Technology utilisation | 29.68 | 95 |
| 1.3 Business and Labour Landscape..... | 33.52 | 114 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 61.00 | 67 |
| 1.3.2 Ease of redundancy | 20.00 | 117 |
| 1.3.3 Cluster labour market policies..... | 50.12 | 90 |
| 1.3.4 Labour-employer cooperation | 29.27 | 110 |
| Management Practice | | |
| 1.3.5 Professional management..... | 28.94 | 83 |
| 1.3.6 Relationship of pay to productivity..... | 11.78 | 117 |
| 2 ATTRACT..... | 34.24 | 96 |
| 2.1 External Openness | 24.91 | 101 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 45.69 | 72 |
| 2.1.2 Prevalence of foreign ownership | 48.15 | 86 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.95 | 102 |
| 2.1.4 International students..... | 10.29 | 64 |
| 2.1.5 Brain gain..... | 19.48 | 106 |
| 2.2 Internal Openness | 43.56 | 85 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 25.29 | 91 |
| 2.2.2 Tolerance of immigrants..... | 56.34 | 59 |
| 2.2.3 Social mobility..... | 39.78 | 71 |
| Gender Equality | | |
| 2.2.4 Female graduates | 92.41 | 12 |
| 2.2.5 Gender earnings gap | 12.05 | 108 |
| 2.2.6 Leadership opportunities for women..... | 35.48 | 71 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 11,397.20 |
| GDP (US\$ billions) | 43.02 |
| GTCI score..... | 36.40 |
| GTCI score (income group average) | 32.92 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 30.18 | 94 |
| 3.1 Formal Education..... | 18.62 | 84 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 9.84 | 78 |
| 3.1.2 Tertiary enrolment..... | 29.90 | 74 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 38.11 | 18 |
| 3.1.4 Reading, maths, and science | 15.24 | 65 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 32.36 | 93 |
| 3.2.1 Quality of management schools..... | 40.21 | 70 |
| 3.2.2 Prevalence of training in firms..... | 33.64 | 55 |
| 3.2.3 Employee development..... | 23.23 | 100 |
| 3.3 Access to Growth Opportunities | 39.57 | 97 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 21.51 | 111 |
| 3.3.2 Personal rights..... | 67.00 | 47 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 69.39 | 61 |
| 3.3.4 Use of virtual professional networks..... | 15.47 | 61 |
| 3.3.5 Collaboration within organisations | 14.30 | 114 |
| 3.3.6 Collaboration across organisations | 49.73 | 114 |
| 4 RETAIN..... | 46.89 | 66 |
| 4.1 Sustainability | 31.90 | 73 |
| 4.1.1 Pension system | 47.96 | 50 |
| 4.1.2 Social protection | 22.46 | 89 |
| 4.1.3 Brain retention | 25.28 | 95 |
| 4.2 Lifestyle | 61.88 | 62 |
| 4.2.1 Environmental performance..... | 74.99 | 51 |
| 4.2.2 Personal safety | 55.96 | 79 |
| 4.2.3 Physician density | 26.12 | 65 |
| 4.2.4 Sanitation | 90.45 | 60 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 38.57 | 80 |
| 5.1 Mid-Level Skills | 31.62 | 70 |
| 5.1.1 Workforce with secondary education | 32.78 | 54 |
| 5.1.2 Population with secondary education | 39.09 | 50 |
| 5.1.3 Technicians and associate professionals | 33.18 | 64 |
| 5.1.4 Labour productivity per employee..... | 21.42 | 64 |
| 5.2 Employability..... | 45.53 | 90 |
| 5.2.1 Ease of finding skilled employees | 43.56 | 65 |
| 5.2.2 Relevance of education system to the economy | 26.44 | 95 |
| 5.2.3 Skills matching with secondary education..... | 52.80 | 99 |
| 5.2.4 Skills matching with tertiary education | 59.32 | 105 |
| 6 GLOBAL KNOWLEDGE SKILLS | 30.93 | 54 |
| 6.1 High-Level Skills | 28.92 | 61 |
| 6.1.1 Workforce with tertiary education | 27.49 | 68 |
| 6.1.2 Population with tertiary education | 20.07 | 67 |
| 6.1.3 Professionals..... | 17.05 | 78 |
| 6.1.4 Researchers..... | 21.53 | 41 |
| 6.1.5 Senior officials and managers | 40.00 | 31 |
| 6.1.6 Availability of scientists and engineers | 47.35 | 46 |
| 6.2 Talent Impact..... | 32.95 | 51 |
| 6.2.1 Innovation output..... | 27.59 | 70 |
| 6.2.2 High-value exports..... | 11.86 | 60 |
| 6.2.3 New product entrepreneurial activity | 55.62 | 25 |
| 6.2.4 New business density | 8.65 | 55 |
| 6.2.5 Scientific journal articles..... | 61.02 | 22 |

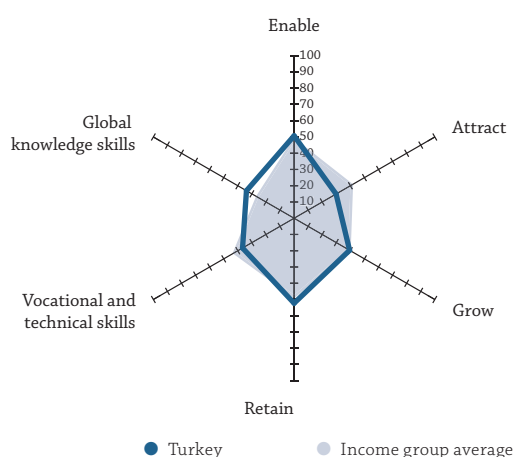
TURKEY

Key Indicators

| | |
|-----------------------------|--------------------------------------|
| Rank (out of 119)..... | 68 |
| Income group | Upper middle income |
| Regional group | North Africa and Western Asia |
| Population (millions) | 78.67 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 19,618.20 |
| GDP (US\$ billions) | 718.22 |
| GTCI score | 40.45 |
| GTCI score (income group average) | 40.93 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 50.71 | 61 |
| 1.1 Regulatory Landscape..... | 45.96 | 70 |
| 1.1.1 Government effectiveness | 48.07 | 55 |
| 1.1.2 Business-government relations | 60.26 | 54 |
| 1.1.3 Political stability | 32.77 | 111 |
| 1.1.4 Regulatory quality | 53.16 | 56 |
| 1.1.5 Corruption | 35.53 | 60 |
| 1.2 Market Landscape | 55.61 | 39 |
| 1.2.1 Competition intensity | 90.00 | 10 |
| 1.2.2 Ease of doing business | 63.05 | 63 |
| 1.2.3 Cluster development | 46.13 | 54 |
| 1.2.4 R&D expenditure | 23.36 | 34 |
| 1.2.5 ICT infrastructure | 57.03 | 61 |
| 1.2.6 Technology utilisation | 54.06 | 45 |
| 1.3 Business and Labour Landscape..... | 50.56 | 79 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 90.00 | 34 |
| 1.3.3 Active labour market policies..... | 56.89 | 70 |
| 1.3.4 Labour-employer cooperation | 33.06 | 102 |
| Management Practice | | |
| 1.3.5 Professional management..... | 34.10 | 72 |
| 1.3.6 Relationship of pay to productivity..... | 33.67 | 85 |
| 2 ATTRACT..... | 29.82 | 108 |
| 2.1 External Openness | 27.73 | 88 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 51.70 | 59 |
| 2.1.2 Prevalence of foreign ownership | 47.65 | 88 |
| Attract People | | |
| 2.1.3 Migrant stock | 8.16 | 63 |
| 2.1.4 International students..... | 4.44 | 74 |
| 2.1.5 Brain gain | 26.71 | 91 |
| 2.2 Internal Openness | 31.91 | 113 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 11.49 | 112 |
| 2.2.2 Tolerance of immigrants..... | 49.30 | 75 |
| 2.2.3 Social mobility..... | 34.33 | 88 |
| Gender Equality | | |
| 2.2.4 Female graduates | 54.50 | 82 |
| 2.2.5 Gender earnings gap | 32.53 | 99 |
| 2.2.6 Leadership opportunities for women..... | 9.32 | 107 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 39.44 | 63 |
| 3.1 Formal Education..... | 44.54 | 35 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 34.54 | 31 |
| 3.1.2 Tertiary enrolment..... | 75.63 | 7 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 38.36 | 17 |
| 3.1.4 Reading, maths, and science | 40.33 | 48 |
| 3.1.5 University ranking | 33.83 | 38 |
| 3.2 Lifelong Learning..... | 29.45 | 100 |
| 3.2.1 Quality of management schools..... | 29.10 | 98 |
| 3.2.2 Prevalence of training in firms..... | 32.98 | 56 |
| 3.2.3 Employee development..... | 26.26 | 89 |
| 3.3 Access to Growth Opportunities | 44.33 | 75 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 32.68 | 87 |
| 3.3.2 Personal rights..... | 50.58 | 72 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 75.76 | 45 |
| 3.3.4 Use of virtual professional networks..... | 18.81 | 52 |
| 3.3.5 Collaboration within organisations | 26.78 | 92 |
| 3.3.6 Collaboration across organisations | 61.38 | 88 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 52.28 | 59 |
| 4.1 Sustainability | 47.05 | 45 |
| 4.1.1 Pension system | 58.16 | 43 |
| 4.1.2 Social protection | 47.68 | 39 |
| 4.1.3 Brain retention | 35.31 | 78 |
| 4.2 Lifestyle | 57.51 | 69 |
| 4.2.1 Environmental performance..... | 57.07 | 84 |
| 4.2.2 Personal safety | 51.03 | 91 |
| 4.2.3 Physician density | 27.72 | 63 |
| 4.2.4 Sanitation | 94.20 | 50 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 36.62 | 85 |
| 5.1 Mid-Level Skills | 27.32 | 76 |
| 5.1.1 Workforce with secondary education | 17.40 | 84 |
| 5.1.2 Population with secondary education | 25.82 | 71 |
| 5.1.3 Technicians and associate professionals | 24.22 | 78 |
| 5.1.4 Labour productivity per employee..... | 41.84 | 34 |
| 5.2 Employability..... | 45.93 | 86 |
| 5.2.1 Ease of finding skilled employees | 36.96 | 77 |
| 5.2.2 Relevance of education system to the economy | 28.37 | 92 |
| 5.2.3 Skills matching with secondary education..... | 56.28 | 89 |
| 5.2.4 Skills matching with tertiary education | 62.11 | 95 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 33.84 | 47 |
| 6.1 High-Level Skills | 29.19 | 59 |
| 6.1.1 Workforce with tertiary education | 31.91 | 58 |
| 6.1.2 Population with tertiary education | 23.84 | 55 |
| 6.1.3 Professionals..... | 26.88 | 63 |
| 6.1.4 Researchers..... | 13.88 | 46 |
| 6.1.5 Senior officials and managers | 31.25 | 41 |
| 6.1.6 Availability of scientists and engineers | 47.35 | 46 |
| 6.2 Talent Impact..... | 38.49 | 34 |
| 6.2.1 Innovation output..... | 46.75 | 35 |
| 6.2.2 High-value exports..... | 4.14 | 89 |
| 6.2.3 New product entrepreneurial activity | 97.68 | 2 |
| 6.2.4 New business density | 6.38 | 63 |
| 6.2.5 Scientific journal articles..... | 37.47 | 44 |

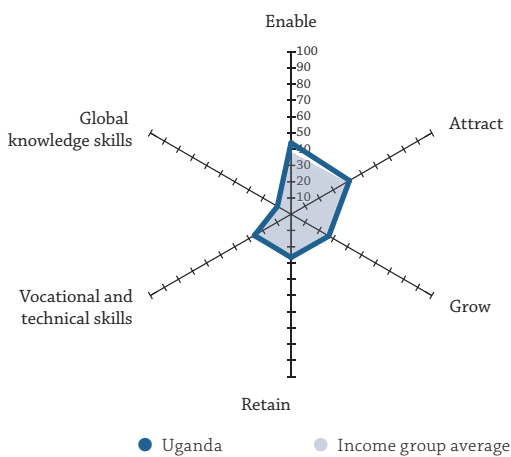
UGANDA

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 103 |
| Income group | Low income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 39.03 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 1,825.31 |
| GDP (US\$ billions) | 26.37 |
| GTCI score..... | 29.09 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 43.94 | 86 |
| 1.1 Regulatory Landscape..... | 37.19 | 94 |
| 1.1.1 Government effectiveness | 29.82 | 92 |
| 1.1.2 Business-government relations | 59.38 | 60 |
| 1.1.3 Political stability | 42.96 | 96 |
| 1.1.4 Regulatory quality | 39.32 | 82 |
| 1.1.5 Corruption | 14.47 | 115 |
| 1.2 Market Landscape..... | 33.73 | 100 |
| 1.2.1 Competition intensity | 73.71 | 40 |
| 1.2.2 Ease of doing business | 45.49 | 94 |
| 1.2.3 Cluster development | 35.60 | 80 |
| 1.2.4 R&D expenditure | 10.98 | 58 |
| 1.2.5 ICT infrastructure | 5.87 | 114 |
| 1.2.6 Technology utilisation | 30.74 | 93 |
| 1.3 Business and Labour Landscape..... | 60.91 | 46 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 100.00 | 1 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Cluster labour market policies..... | 47.34 | 100 |
| 1.3.4 Labour-employer cooperation | 55.28 | 45 |
| Management Practice | | |
| 1.3.5 Professional management..... | 33.52 | 74 |
| 1.3.6 Relationship of pay to productivity..... | 29.29 | 94 |
| 2 ATTRACT..... | 41.45 | 66 |
| 2.1 External Openness | 43.62 | 42 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 47.00 | 68 |
| 2.1.2 Prevalence of foreign ownership | 76.79 | 23 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 4.08 | 80 |
| 2.1.4 International students..... | 55.90 | 15 |
| 2.1.5 Brain gain..... | 34.34 | 78 |
| 2.2 Internal Openness..... | 39.28 | 99 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 14.94 | 109 |
| 2.2.2 Tolerance of immigrants..... | 54.93 | 62 |
| 2.2.3 Social mobility..... | 43.60 | 61 |
| Gender Equality | | |
| 2.2.4 Female graduates | n/a | n/a |
| 2.2.5 Gender earnings gap | 27.71 | 102 |
| 2.2.6 Leadership opportunities for women..... | 55.20 | 36 |

| | Score | Rank |
|--|--------------|------------|
| 3 GROW..... | 26.81 | 104 |
| 3.1 Formal Education..... | 5.70 | 114 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 6.60 | 90 |
| 3.1.2 Tertiary enrolment..... | 3.25 | 109 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 4.86 | 100 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 8.07 | 73 |
| 3.2 Lifelong Learning..... | 34.55 | 85 |
| 3.2.1 Quality of management schools..... | 33.07 | 88 |
| 3.2.2 Prevalence of training in firms..... | 41.29 | 45 |
| 3.2.3 Employee development..... | 29.29 | 83 |
| 3.3 Access to Growth Opportunities | 40.19 | 95 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 41.06 | 68 |
| 3.3.2 Personal rights..... | 35.99 | 88 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 51.82 | 97 |
| 3.3.4 Use of virtual professional networks..... | 2.52 | 98 |
| 3.3.5 Collaboration within organisations | 43.35 | 46 |
| 3.3.6 Collaboration across organisations | 66.42 | 74 |
| 4 RETAIN..... | 26.61 | 110 |
| 4.1 Sustainability | 20.70 | 110 |
| 4.1.1 Pension system | 8.16 | 86 |
| 4.1.2 Social protection | 21.12 | 93 |
| 4.1.3 Brain retention | 32.80 | 84 |
| 4.2 Lifestyle | 32.52 | 105 |
| 4.2.1 Environmental performance..... | 38.19 | 104 |
| 4.2.2 Personal safety | 51.30 | 90 |
| 4.2.3 Physician density | n/a | n/a |
| 4.2.4 Sanitation | 8.07 | 115 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 26.02 | 111 |
| 5.1 Mid-Level Skills | 2.48 | 117 |
| 5.1.1 Workforce with secondary education | 1.08 | 106 |
| 5.1.2 Population with secondary education | 2.28 | 102 |
| 5.1.3 Technicians and associate professionals | 5.38 | 105 |
| 5.1.4 Labour productivity per employee..... | 1.18 | 97 |
| 5.2 Employability..... | 49.55 | 77 |
| 5.2.1 Ease of finding skilled employees | 51.16 | 53 |
| 5.2.2 Relevance of education system to the economy | 32.69 | 79 |
| 5.2.3 Skills matching with secondary education..... | 49.15 | 106 |
| 5.2.4 Skills matching with tertiary education | 65.21 | 80 |
| 6 GLOBAL KNOWLEDGE SKILLS | 9.72 | 108 |
| 6.1 High-Level Skills | 10.73 | 108 |
| 6.1.1 Workforce with tertiary education | 7.36 | 96 |
| 6.1.2 Population with tertiary education | 12.69 | 79 |
| 6.1.3 Professionals..... | 7.23 | 98 |
| 6.1.4 Researchers..... | 0.31 | 95 |
| 6.1.5 Senior officials and managers | 0.00 | 110 |
| 6.1.6 Availability of scientists and engineers | 36.76 | 69 |
| 6.2 Talent Impact..... | 8.71 | 107 |
| 6.2.1 Innovation output..... | 14.59 | 102 |
| 6.2.2 High-value exports..... | 3.39 | 92 |
| 6.2.3 New product entrepreneurial activity | 6.54 | 86 |
| 6.2.4 New business density | 6.62 | 62 |
| 6.2.5 Scientific journal articles..... | 12.41 | 69 |

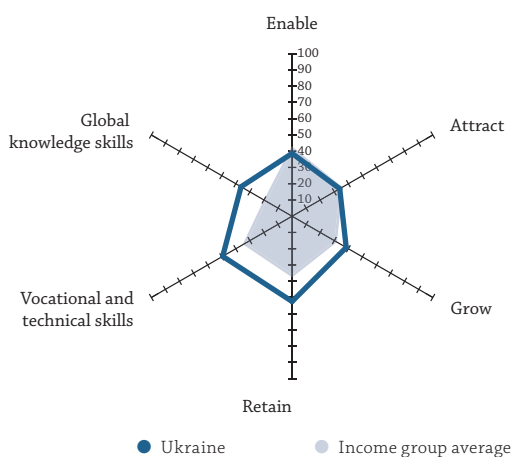
UKRAINE

Key Indicators

| | |
|-----------------------------|----------------------------|
| Rank (out of 119)..... | 61 |
| Income group | Lower middle income |
| Regional group | Europe |
| Population (millions) | 45.20 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 7,915.87 |
| GDP (US\$ billions) | 90.62 |
| GTCI score | 41.50 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|---|--------------|-----------|
| 1 ENABLE | 38.67 | 99 |
| 1.1 Regulatory Landscape | 26.57 | 115 |
| 1.1.1 Government effectiveness | 29.05 | 94 |
| 1.1.2 Business-government relations | 35.98 | 104 |
| 1.1.3 Political stability | 16.99 | 117 |
| 1.1.4 Regulatory quality | 31.07 | 102 |
| 1.1.5 Corruption | 19.74 | 101 |
| 1.2 Market Landscape | 39.69 | 87 |
| 1.2.1 Competition intensity | 53.71 | 96 |
| 1.2.2 Ease of doing business | 56.92 | 72 |
| 1.2.3 Cluster development | 19.20 | 111 |
| 1.2.4 R&D expenditure | 15.19 | 50 |
| 1.2.5 ICT infrastructure | 52.11 | 65 |
| 1.2.6 Technology utilisation | 40.99 | 68 |
| 1.3 Business and Labour Landscape | 49.77 | 80 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 50.00 | 98 |
| 1.3.3 Active labour market policies | 68.03 | 36 |
| 1.3.4 Labour-employer cooperation | 44.72 | 79 |
| Management Practice | | |
| 1.3.5 Professional management | 20.63 | 101 |
| 1.3.6 Relationship of pay to productivity | 59.60 | 39 |
| 2 ATTRACT | 33.84 | 98 |
| 2.1 External Openness | 26.35 | 96 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer | 30.55 | 104 |
| 2.1.2 Prevalence of foreign ownership | 26.42 | 112 |
| Attract People | | |
| 2.1.3 Migrant stock | 23.65 | 36 |
| 2.1.4 International students | 16.77 | 51 |
| 2.1.5 Brain gain | 34.34 | 78 |
| 2.2 Internal Openness | 41.33 | 93 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 34.48 | 75 |
| 2.2.2 Tolerance of immigrants | 29.58 | 103 |
| 2.2.3 Social mobility | 20.71 | 110 |
| Gender Equality | | |
| 2.2.4 Female graduates | 66.60 | 72 |
| 2.2.5 Gender earnings gap | 51.81 | 55 |
| 2.2.6 Leadership opportunities for women | 44.80 | 57 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW | 38.45 | 66 |
| 3.1 Formal Education | 40.09 | 39 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 13.06 | 73 |
| 3.1.2 Tertiary enrolment | 72.09 | 11 |
| Quality | | |
| 3.1.3 Tertiary education expenditure | 45.78 | 12 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 29.43 | 46 |
| 3.2 Lifelong Learning | 30.12 | 99 |
| 3.2.1 Quality of management schools | 34.39 | 84 |
| 3.2.2 Prevalence of training in firms | 25.33 | 68 |
| 3.2.3 Employee development | 30.64 | 82 |
| 3.3 Access to Growth Opportunities | 45.15 | 67 |
| Empowerment | | |
| 3.3.1 Delegation of authority | 29.89 | 92 |
| 3.3.2 Personal rights | 56.07 | 66 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks | 63.94 | 79 |
| 3.3.4 Use of virtual professional networks | 7.74 | 82 |
| 3.3.5 Collaboration within organisations | 41.32 | 52 |
| 3.3.6 Collaboration across organisations | 71.93 | 46 |

| | | |
|---------------------------------------|--------------|-----------|
| 4 RETAIN | 52.44 | 58 |
| 4.1 Sustainability | 37.17 | 65 |
| 4.1.1 Pension system | 64.29 | 39 |
| 4.1.2 Social protection | 28.09 | 79 |
| 4.1.3 Brain retention | 19.13 | 109 |
| 4.2 Lifestyle | 67.71 | 51 |
| 4.2.1 Environmental performance | 79.49 | 43 |
| 4.2.2 Personal safety | 48.24 | 94 |
| 4.2.3 Physician density | 47.76 | 32 |
| 4.2.4 Sanitation | 95.34 | 47 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS | 49.30 | 44 |
| 5.1 Mid-Level Skills | 34.65 | 63 |
| 5.1.1 Workforce with secondary education | 39.53 | 30 |
| 5.1.2 Population with secondary education | n/a | n/a |
| 5.1.3 Technicians and associate professionals | 52.91 | 35 |
| 5.1.4 Labour productivity per employee | 11.52 | 79 |
| 5.2 Employability | 63.95 | 36 |
| 5.2.1 Ease of finding skilled employees | 63.04 | 34 |
| 5.2.2 Relevance of education system to the economy | 49.04 | 49 |
| 5.2.3 Skills matching with secondary education | 67.83 | 42 |
| 5.2.4 Skills matching with tertiary education | 75.88 | 40 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 36.27 | 42 |
| 6.1 High-Level Skills | 48.53 | 24 |
| 6.1.1 Workforce with tertiary education | 74.23 | 4 |
| 6.1.2 Population with tertiary education | n/a | n/a |
| 6.1.3 Professionals | 48.55 | 28 |
| 6.1.4 Researchers | 12.06 | 49 |
| 6.1.5 Senior officials and managers | 48.13 | 23 |
| 6.1.6 Availability of scientists and engineers | 59.71 | 28 |
| 6.2 Talent Impact | 24.01 | 64 |
| 6.2.1 Innovation output | 44.46 | 39 |
| 6.2.2 High-value exports | 13.75 | 52 |
| 6.2.3 New product entrepreneurial activity | n/a | n/a |
| 6.2.4 New business density | 5.17 | 71 |
| 6.2.5 Scientific journal articles | 32.67 | 47 |

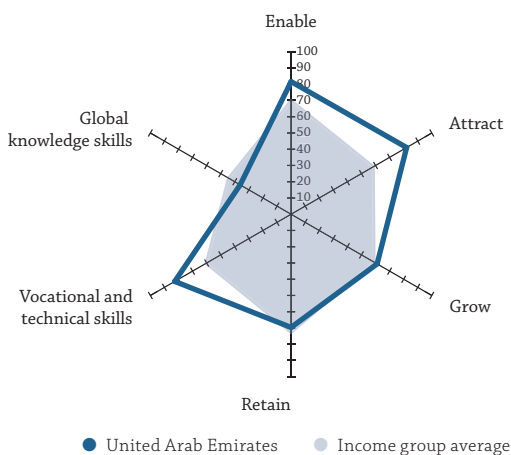
UNITED ARAB EMIRATES

Key Indicators

| | |
|----------------------------|--------------------------------------|
| Rank (out of 119)..... | 17 |
| Income group..... | High income |
| Regional group..... | North Africa and Western Asia |
| Population (millions)..... | 9.16 |

| | |
|--|------------------|
| GDP per capita (PPP US\$)..... | 70,238.00 |
| GDP (US\$ billions)..... | 370.29 |
| GTCI score..... | 68.88 |
| GTCI score (income group average)..... | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------|-----------|
| 1 ENABLE.....81.59 | | 11 |
| 1.1 Regulatory Landscape..... | 80.52 | 16 |
| 1.1.1 Government effectiveness..... | 81.75 | 15 |
| 1.1.2 Business-government relations..... | 97.57 | 2 |
| 1.1.3 Political stability..... | 82.28 | 27 |
| 1.1.4 Regulatory quality..... | 72.57 | 27 |
| 1.1.5 Corruption..... | 68.42 | 23 |
| 1.2 Market Landscape..... | 75.12 | 16 |
| 1.2.1 Competition intensity..... | 90.57 | 7 |
| 1.2.2 Ease of doing business..... | 81.13 | 24 |
| 1.2.3 Cluster development..... | 95.67 | 2 |
| 1.2.4 R&D expenditure..... | 16.12 | 47 |
| 1.2.5 ICT infrastructure..... | 76.40 | 30 |
| 1.2.6 Technology utilisation..... | 90.81 | 7 |
| 1.3 Business and Labour Landscape..... | 89.14 | 4 |
| 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..... | 81.59 | 14 |
| 1.3.4 Labour-employer cooperation..... | 84.82 | 10 |
| Management Practice | | |
| 1.3.5 Professional management..... | 78.51 | 18 |
| 1.3.6 Relationship of pay to productivity..... | 89.90 | 4 |
| 2 ATTRACT.....82.08 | | 3 |
| 2.1 External Openness..... | 93.19 | 2 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 83.29 | 3 |
| 2.1.2 Prevalence of foreign ownership..... | 86.67 | 9 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 100.00 | 1 |
| 2.1.4 International students..... | 100.00 | 1 |
| 2.1.5 Brain gain..... | 95.98 | 2 |
| 2.2 Internal Openness..... | 70.96 | 16 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 70.11 | 17 |
| 2.2.2 Tolerance of immigrants..... | 92.96 | 5 |
| 2.2.3 Social mobility..... | 89.65 | 9 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 69.22 | 69 |
| 2.2.5 Gender earnings gap..... | 15.66 | 105 |
| 2.2.6 Leadership opportunities for women..... | 88.17 | 7 |

| | Score | Rank |
|---|--------|-----------|
| 3 GROW.....61.13 | | 21 |
| 3.1 Formal Education..... | 38.39 | 42 |
| 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..... | 44.01 | 46 |
| 3.1.5 University ranking..... | 32.76 | 39 |
| 3.2 Lifelong Learning..... | 79.06 | 13 |
| 3.2.1 Quality of management schools..... | 76.98 | 15 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 81.14 | 15 |
| 3.3 Access to Growth Opportunities..... | 65.95 | 23 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 68.72 | 22 |
| 3.3.2 Personal rights..... | 22.34 | 105 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 98.48 | 4 |
| 3.3.4 Use of virtual professional networks..... | 44.56 | 21 |
| 3.3.5 Collaboration within organisations..... | 69.24 | 21 |
| 3.3.6 Collaboration across organisations..... | 92.34 | 9 |
| 4 RETAIN.....69.64 | | 28 |
| 4.1 Sustainability..... | 74.84 | 16 |
| 4.1.1 Pension system..... | n/a | n/a |
| 4.1.2 Social protection..... | 60.38 | 28 |
| 4.1.3 Brain retention..... | 89.29 | 3 |
| 4.2 Lifestyle..... | 64.44 | 58 |
| 4.2.1 Environmental performance..... | 60.19 | 80 |
| 4.2.2 Personal safety..... | 75.62 | 41 |
| 4.2.3 Physician density..... | 24.68 | 68 |
| 4.2.4 Sanitation..... | 97.27 | 35 |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....82.67 | | 1 |
| 5.1 Mid-Level Skills..... | 82.06 | 1 |
| 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..... | 64.13 | 21 |
| 5.1.4 Labour productivity per employee..... | 100.00 | 1 |
| 5.2 Employability..... | 83.28 | 12 |
| 5.2.1 Ease of finding skilled employees..... | 85.81 | 8 |
| 5.2.2 Relevance of education system to the economy..... | 79.81 | 10 |
| 5.2.3 Skills matching with secondary education..... | 80.28 | 15 |
| 5.2.4 Skills matching with tertiary education..... | 87.22 | 17 |
| 6 GLOBAL KNOWLEDGE SKILLS.....36.18 | | 43 |
| 6.1 High-Level Skills..... | 47.35 | 26 |
| 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..... | 38.44 | 46 |
| 6.1.4 Researchers..... | 24.15 | 37 |
| 6.1.5 Senior officials and managers..... | 45.63 | 25 |
| 6.1.6 Availability of scientists and engineers..... | 81.18 | 5 |
| 6.2 Talent Impact..... | 25.00 | 58 |
| 6.2.1 Innovation output..... | 34.45 | 55 |
| 6.2.2 High-value exports..... | 16.01 | 48 |
| 6.2.3 New product entrepreneurial activity..... | 62.02 | 13 |
| 6.2.4 New business density..... | 7.84 | 58 |
| 6.2.5 Scientific journal articles..... | 4.70 | 97 |

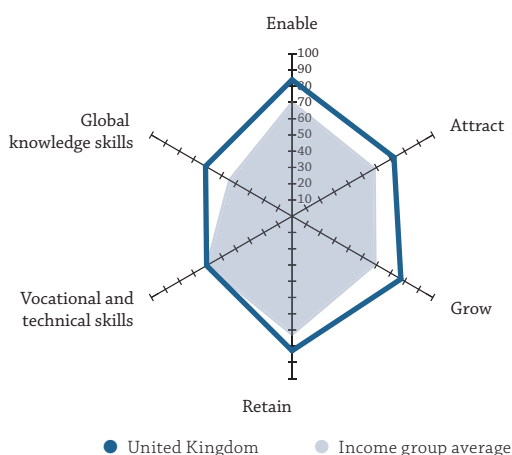
UNITED KINGDOM

Key Indicators

| | |
|-----------------------------|--------------------|
| Rank (out of 119)..... | 8 |
| Income group | High income |
| Regional group | Europe |
| Population (millions) | 65.14 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 41,324.60 |
| GDP (US\$ billions) | 2,848.76 |
| GTCI score | 73.11 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|----------|
| 1 ENABLE | 83.95 | 6 |
| 1.1 Regulatory Landscape..... | 82.95 | 12 |
| 1.1.1 Government effectiveness | 86.89 | 11 |
| 1.1.2 Business-government relations | 71.96 | 24 |
| 1.1.3 Political stability | 77.43 | 39 |
| 1.1.4 Regulatory quality | 90.29 | 3 |
| 1.1.5 Corruption | 88.16 | 10 |
| 1.2 Market Landscape..... | 83.87 | 7 |
| 1.2.1 Competition intensity | 93.14 | 2 |
| 1.2.2 Ease of doing business | 92.04 | 6 |
| 1.2.3 Cluster development | 93.19 | 5 |
| 1.2.4 R&D expenditure | 39.49 | 21 |
| 1.2.5 ICT infrastructure | 96.32 | 5 |
| 1.2.6 Technology utilisation | 89.05 | 9 |
| 1.3 Business and Labour Landscape..... | 85.05 | 10 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 89.00 | 25 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 77.74 | 21 |
| 1.3.4 Labour-employer cooperation | 78.32 | 14 |
| Management Practice | | |
| 1.3.5 Professional management..... | 92.84 | 9 |
| 1.3.6 Relationship of pay to productivity..... | 72.39 | 17 |
| 2 ATTRACT | 72.38 | 8 |
| 2.1 External Openness | 78.42 | 6 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 73.11 | 12 |
| 2.1.2 Prevalence of foreign ownership | 100.00 | 1 |
| Attract People | | |
| 2.1.3 Migrant stock | 28.97 | 27 |
| 2.1.4 International students..... | 95.04 | 7 |
| 2.1.5 Brain gain..... | 94.98 | 3 |
| 2.2 Internal Openness..... | 66.34 | 18 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 50.57 | 50 |
| 2.2.2 Tolerance of immigrants..... | 91.55 | 8 |
| 2.2.3 Social mobility..... | 73.57 | 22 |
| Gender Equality | | |
| 2.2.4 Female graduates | 75.40 | 54 |
| 2.2.5 Gender earnings gap | 44.58 | 77 |
| 2.2.6 Leadership opportunities for women..... | 62.37 | 28 |

| | Score | Rank |
|---|--------------|----------|
| 3 GROW | 77.30 | 7 |
| 3.1 Formal Education..... | 61.66 | 7 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 51.16 | 17 |
| 3.1.2 Tertiary enrolment..... | 49.24 | 45 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 33.50 | 24 |
| 3.1.4 Reading, maths, and science | 75.67 | 20 |
| 3.1.5 University ranking | 98.72 | 2 |
| 3.2 Lifelong Learning..... | 83.98 | 8 |
| 3.2.1 Quality of management schools..... | 95.24 | 2 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 72.73 | 20 |
| 3.3 Access to Growth Opportunities | 86.27 | 7 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 79.05 | 11 |
| 3.3.2 Personal rights..... | 98.80 | 2 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 96.36 | 7 |
| 3.3.4 Use of virtual professional networks..... | 76.19 | 10 |
| 3.3.5 Collaboration within organisations | 75.03 | 18 |
| 3.3.6 Collaboration across organisations | 92.17 | 10 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN | 82.75 | 11 |
| 4.1 Sustainability | 84.94 | 6 |
| 4.1.1 Pension system | 92.86 | 8 |
| 4.1.2 Social protection | 77.00 | 19 |
| 4.1.3 Brain retention | 84.97 | 7 |
| 4.2 Lifestyle | 80.57 | 22 |
| 4.2.1 Environmental performance..... | 93.84 | 12 |
| 4.2.2 Personal safety | 84.62 | 24 |
| 4.2.3 Physician density | 44.71 | 37 |
| 4.2.4 Sanitation | 99.09 | 20 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS | 60.74 | 25 |
| 5.1 Mid-Level Skills | 45.80 | 35 |
| 5.1.1 Workforce with secondary education | 35.17 | 41 |
| 5.1.2 Population with secondary education | 42.23 | 45 |
| 5.1.3 Technicians and associate professionals | 54.71 | 33 |
| 5.1.4 Labour productivity per employee..... | 51.09 | 24 |
| 5.2 Employability..... | 75.68 | 22 |
| 5.2.1 Ease of finding skilled employees | 74.59 | 23 |
| 5.2.2 Relevance of education system to the economy | 68.03 | 20 |
| 5.2.3 Skills matching with secondary education..... | 75.84 | 23 |
| 5.2.4 Skills matching with tertiary education | 84.28 | 21 |

| | | |
|--|--------------|----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 61.50 | 3 |
| 6.1 High-Level Skills | 59.93 | 10 |
| 6.1.1 Workforce with tertiary education | 59.87 | 12 |
| 6.1.2 Population with tertiary education | 42.02 | 20 |
| 6.1.3 Professionals..... | 70.23 | 8 |
| 6.1.4 Researchers..... | 54.09 | 18 |
| 6.1.5 Senior officials and managers | 67.50 | 10 |
| 6.1.6 Availability of scientists and engineers | 65.88 | 19 |
| 6.2 Talent Impact..... | 63.07 | 3 |
| 6.2.1 Innovation output..... | 78.38 | 6 |
| 6.2.2 High-value exports..... | 39.17 | 13 |
| 6.2.3 New product entrepreneurial activity | 53.14 | 29 |
| 6.2.4 New business density | 74.70 | 8 |
| 6.2.5 Scientific journal articles..... | 69.97 | 14 |

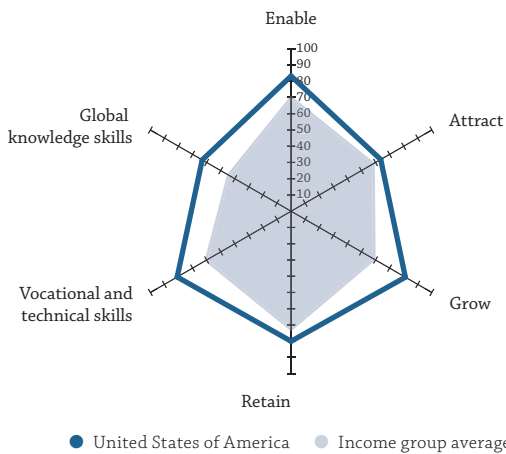
UNITED STATES OF AMERICA

Key Indicators

| | |
|-----------------------------|-------------------------|
| Rank (out of 119)..... | 3 |
| Income group | High income |
| Regional group | Northern America |
| Population (millions) | 321.42 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 55,836.80 |
| GDP (US\$ billions) | 17,947.00 |
| GTCI score | 75.34 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 83.15 | 8 |
| 1.1 Regulatory Landscape..... | 73.92 | 21 |
| 1.1.1 Government effectiveness | 79.69 | 19 |
| 1.1.2 Business-government relations | 53.42 | 70 |
| 1.1.3 Political stability | 80.83 | 30 |
| 1.1.4 Regulatory quality | 76.70 | 18 |
| 1.1.5 Corruption | 78.95 | 17 |
| 1.2 Market Landscape..... | 89.03 | 1 |
| 1.2.1 Competition intensity | 92.86 | 4 |
| 1.2.2 Ease of doing business | 91.50 | 7 |
| 1.2.3 Cluster development | 100.00 | 1 |
| 1.2.4 R&D expenditure | 63.55 | 10 |
| 1.2.5 ICT infrastructure | 90.86 | 14 |
| 1.2.6 Technology utilisation | 95.41 | 4 |
| 1.3 Business and Labour Landscape..... | 86.49 | 8 |
| 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..... | 77.28 | 22 |
| 1.3.4 Labour-employer cooperation | 67.48 | 28 |
| Management Practice | | |
| 1.3.5 Professional management..... | 89.68 | 11 |
| 1.3.6 Relationship of pay to productivity..... | 84.51 | 7 |
| 2 ATTRACT..... | 63.68 | 18 |
| 2.1 External Openness | 57.25 | 17 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 67.10 | 24 |
| 2.1.2 Prevalence of foreign ownership | 72.84 | 28 |
| Attract People | | |
| 2.1.3 Migrant stock | 31.82 | 23 |
| 2.1.4 International students..... | 24.14 | 36 |
| 2.1.5 Brain gain..... | 90.36 | 5 |
| 2.2 Internal Openness..... | 70.11 | 17 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 57.47 | 41 |
| 2.2.2 Tolerance of immigrants..... | 78.87 | 27 |
| 2.2.3 Social mobility..... | 80.93 | 17 |
| Gender Equality | | |
| 2.2.4 Female graduates | 78.88 | 44 |
| 2.2.5 Gender earnings gap | 57.83 | 38 |
| 2.2.6 Leadership opportunities for women..... | 66.67 | 23 |

| | Score | Rank |
|--|--------------|-----------|
| 3 GROW..... | 81.17 | 2 |
| 3.1 Formal Education..... | 69.32 | 2 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 75.17 | 8 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 32.23 | 30 |
| 3.1.4 Reading, maths, and science | 69.89 | 28 |
| 3.1.5 University ranking | 100.00 | 1 |
| 3.2 Lifelong Learning..... | 82.77 | 10 |
| 3.2.1 Quality of management schools..... | 84.39 | 7 |
| 3.2.2 Prevalence of training in firms..... | n/a | n/a |
| 3.2.3 Employee development..... | 81.14 | 15 |
| 3.3 Access to Growth Opportunities | 91.42 | 1 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 81.01 | 9 |
| 3.3.2 Personal rights..... | 82.15 | 27 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 97.88 | 5 |
| 3.3.4 Use of virtual professional networks..... | 100.00 | 1 |
| 3.3.5 Collaboration within organisations | 89.87 | 4 |
| 3.3.6 Collaboration across organisations | 97.62 | 5 |
| 4 RETAIN..... | 80.00 | 14 |
| 4.1 Sustainability | 82.26 | 11 |
| 4.1.1 Pension system | 91.84 | 12 |
| 4.1.2 Social protection | 64.73 | 24 |
| 4.1.3 Brain retention | 90.21 | 2 |
| 4.2 Lifestyle | 77.73 | 32 |
| 4.2.1 Environmental performance..... | 88.88 | 26 |
| 4.2.2 Personal safety | 81.51 | 30 |
| 4.2.3 Physician density | 40.54 | 45 |
| 4.2.4 Sanitation | 100.00 | 1 |
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 80.92 | 2 |
| 5.1 Mid-Level Skills | 78.91 | 2 |
| 5.1.1 Workforce with secondary education | 100.00 | 1 |
| 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..... | 71.10 | 9 |
| 5.2 Employability..... | 82.93 | 13 |
| 5.2.1 Ease of finding skilled employees | 88.78 | 5 |
| 5.2.2 Relevance of education system to the economy | 75.00 | 17 |
| 5.2.3 Skills matching with secondary education..... | 80.71 | 14 |
| 5.2.4 Skills matching with tertiary education | 87.24 | 16 |
| 6 GLOBAL KNOWLEDGE SKILLS | 63.14 | 2 |
| 6.1 High-Level Skills | 74.32 | 2 |
| 6.1.1 Workforce with tertiary education | 100.00 | 1 |
| 6.1.2 Population with tertiary education | 50.94 | 12 |
| 6.1.3 Professionals..... | 61.56 | 13 |
| 6.1.4 Researchers..... | 51.19 | 20 |
| 6.1.5 Senior officials and managers | 97.50 | 3 |
| 6.1.6 Availability of scientists and engineers | 84.71 | 2 |
| 6.2 Talent Impact..... | 51.96 | 15 |
| 6.2.1 Innovation output..... | 79.09 | 5 |
| 6.2.2 High-value exports..... | 35.78 | 18 |
| 6.2.3 New product entrepreneurial activity | 48.73 | 36 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 44.22 | 38 |

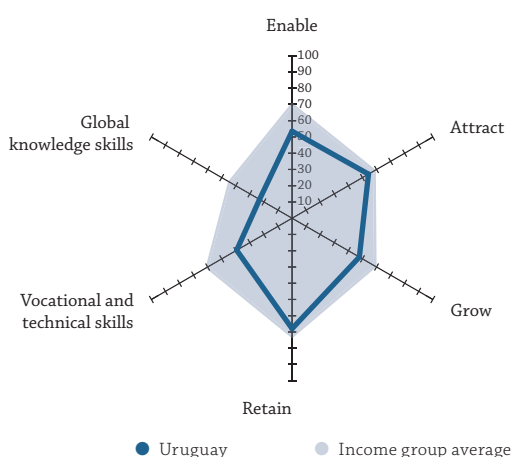
URUGUAY

Key Indicators

| | |
|-----------------------------|---|
| Rank (out of 119)..... | 44 |
| Income group | High income |
| Regional group | Latin, Central America and Caribbean |
| Population (millions) | 3.43 |

| | |
|---|------------------|
| GDP per capita (PPP US\$) | 21,200.60 |
| GDP (US\$ billions) | 53.44 |
| GTCI score | 47.67 |
| GTCI score (income group average) | 60.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 53.53 | 49 |
| 1.1 Regulatory Landscape..... | 65.06 | 35 |
| 1.1.1 Government effectiveness | 56.04 | 40 |
| 1.1.2 Business-government relations | 50.33 | 75 |
| 1.1.3 Political stability | 87.86 | 13 |
| 1.1.4 Regulatory quality | 56.07 | 49 |
| 1.1.5 Corruption | 75.00 | 20 |
| 1.2 Market Landscape | 44.00 | 70 |
| 1.2.1 Competition intensity | 54.57 | 92 |
| 1.2.2 Ease of doing business | 53.09 | 77 |
| 1.2.3 Cluster development | 29.10 | 90 |
| 1.2.4 R&D expenditure | 7.48 | 71 |
| 1.2.5 ICT infrastructure | 72.03 | 40 |
| 1.2.6 Technology utilisation | 47.70 | 54 |
| 1.3 Business and Labour Landscape..... | 51.53 | 76 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 55.67 | 69 |
| 1.3.2 Ease of redundancy | 100.00 | 1 |
| 1.3.3 Active labour market policies..... | 66.44 | 42 |
| 1.3.4 Labour-employer cooperation | 22.49 | 117 |
| Management Practice | | |
| 1.3.5 Professional management..... | 42.69 | 58 |
| 1.3.6 Relationship of pay to productivity..... | 21.89 | 104 |
| 2 ATTRACT..... | 54.27 | 28 |
| 2.1 External Openness | 43.19 | 44 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 63.97 | 28 |
| 2.1.2 Prevalence of foreign ownership | 72.59 | 29 |
| Attract People | | |
| 2.1.3 Migrant stock | 4.46 | 77 |
| 2.1.4 International students..... | n/a | n/a |
| 2.1.5 Brain gain | 31.73 | 82 |
| 2.2 Internal Openness | 65.35 | 22 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 80.46 | 6 |
| 2.2.2 Tolerance of immigrants..... | 88.73 | 12 |
| 2.2.3 Social mobility..... | 56.13 | 33 |
| Gender Equality | | |
| 2.2.4 Female graduates | 93.98 | 11 |
| 2.2.5 Gender earnings gap | 46.99 | 74 |
| 2.2.6 Leadership opportunities for women..... | 25.81 | 87 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 47.79 | 39 |
| 3.1 Formal Education..... | 37.60 | 44 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | 39.79 | 27 |
| 3.1.2 Tertiary enrolment..... | 55.13 | 37 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 27.62 | 41 |
| 3.1.4 Reading, maths, and science | 42.78 | 47 |
| 3.1.5 University ranking | 22.70 | 56 |
| 3.2 Lifelong Learning..... | 48.13 | 49 |
| 3.2.1 Quality of management schools..... | 49.74 | 48 |
| 3.2.2 Prevalence of training in firms..... | 59.63 | 26 |
| 3.2.3 Employee development..... | 35.02 | 68 |
| 3.3 Access to Growth Opportunities | 57.63 | 36 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 41.34 | 67 |
| 3.3.2 Personal rights..... | 93.98 | 10 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 72.12 | 55 |
| 3.3.4 Use of virtual professional networks..... | 34.20 | 27 |
| 3.3.5 Collaboration within organisations | 36.70 | 66 |
| 3.3.6 Collaboration across organisations | 67.44 | 66 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 67.93 | 31 |
| 4.1 Sustainability | 62.07 | 28 |
| 4.1.1 Pension system | 77.55 | 32 |
| 4.1.2 Social protection | 67.43 | 22 |
| 4.1.3 Brain retention | 41.23 | 62 |
| 4.2 Lifestyle | 73.79 | 40 |
| 4.2.1 Environmental performance..... | 68.83 | 60 |
| 4.2.2 Personal safety | 67.61 | 58 |
| 4.2.3 Physician density | 62.82 | 12 |
| 4.2.4 Sanitation | 95.91 | 43 |

| | | |
|--|--------------|-----------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 39.37 | 75 |
| 5.1 Mid-Level Skills | 26.24 | 80 |
| 5.1.1 Workforce with secondary education | 23.24 | 70 |
| 5.1.2 Population with secondary education | 23.11 | 78 |
| 5.1.3 Technicians and associate professionals | 32.74 | 65 |
| 5.1.4 Labour productivity per employee..... | 25.87 | 56 |
| 5.2 Employability..... | 52.50 | 68 |
| 5.2.1 Ease of finding skilled employees | 41.91 | 67 |
| 5.2.2 Relevance of education system to the economy | 24.04 | 99 |
| 5.2.3 Skills matching with secondary education..... | 62.86 | 59 |
| 5.2.4 Skills matching with tertiary education | 81.18 | 25 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 23.14 | 70 |
| 6.1 High-Level Skills | 20.20 | 81 |
| 6.1.1 Workforce with tertiary education | 31.57 | 61 |
| 6.1.2 Population with tertiary education | 17.32 | 70 |
| 6.1.3 Professionals | 30.06 | 57 |
| 6.1.4 Researchers..... | 6.21 | 62 |
| 6.1.5 Senior officials and managers | 12.50 | 82 |
| 6.1.6 Availability of scientists and engineers | 23.53 | 97 |
| 6.2 Talent Impact..... | 26.09 | 56 |
| 6.2.1 Innovation output..... | 29.35 | 63 |
| 6.2.2 High-value exports..... | 25.99 | 27 |
| 6.2.3 New product entrepreneurial activity | 46.37 | 41 |
| 6.2.4 New business density | 14.28 | 39 |
| 6.2.5 Scientific journal articles..... | 14.45 | 66 |

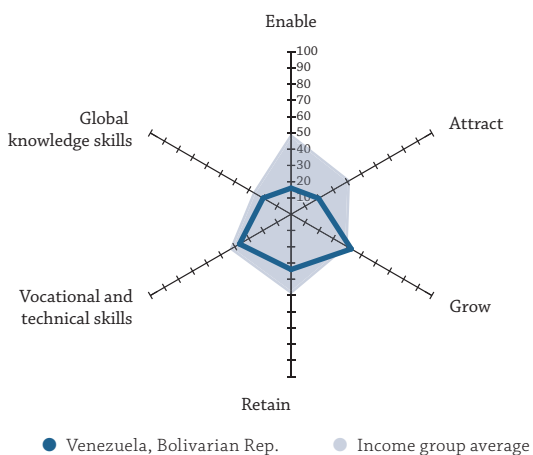
VENEZUELA, BOLIVARIAN REP.

Key Indicators

Rank (out of 119)..... **105**
 Income group..... **Upper middle income**
 Regional group..... **Latin, Central America and Caribbean**
 Population (millions)..... **31.11**

GDP per capita (PPP US\$) **18,309.20**
 GDP (US\$ billions) **371.34**
 GTCI score..... **28.13**
 GTCI score (income group average) **40.93**

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|-------|------|
| 1 ENABLE.....16.06 119 | | |
| 1.1 Regulatory Landscape.....10.81 118 | | |
| 1.1.1 Government effectiveness.....10.80 117 | | |
| 1.1.2 Business-government relations.....0.00 119 | | |
| 1.1.3 Political stability.....39.32 104 | | |
| 1.1.4 Regulatory quality.....0.00 119 | | |
| 1.1.5 Corruption.....3.95 118 | | |
| 1.2 Market Landscape.....15.23 119 | | |
| 1.2.1 Competition intensity.....0.00 119 | | |
| 1.2.2 Ease of doing business.....0.00 119 | | |
| 1.2.3 Cluster development.....4.33 118 | | |
| 1.2.4 R&D expenditure.....n/a n/a | | |
| 1.2.5 ICT infrastructure.....51.30 66 | | |
| 1.2.6 Technology utilisation.....20.49 106 | | |
| 1.3 Business and Labour Landscape.....22.14 118 | | |
| Labour Market | | |
| 1.3.1 Ease of hiring.....22.33 105 | | |
| 1.3.2 Ease of redundancy.....0.00 118 | | |
| 1.3.3 Active labour market policies.....40.44 112 | | |
| 1.3.4 Labour-employer cooperation.....27.64 111 | | |
| Management Practice | | |
| 1.3.5 Professional management.....42.41 60 | | |
| 1.3.6 Relationship of pay to productivity.....0.00 119 | | |
| 2 ATTRACT.....19.52 117 | | |
| 2.1 External Openness.....7.16 119 | | |
| Attract Business | | |
| 2.1.1 FDI and technology transfer.....0.00 119 | | |
| 2.1.2 Prevalence of foreign ownership.....25.68 113 | | |
| Attract People | | |
| 2.1.3 Migrant stock.....9.80 57 | | |
| 2.1.4 International students.....0.31 98 | | |
| 2.1.5 Brain gain.....0.00 119 | | |
| 2.2 Internal Openness.....31.88 114 | | |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities.....31.03 81 | | |
| 2.2.2 Tolerance of immigrants.....42.25 85 | | |
| 2.2.3 Social mobility.....0.00 119 | | |
| Gender Equality | | |
| 2.2.4 Female graduates.....n/a n/a | | |
| 2.2.5 Gender earnings gap.....54.22 48 | | |
| 2.2.6 Leadership opportunities for women.....31.90 76 | | |

| | Score | Rank |
|--|-------|------|
| 3 GROW.....42.72 52 | | |
| 3.1 Formal Education.....33.69 53 | | |
| Enrolment | | |
| 3.1.1 Vocational enrolment.....7.73 86 | | |
| 3.1.2 Tertiary enrolment.....67.37 19 | | |
| Quality | | |
| 3.1.3 Tertiary education expenditure.....37.34 20 | | |
| 3.1.4 Reading, maths, and science.....n/a n/a | | |
| 3.1.5 University ranking.....22.30 58 | | |
| 3.2 Lifelong Learning.....51.12 43 | | |
| 3.2.1 Quality of management schools.....52.65 45 | | |
| 3.2.2 Prevalence of training in firms.....69.39 14 | | |
| 3.2.3 Employee development.....31.31 80 | | |
| 3.3 Access to Growth Opportunities.....43.35 78 | | |
| Empowerment | | |
| 3.3.1 Delegation of authority.....45.25 57 | | |
| 3.3.2 Personal rights.....24.20 104 | | |
| Collaboration | | |
| 3.3.3 Use of virtual social networks.....67.27 72 | | |
| 3.3.4 Use of virtual professional networks.....18.63 53 | | |
| 3.3.5 Collaboration within organisations.....29.64 83 | | |
| 3.3.6 Collaboration across organisations.....75.08 35 | | |
| 4 RETAIN.....34.00 96 | | |
| 4.1 Sustainability.....11.61 116 | | |
| 4.1.1 Pension system.....32.65 61 | | |
| 4.1.2 Social protection.....2.19 117 | | |
| 4.1.3 Brain retention.....0.00 118 | | |
| 4.2 Lifestyle.....56.39 71 | | |
| 4.2.1 Environmental performance.....73.03 53 | | |
| 4.2.2 Personal safety.....2.50 116 | | |
| 4.2.3 Physician density.....n/a n/a | | |
| 4.2.4 Sanitation.....93.64 54 | | |
| 5 VOCATIONAL AND TECHNICAL SKILLS.....36.61 86 | | |
| 5.1 Mid-Level Skills.....26.43 79 | | |
| 5.1.1 Workforce with secondary education.....21.80 75 | | |
| 5.1.2 Population with secondary education.....35.38 57 | | |
| 5.1.3 Technicians and associate professionals.....31.84 67 | | |
| 5.1.4 Labour productivity per employee.....16.72 72 | | |
| 5.2 Employability.....46.78 84 | | |
| 5.2.1 Ease of finding skilled employees.....34.65 85 | | |
| 5.2.2 Relevance of education system to the economy.....18.51 107 | | |
| 5.2.3 Skills matching with secondary education.....57.92 81 | | |
| 5.2.4 Skills matching with tertiary education.....76.02 38 | | |
| 6 GLOBAL KNOWLEDGE SKILLS.....19.89 80 | | |
| 6.1 High-Level Skills.....29.41 57 | | |
| 6.1.1 Workforce with tertiary education.....42.90 37 | | |
| 6.1.2 Population with tertiary education.....48.03 15 | | |
| 6.1.3 Professionals.....40.75 43 | | |
| 6.1.4 Researchers.....4.19 68 | | |
| 6.1.5 Senior officials and managers.....25.00 56 | | |
| 6.1.6 Availability of scientists and engineers.....15.59 106 | | |
| 6.2 Talent Impact.....10.36 101 | | |
| 6.2.1 Innovation output.....n/a n/a | | |
| 6.2.2 High-value exports.....2.07 97 | | |
| 6.2.3 New product entrepreneurial activity.....25.65 74 | | |
| 6.2.4 New business density.....n/a n/a | | |
| 6.2.5 Scientific journal articles.....3.37 102 | | |

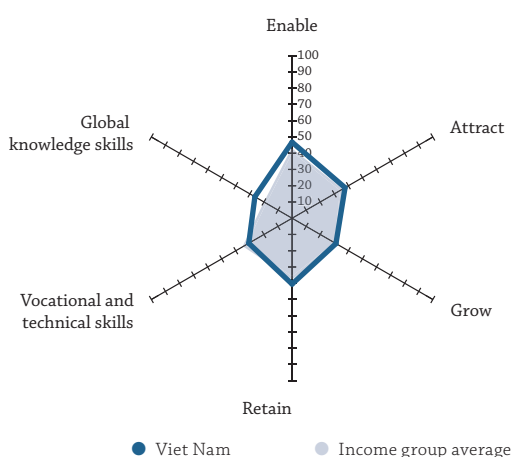
VIET NAM

Key Indicators

| | |
|-----------------------------|--|
| Rank (out of 119)..... | 87 |
| Income group | Lower middle income |
| Regional group | East, Southeastern Asia and Oceania |
| Population (millions) | 91.70 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 6,022.62 |
| GDP (US\$ billions) | 193.60 |
| GTCI score | 35.55 |
| GTCI score (income group average) | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|-----------|
| 1 ENABLE..... | 46.79 | 77 |
| 1.1 Regulatory Landscape..... | 44.83 | 79 |
| 1.1.1 Government effectiveness | 44.22 | 66 |
| 1.1.2 Business-government relations | 57.84 | 62 |
| 1.1.3 Political stability | 64.08 | 58 |
| 1.1.4 Regulatory quality | 33.01 | 99 |
| 1.1.5 Corruption | 25.00 | 86 |
| 1.2 Market Landscape | 41.44 | 79 |
| 1.2.1 Competition intensity | 63.43 | 73 |
| 1.2.2 Ease of doing business | 56.79 | 74 |
| 1.2.3 Cluster development | 47.06 | 50 |
| 1.2.4 R&D expenditure | 4.21 | 82 |
| 1.2.5 ICT infrastructure | 37.93 | 85 |
| 1.2.6 Technology utilisation | 39.22 | 72 |
| 1.3 Business and Labour Landscape..... | 54.09 | 65 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 77.67 | 45 |
| 1.3.2 Ease of redundancy | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 59.76 | 60 |
| 1.3.4 Labour-employer cooperation | 47.15 | 70 |
| Management Practice | | |
| 1.3.5 Professional management..... | 23.50 | 93 |
| 1.3.6 Relationship of pay to productivity..... | 46.46 | 59 |
| 2 ATTRACT..... | 37.62 | 87 |
| 2.1 External Openness | 27.36 | 91 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 44.91 | 75 |
| 2.1.2 Prevalence of foreign ownership | 51.85 | 76 |
| Attract People | | |
| 2.1.3 Migrant stock | 0.02 | 118 |
| 2.1.4 International students..... | 0.47 | 94 |
| 2.1.5 Brain gain | 39.56 | 62 |
| 2.2 Internal Openness | 47.88 | 70 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 40.23 | 68 |
| 2.2.2 Tolerance of immigrants..... | 35.21 | 98 |
| 2.2.3 Social mobility..... | 35.69 | 82 |
| Gender Equality | | |
| 2.2.4 Female graduates | 68.69 | 71 |
| 2.2.5 Gender earnings gap | 79.52 | 7 |
| 2.2.6 Leadership opportunities for women..... | 27.96 | 83 |

| | Score | Rank |
|---|--------------|-----------|
| 3 GROW..... | 31.16 | 91 |
| 3.1 Formal Education..... | 30.22 | 62 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 24.80 | 79 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 19.44 | 68 |
| 3.1.4 Reading, maths, and science | 76.65 | 19 |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 28.87 | 101 |
| 3.2.1 Quality of management schools..... | 22.75 | 107 |
| 3.2.2 Prevalence of training in firms | 24.80 | 69 |
| 3.2.3 Employee development..... | 39.06 | 62 |
| 3.3 Access to Growth Opportunities | 34.40 | 104 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 34.92 | 79 |
| 3.3.2 Personal rights..... | 3.91 | 115 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 73.33 | 52 |
| 3.3.4 Use of virtual professional networks..... | 1.70 | 103 |
| 3.3.5 Collaboration within organisations | 27.65 | 87 |
| 3.3.6 Collaboration across organisations | 64.86 | 80 |

| | | |
|--------------------------------------|--------------|-----------|
| 4 RETAIN..... | 40.50 | 86 |
| 4.1 Sustainability | 30.25 | 81 |
| 4.1.1 Pension system | 17.35 | 81 |
| 4.1.2 Social protection | 37.88 | 58 |
| 4.1.3 Brain retention | 35.54 | 77 |
| 4.2 Lifestyle | 50.74 | 87 |
| 4.2.1 Environmental performance..... | 39.94 | 102 |
| 4.2.2 Personal safety | 69.43 | 51 |
| 4.2.3 Physician density | 18.59 | 77 |
| 4.2.4 Sanitation | 75.00 | 80 |

| | | |
|--|--------------|------------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 30.77 | 100 |
| 5.1 Mid-Level Skills | 13.10 | 100 |
| 5.1.1 Workforce with secondary education | 14.52 | 90 |
| 5.1.2 Population with secondary education | 19.26 | 85 |
| 5.1.3 Technicians and associate professionals | 13.45 | 91 |
| 5.1.4 Labour productivity per employee..... | 5.18 | 87 |
| 5.2 Employability..... | 48.44 | 78 |
| 5.2.1 Ease of finding skilled employees | 36.96 | 77 |
| 5.2.2 Relevance of education system to the economy | 38.46 | 67 |
| 5.2.3 Skills matching with secondary education..... | 55.66 | 94 |
| 5.2.4 Skills matching with tertiary education | 62.69 | 92 |

| | | |
|--|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS | 26.43 | 61 |
| 6.1 High-Level Skills | 15.80 | 91 |
| 6.1.1 Workforce with tertiary education | 21.54 | 80 |
| 6.1.2 Population with tertiary education | 10.46 | 83 |
| 6.1.3 Professionals | 16.18 | 80 |
| 6.1.4 Researchers | 8.04 | 58 |
| 6.1.5 Senior officials and managers | 5.63 | 95 |
| 6.1.6 Availability of scientists and engineers | 32.94 | 77 |
| 6.2 Talent Impact..... | 37.07 | 39 |
| 6.2.1 Innovation output..... | 45.69 | 37 |
| 6.2.2 High-value exports..... | 50.66 | 6 |
| 6.2.3 New product entrepreneurial activity | 45.43 | 42 |
| 6.2.4 New business density | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 6.48 | 87 |

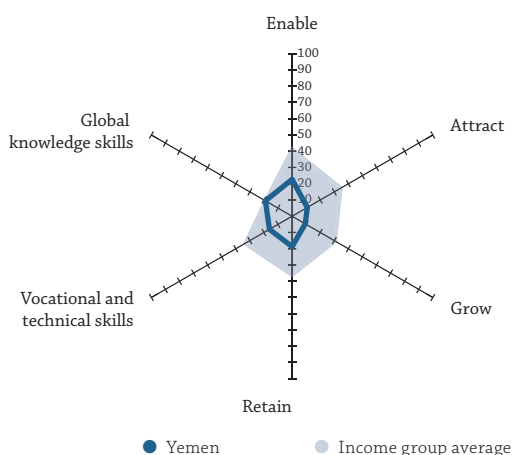
YEMEN

Key Indicators

| | |
|----------------------------|--------------------------------------|
| Rank (out of 119)..... | 119 |
| Income group..... | Lower middle income |
| Regional group..... | North Africa and Western Asia |
| Population (millions)..... | 26.83 |

| | |
|--|-----------------|
| GDP per capita (PPP US\$)..... | 3,791.60 |
| GDP (US\$ billions)..... | 35.95 |
| GTCI score..... | 16.10 |
| GTCI score (income group average)..... | 32.92 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 22.68 | 118 |
| 1.1 Regulatory Landscape..... | 10.18 | 119 |
| 1.1.1 Government effectiveness..... | 0.00 | 119 |
| 1.1.2 Business-government relations..... | 32.45 | 111 |
| 1.1.3 Political stability..... | 0.00 | 119 |
| 1.1.4 Regulatory quality..... | 18.45 | 114 |
| 1.1.5 Corruption..... | 0.00 | 119 |
| 1.2 Market Landscape..... | 16.28 | 118 |
| 1.2.1 Competition intensity..... | 44.00 | 110 |
| 1.2.2 Ease of doing business..... | 11.56 | 118 |
| 1.2.3 Cluster development..... | 18.89 | 112 |
| 1.2.4 R&D expenditure..... | n/a | n/a |
| 1.2.5 ICT infrastructure..... | 6.96 | 113 |
| 1.2.6 Technology utilisation..... | 0.00 | 117 |
| 1.3 Business and Labour Landscape..... | 41.57 | 104 |
| Labour Market | | |
| 1.3.1 Ease of hiring..... | 89.00 | 25 |
| 1.3.2 Ease of redundancy..... | 70.00 | 63 |
| 1.3.3 Active labour market policies..... | 32.78 | 117 |
| 1.3.4 Labour-employer cooperation..... | 35.77 | 97 |
| Management Practice | | |
| 1.3.5 Professional management..... | 0.00 | 119 |
| 1.3.6 Relationship of pay to productivity..... | 21.89 | 104 |
| 2 ATTRACT..... | 10.80 | 119 |
| 2.1 External Openness..... | 9.60 | 118 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 8.36 | 118 |
| 2.1.2 Prevalence of foreign ownership..... | 0.00 | 119 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 2.67 | 89 |
| 2.1.4 International students..... | 22.10 | 39 |
| 2.1.5 Brain gain..... | 14.86 | 113 |
| 2.2 Internal Openness..... | 12.00 | 119 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities..... | 6.90 | 117 |
| 2.2.2 Tolerance of immigrants..... | 25.35 | 109 |
| 2.2.3 Social mobility..... | 10.35 | 118 |
| Gender Equality | | |
| 2.2.4 Female graduates..... | 12.34 | 101 |
| 2.2.5 Gender earnings gap..... | 12.05 | 108 |
| 2.2.6 Leadership opportunities for women..... | 5.02 | 114 |

| | Score | Rank |
|---|-------------|------------|
| 3 GROW..... | 9.36 | 119 |
| 3.1 Formal Education..... | 3.04 | 119 |
| Enrolment | | |
| 3.1.1 Vocational enrolment..... | 1.00 | 106 |
| 3.1.2 Tertiary enrolment..... | 8.11 | 99 |
| 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 | 76 |
| 3.2 Lifelong Learning..... | 8.72 | 118 |
| 3.2.1 Quality of management schools..... | 3.70 | 118 |
| 3.2.2 Prevalence of training in firms..... | 14.38 | 85 |
| 3.2.3 Employee development..... | 8.08 | 118 |
| 3.3 Access to Growth Opportunities..... | 16.32 | 119 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 0.00 | 119 |
| 3.3.2 Personal rights..... | 2.41 | 117 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 46.67 | 102 |
| 3.3.4 Use of virtual professional networks..... | 1.00 | 108 |
| 3.3.5 Collaboration within organisations..... | 1.41 | 118 |
| 3.3.6 Collaboration across organisations..... | 46.46 | 117 |

| | | |
|--------------------------------------|--------------|------------|
| 4 RETAIN..... | 18.70 | 117 |
| 4.1 Sustainability..... | 7.73 | 119 |
| 4.1.1 Pension system..... | 8.16 | 86 |
| 4.1.2 Social protection..... | 9.57 | 113 |
| 4.1.3 Brain retention..... | 5.47 | 116 |
| 4.2 Lifestyle..... | 29.66 | 108 |
| 4.2.1 Environmental performance..... | 23.68 | 112 |
| 4.2.2 Personal safety..... | 43.38 | 102 |
| 4.2.3 Physician density..... | 4.65 | 96 |
| 4.2.4 Sanitation..... | 46.93 | 100 |

| | | |
|---|--------------|------------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 16.08 | 119 |
| 5.1 Mid-Level Skills..... | 11.23 | 103 |
| 5.1.1 Workforce with secondary education..... | 18.15 | 80 |
| 5.1.2 Population with secondary education..... | n/a | n/a |
| 5.1.3 Technicians and associate professionals..... | n/a | n/a |
| 5.1.4 Labour productivity per employee..... | 4.30 | 88 |
| 5.2 Employability..... | 20.94 | 117 |
| 5.2.1 Ease of finding skilled employees..... | 0.00 | 118 |
| 5.2.2 Relevance of education system to the economy..... | 0.00 | 119 |
| 5.2.3 Skills matching with secondary education..... | 36.21 | 116 |
| 5.2.4 Skills matching with tertiary education..... | 47.53 | 116 |

| | | |
|---|--------------|-----------|
| 6 GLOBAL KNOWLEDGE SKILLS..... | 18.96 | 82 |
| 6.1 High-Level Skills..... | 17.24 | 89 |
| 6.1.1 Workforce with tertiary education..... | 11.66 | 92 |
| 6.1.2 Population with tertiary education..... | n/a | n/a |
| 6.1.3 Professionals..... | 36.42 | 47 |
| 6.1.4 Researchers..... | n/a | n/a |
| 6.1.5 Senior officials and managers..... | 15.00 | 74 |
| 6.1.6 Availability of scientists and engineers..... | 5.88 | 116 |
| 6.2 Talent Impact..... | 20.67 | 75 |
| 6.2.1 Innovation output..... | 0.00 | 112 |
| 6.2.2 High-value exports..... | 8.85 | 69 |
| 6.2.3 New product entrepreneurial activity..... | 72.07 | 10 |
| 6.2.4 New business density..... | n/a | n/a |
| 6.2.5 Scientific journal articles..... | 1.77 | 112 |

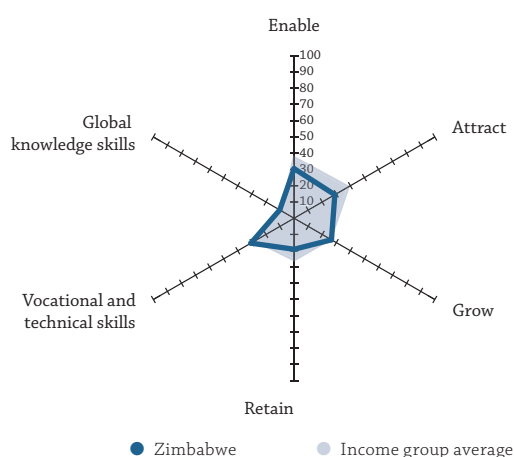
ZIMBABWE

Key Indicators

| | |
|-----------------------------|---------------------------|
| Rank (out of 119)..... | 115 |
| Income group | Low income |
| Regional group..... | Sub-Saharan Africa |
| Population (millions) | 15.60 |

| | |
|---|-----------------|
| GDP per capita (PPP US\$) | 1,793.59 |
| GDP (US\$ billions) | 13.89 |
| GTCI score..... | 24.33 |
| GTCI score (income group average) | 27.42 |

GTCI 2018 Country Profile by Pillar



| | Score | Rank |
|--|--------------|------------|
| 1 ENABLE..... | 30.52 | 113 |
| 1.1 Regulatory Landscape..... | 22.39 | 117 |
| 1.1.1 Government effectiveness | 12.60 | 116 |
| 1.1.2 Business-government relations | 34.00 | 109 |
| 1.1.3 Political stability | 49.76 | 89 |
| 1.1.4 Regulatory quality | 5.10 | 118 |
| 1.1.5 Corruption | 10.53 | 116 |
| 1.2 Market Landscape..... | 27.33 | 110 |
| 1.2.1 Competition intensity | 59.71 | 82 |
| 1.2.2 Ease of doing business | 25.60 | 115 |
| 1.2.3 Cluster development | 11.76 | 117 |
| 1.2.4 R&D expenditure | n/a | n/a |
| 1.2.5 ICT infrastructure | 17.33 | 102 |
| 1.2.6 Technology utilisation | 22.26 | 102 |
| 1.3 Business and Labour Landscape..... | 41.85 | 102 |
| Labour Market | | |
| 1.3.1 Ease of hiring | 66.67 | 51 |
| 1.3.2 Ease of redundancy | 40.00 | 105 |
| 1.3.3 Active labour market policies..... | 33.31 | 116 |
| 1.3.4 Labour-employer cooperation | 38.75 | 92 |
| Management Practice | | |
| 1.3.5 Professional management..... | 52.15 | 38 |
| 1.3.6 Relationship of pay to productivity..... | 20.20 | 109 |
| 2 ATTRACT..... | 28.94 | 109 |
| 2.1 External Openness | 16.09 | 114 |
| Attract Business | | |
| 2.1.1 FDI and technology transfer..... | 8.88 | 117 |
| 2.1.2 Prevalence of foreign ownership | 44.69 | 93 |
| Attract People | | |
| 2.1.3 Migrant stock..... | 5.49 | 72 |
| 2.1.4 International students..... | 2.30 | 80 |
| 2.1.5 Brain gain..... | 19.08 | 107 |
| 2.2 Internal Openness..... | 41.79 | 91 |
| Social Inclusion | | |
| 2.2.1 Tolerance of minorities | 25.29 | 91 |
| 2.2.2 Tolerance of immigrants..... | 53.52 | 66 |
| 2.2.3 Social mobility..... | 38.42 | 74 |
| Gender Equality | | |
| 2.2.4 Female graduates | 34.07 | 96 |
| 2.2.5 Gender earnings gap | 61.45 | 30 |
| 2.2.6 Leadership opportunities for women..... | 37.99 | 68 |

| | Score | Rank |
|---|--------------|------------|
| 3 GROW..... | 26.55 | 105 |
| 3.1 Formal Education..... | 13.59 | 99 |
| Enrolment | | |
| 3.1.1 Vocational enrolment | n/a | n/a |
| 3.1.2 Tertiary enrolment..... | 6.75 | 103 |
| Quality | | |
| 3.1.3 Tertiary education expenditure..... | 34.02 | 23 |
| 3.1.4 Reading, maths, and science | n/a | n/a |
| 3.1.5 University ranking | 0.00 | 76 |
| 3.2 Lifelong Learning..... | 33.82 | 86 |
| 3.2.1 Quality of management schools..... | 32.80 | 89 |
| 3.2.2 Prevalence of training in firms..... | 36.68 | 52 |
| 3.2.3 Employee development..... | 31.99 | 78 |
| 3.3 Access to Growth Opportunities | 32.25 | 109 |
| Empowerment | | |
| 3.3.1 Delegation of authority..... | 48.32 | 45 |
| 3.3.2 Personal rights..... | 10.03 | 110 |
| Collaboration | | |
| 3.3.3 Use of virtual social networks..... | 47.88 | 99 |
| 3.3.4 Use of virtual professional networks..... | 4.46 | 91 |
| 3.3.5 Collaboration within organisations | 32.20 | 79 |
| 3.3.6 Collaboration across organisations | 50.62 | 112 |

| | | |
|--------------------------------------|--------------|------------|
| 4 RETAIN..... | 19.09 | 116 |
| 4.1 Sustainability | 11.82 | 115 |
| 4.1.1 Pension system | 18.37 | 78 |
| 4.1.2 Social protection | 0.00 | 119 |
| 4.1.3 Brain retention | 17.08 | 111 |
| 4.2 Lifestyle..... | 26.36 | 113 |
| 4.2.1 Environmental performance..... | 41.34 | 100 |
| 4.2.2 Personal safety | 35.10 | 108 |
| 4.2.3 Physician density | 0.80 | 106 |
| 4.2.4 Sanitation | 28.18 | 108 |

| | | |
|--|--------------|------------|
| 5 VOCATIONAL AND TECHNICAL SKILLS..... | 30.66 | 102 |
| 5.1 Mid-Level Skills | 3.23 | 116 |
| 5.1.1 Workforce with secondary education | n/a | n/a |
| 5.1.2 Population with secondary education | 2.85 | 100 |
| 5.1.3 Technicians and associate professionals | 6.28 | 103 |
| 5.1.4 Labour productivity per employee..... | 0.56 | 98 |
| 5.2 Employability..... | 58.09 | 49 |
| 5.2.1 Ease of finding skilled employees | 54.79 | 46 |
| 5.2.2 Relevance of education system to the economy | 51.20 | 45 |
| 5.2.3 Skills matching with secondary education..... | 61.38 | 68 |
| 5.2.4 Skills matching with tertiary education | 64.98 | 81 |

| | | |
|--|--------------|------------|
| 6 GLOBAL KNOWLEDGE SKILLS | 10.21 | 105 |
| 6.1 High-Level Skills | 10.54 | 109 |
| 6.1.1 Workforce with tertiary education | n/a | n/a |
| 6.1.2 Population with tertiary education | 21.27 | 63 |
| 6.1.3 Professionals..... | 7.51 | 96 |
| 6.1.4 Researchers..... | 0.94 | 86 |
| 6.1.5 Senior officials and managers | 5.63 | 95 |
| 6.1.6 Availability of scientists and engineers | 17.35 | 104 |
| 6.2 Talent Impact..... | 9.87 | 103 |
| 6.2.1 Innovation output..... | 11.78 | 109 |
| 6.2.2 High-value exports..... | 5.46 | 83 |
| 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..... | 12.37 | 70 |

Data Tables

How to Read the Data Tables

| DATA TABLES | | | |
|--|---|---------------------------------|-------------|
| 1 | 1.1.1 | Government effectiveness | |
| 2 | Government effectiveness indicator 2015 | | |
| 3 | Rank | Country | Value Score |
| | 1 | Singapore | 2.25 100.00 |
| | 2 | Switzerland | 2.01 99.83 |
| | 3 | New Zealand | 1.89 90.75 |
| | 4 | Norway | 1.86 89.97 |
| | 5 | Denmark | 1.85 89.72 |
| | 6 | Netherlands | 1.84 89.66 |
| | 7 | Finland | 1.82 88.95 |
| | 8 | Sweden | 1.81 88.69 |
| | 9 | Japan | 1.79 88.77 |
| | 10 | Canada | 1.77 87.66 |
| | 11 | Germany | 1.74 86.89 |
| | 12 | United Kingdom | 1.74 86.89 |
| | 13 | Luxembourg | 1.72 86.38 |
| | 14 | Australia | 1.56 82.26 |
| | 15 | Ireland | 1.54 81.75 |
| | 16 | United Arab Emirates | 1.54 81.75 |
| | 17 | Iceland | 1.50 80.72 |
| | 18 | Austria | 1.47 79.95 |
| | 19 | United States of America | 1.46 79.69 |
| | 20 | Belgium | 1.44 79.18 |
| | 21 | France | 1.44 79.18 |
| | 22 | Israel | 1.38 77.63 |
| | 23 | Portugal | 1.23 73.78 |
| | 24 | Lithuania | 1.20 73.01 |
| | 25 | Spain | 1.18 72.49 |
| | 26 | Latvia | 1.10 70.44 |
| | 27 | Estonia | 1.09 70.18 |
| | 28 | Chile | 1.08 69.92 |
| | 29 | Czech Republic | 1.05 69.15 |
| | 30 | Cyprus | 1.04 68.89 |
| | 31 | Mauritius | 1.04 68.89 |
| | 32 | Korea, Rep. | 1.03 68.64 |
| | 33 | Qatar | 1.00 63.97 |
| | 34 | Slovenia | 0.97 61.10 |
| | 35 | Malaysia | 0.96 60.84 |
| | 36 | Malta | 0.95 60.01 |
| | 37 | Slovakia | 0.84 63.75 |
| | 38 | Poland | 0.80 62.72 |
| | 39 | Bahrain | 0.57 56.81 |
| | 40 | Uruguay | 0.54 56.04 |
| | 41 | Botswana | 0.51 55.27 |
| | 42 | Croatia | 0.51 55.27 |
| | 43 | Hungary | 0.49 54.76 |
| | 44 | Italy | 0.45 53.73 |
| | 45 | China | 0.42 53.96 |
| | 46 | Bhutan | 0.41 53.70 |
| | 47 | Georgia | 0.40 52.44 |
| | 48 | Costa Rica | 0.38 51.93 |
| | 49 | Turkmenistan | 0.36 51.41 |
| | 50 | Panama | 0.30 49.87 |
| | 51 | South Africa | 0.27 49.10 |
| | 52 | Namibia | 0.26 48.84 |
| | 53 | Greenland | 0.25 48.99 |
| | 54 | Trinidad and Tobago | 0.24 48.33 |
| | 55 | Turkey | 0.23 48.07 |
| | 56 | Bulgaria | 0.22 47.81 |
| | 57 | Mexico | 0.21 47.56 |
| | 58 | Saudi Arabia | 0.21 47.56 |
| | 59 | Morocco | 0.16 46.27 |
| | 60 | Jordan | 0.14 45.76 |
| | 61 | Macedonia, FYR | -0.13 45.50 |
| | 62 | Philippines | -0.11 44.99 |
| | 63 | Serbia | -0.11 44.99 |
| | 64 | India | -0.10 44.73 |
| | 65 | Oman | -0.09 44.47 |
| | 66 | Viet Nam | -0.08 44.22 |
| | 67 | Albania | -0.03 42.93 |
| | 68 | Sri Lanka | -0.01 42.42 |
| | 69 | Kuwait | -0.02 41.65 |
| | 70 | Colombia | -0.03 41.39 |
| | 71 | Romania | -0.04 41.13 |
| | 72 | Russia | -0.04 41.13 |
| | 73 | Kazakhstan | -0.05 40.87 |
| | 74 | Morocco | -0.06 40.62 |
| | 75 | Argentina | -0.09 39.85 |
| | 76 | Taiwan | -0.10 39.59 |
| | 77 | Armenia | -0.14 38.56 |
| | 78 | Russian Federation | -0.18 37.53 |
| | 79 | Brazil | -0.19 37.28 |
| | 80 | Kuwait, Islamic Rep. | -0.20 37.02 |
| | 81 | Indonesia | -0.22 36.50 |
| | 82 | Azerbaijan | -0.23 36.25 |
| | 83 | El Salvador | -0.24 35.99 |
| | 84 | Ghana | -0.26 35.48 |
| | 85 | Peru | -0.28 34.96 |
| | 86 | Kenya | -0.29 34.70 |
| | 87 | Dominican Republic | -0.34 33.42 |
| | 88 | Mongolia | -0.40 31.88 |
| | 89 | Ecuador | -0.44 30.85 |
| | 90 | Senegal | -0.44 30.85 |
| | 91 | Lebanon | -0.47 30.08 |
| | 92 | Uganda | -0.48 29.82 |
| | 93 | Laos PDR | -0.50 29.31 |
| | 94 | Algeria | -0.51 29.05 |
| | 95 | Ukraine | -0.51 29.05 |
| | 96 | Bosnia and Herzegovina | -0.54 28.28 |
| | 97 | Tanzania, United Rep. | -0.60 26.74 |
| | 98 | Moldova, Rep. | -0.63 25.96 |
| | 99 | Ethiopia | -0.64 25.71 |
| | 100 | Bolivia, Plurinational St. | -0.66 25.19 |
| | 101 | Pakistan | -0.66 25.19 |
| | 102 | Lesotho | -0.67 24.94 |
| | 103 | Malawi | -0.67 24.94 |
| | 104 | Cambodia | -0.69 24.42 |
| | 105 | Guatemala | -0.71 23.91 |
| | 106 | Bangladesh | -0.73 23.39 |
| | 107 | Mozambique | -0.74 23.14 |
| | 108 | Egypt | -0.76 22.62 |
| | 109 | Nicaragua | -0.80 21.59 |
| | 110 | Honduras | -0.82 21.08 |
| | 111 | Gambia | -0.89 19.28 |
| | 112 | Kyrgyzstan | -0.90 19.02 |
| | 113 | Mali | -0.91 18.77 |
| | 114 | Paraguay | -0.95 17.74 |
| | 115 | Nepal | -1.04 15.42 |
| | 116 | Zimbabwe | -1.15 12.60 |
| | 117 | Venezuela, Bolivarian Rep. | -1.22 10.80 |
| | 118 | Madagascar | -1.29 9.00 |
| | 119 | Yemen | -1.64 0.00 |
| 4 | <p>SOURCE: World Bank, Worldwide Governance Indicators, 2016 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 2006.</p> | | |
| 242 THE GLOBAL TALENT COMPETITIVENESS INDEX 2018 | | | |

This appendix provides the rankings and scores for each of the 68 variables that make up the GTCI 2018.

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 for the majority of countries,
- 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 most countries in the sample. 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 year of the data for the majority of countries.

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| 1.1.4 | Regulatory quality..... | 245 | | |
| 1.1.5 | Corruption..... | 246 | | |
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| 1.2.6 | Technology utilisation..... | 252 | | |
| 1.3 | Business and Labour Landscape | | | |
| 1.3.1 | Ease of hiring..... | 253 | | |
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| 1.3.4 | Labour-employer cooperation..... | 256 | | |
| 1.3.5 | Professional management..... | 257 | | |
| 1.3.6 | Relationship of pay to productivity..... | 258 | | |
| 2 | ATTRACT | 259 | | |
| 2.1 | External Openness | | | |
| 2.1.1 | FDI and technology transfer..... | 260 | | |
| 2.1.2 | Prevalence of foreign ownership..... | 261 | | |
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| 2.1.4 | International students..... | 263 | | |
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| 3 | GROW | 271 | | |
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| 3.1.1 | Vocational enrolment..... | 272 | | |
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| 3.2 | Lifelong Learning | | | |
| 3.2.1 | Quality of management schools..... | 277 | | |
| 3.2.2 | Prevalence of training in firms..... | 278 | | |
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| 3.3 | Access to Growth Opportunities | | | |
| 3.3.1 | Delegation of authority..... | 280 | | |
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Pillar 1

Enable

1.1.1 Government effectiveness

Government effectiveness indicator | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Singapore | 2.25 | 100.00 | 61 | Macedonia, FYR | 0.13 | 45.50 |
| 2 | Switzerland | 2.01 | 93.83 | 62 | Philippines | 0.11 | 44.99 |
| 3 | New Zealand | 1.89 | 90.75 | 62 | Serbia | 0.11 | 44.99 |
| 4 | Norway | 1.86 | 89.97 | 64 | India | 0.10 | 44.73 |
| 5 | Denmark | 1.85 | 89.72 | 65 | Oman | 0.09 | 44.47 |
| 6 | Netherlands | 1.84 | 89.46 | 66 | Viet Nam | 0.08 | 44.22 |
| 7 | Finland | 1.82 | 88.95 | 67 | Albania | 0.03 | 42.93 |
| 8 | Sweden | 1.81 | 88.69 | 68 | Sri Lanka | 0.01 | 42.42 |
| 9 | Japan | 1.79 | 88.17 | 69 | Kuwait | -0.02 | 41.65 |
| 10 | Canada | 1.77 | 87.66 | 70 | Colombia | -0.03 | 41.39 |
| 11 | Germany | 1.74 | 86.89 | 71 | Romania | -0.04 | 41.13 |
| 11 | United Kingdom | 1.74 | 86.89 | 71 | Rwanda | -0.04 | 41.13 |
| 13 | Luxembourg | 1.72 | 86.38 | 73 | Kazakhstan | -0.05 | 40.87 |
| 14 | Australia | 1.56 | 82.26 | 74 | Morocco | -0.06 | 40.62 |
| 15 | Ireland | 1.54 | 81.75 | 75 | Argentina | -0.09 | 39.85 |
| 15 | United Arab Emirates | 1.54 | 81.75 | 76 | Tunisia | -0.10 | 39.59 |
| 17 | Iceland | 1.50 | 80.72 | 77 | Armenia | -0.14 | 38.56 |
| 18 | Austria | 1.47 | 79.95 | 78 | Russian Federation | -0.18 | 37.53 |
| 19 | United States of America | 1.46 | 79.69 | 79 | Brazil | -0.19 | 37.28 |
| 20 | Belgium | 1.44 | 79.18 | 80 | Iran, Islamic Rep. | -0.20 | 37.02 |
| 20 | France | 1.44 | 79.18 | 81 | Indonesia | -0.22 | 36.50 |
| 22 | Israel | 1.38 | 77.63 | 82 | Azerbaijan | -0.23 | 36.25 |
| 23 | Portugal | 1.23 | 73.78 | 83 | El Salvador | -0.24 | 35.99 |
| 24 | Lithuania | 1.20 | 73.01 | 84 | Ghana | -0.26 | 35.48 |
| 25 | Spain | 1.18 | 72.49 | 85 | Peru | -0.28 | 34.96 |
| 26 | Latvia | 1.10 | 70.44 | 86 | Kenya | -0.29 | 34.70 |
| 27 | Estonia | 1.09 | 70.18 | 87 | Dominican Republic | -0.34 | 33.42 |
| 28 | Chile | 1.08 | 69.92 | 88 | Mongolia | -0.40 | 31.88 |
| 29 | Czech Republic | 1.05 | 69.15 | 89 | Ecuador | -0.44 | 30.85 |
| 30 | Cyprus | 1.04 | 68.89 | 89 | Senegal | -0.44 | 30.85 |
| 30 | Mauritius | 1.04 | 68.89 | 91 | Lebanon | -0.47 | 30.08 |
| 32 | Korea, Rep. | 1.03 | 68.64 | 92 | Uganda | -0.48 | 29.82 |
| 33 | Qatar | 1.00 | 67.87 | 93 | Lao PDR | -0.50 | 29.31 |
| 34 | Slovenia | 0.97 | 67.10 | 94 | Algeria | -0.51 | 29.05 |
| 35 | Malaysia | 0.96 | 66.84 | 94 | Ukraine | -0.51 | 29.05 |
| 36 | Malta | 0.85 | 64.01 | 96 | Bosnia and Herzegovina | -0.54 | 28.28 |
| 37 | Slovakia | 0.84 | 63.75 | 97 | Tanzania, United Rep. | -0.60 | 26.74 |
| 38 | Poland | 0.80 | 62.72 | 98 | Moldova, Rep. | -0.63 | 25.96 |
| 39 | Bahrain | 0.57 | 56.81 | 99 | Ethiopia | -0.64 | 25.71 |
| 40 | Uruguay | 0.54 | 56.04 | 100 | Bolivia, Plurinational St. | -0.66 | 25.19 |
| 41 | Botswana | 0.51 | 55.27 | 100 | Pakistan | -0.66 | 25.19 |
| 41 | Croatia | 0.51 | 55.27 | 102 | Lesotho | -0.67 | 24.94 |
| 43 | Hungary | 0.49 | 54.76 | 102 | Malawi | -0.67 | 24.94 |
| 44 | Italy | 0.45 | 53.73 | 104 | Cambodia | -0.69 | 24.42 |
| 45 | China | 0.42 | 52.96 | 105 | Guatemala | -0.71 | 23.91 |
| 46 | Bhutan | 0.41 | 52.70 | 106 | Bangladesh | -0.73 | 23.39 |
| 47 | Georgia | 0.40 | 52.44 | 107 | Mozambique | -0.74 | 23.14 |
| 48 | Costa Rica | 0.38 | 51.93 | 108 | Egypt | -0.76 | 22.62 |
| 49 | Thailand | 0.36 | 51.41 | 109 | Nicaragua | -0.80 | 21.59 |
| 50 | Panama | 0.30 | 49.87 | 110 | Honduras | -0.82 | 21.08 |
| 51 | South Africa | 0.27 | 49.10 | 111 | Gambia | -0.89 | 19.28 |
| 52 | Namibia | 0.26 | 48.84 | 112 | Kyrgyzstan | -0.90 | 19.02 |
| 53 | Greece | 0.25 | 48.59 | 113 | Mali | -0.91 | 18.77 |
| 54 | Trinidad and Tobago | 0.24 | 48.33 | 114 | Paraguay | -0.95 | 17.74 |
| 55 | Turkey | 0.23 | 48.07 | 115 | Nepal | -1.04 | 15.42 |
| 56 | Bulgaria | 0.22 | 47.81 | 116 | Zimbabwe | -1.15 | 12.60 |
| 57 | Mexico | 0.21 | 47.56 | 117 | Venezuela, Bolivarian Rep. | -1.22 | 10.80 |
| 57 | Saudi Arabia | 0.21 | 47.56 | 118 | Madagascar | -1.29 | 9.00 |
| 59 | Montenegro | 0.16 | 46.27 | 119 | Yemen | -1.64 | 0.00 |
| 60 | Jordan | 0.14 | 45.76 | | | | |

SOURCE: World Bank, *Worldwide Governance Indicators*, 2016 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 2006.

1.1.2 Business-government relations

Average answer to the question: In your country, how would you best characterise relations between business and government? [1 = highly confrontational; 7 = highly cooperative] | 2014

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Singapore | 6.28 | 100.00 | 61 | Georgia | 4.43 | 59.16 |
| 2 | United Arab Emirates | 6.17 | 97.57 | 62 | Viet Nam | 4.37 | 57.84 |
| 3 | Qatar | 6.12 | 96.47 | 63 | Thailand | 4.33 | 56.95 |
| 4 | Luxembourg | 6.01 | 94.04 | 64 | Lesotho | 4.29 | 56.07 |
| 5 | Finland | 5.90 | 91.61 | 65 | Iceland | 4.27 | 55.63 |
| 6 | Rwanda | 5.89 | 91.39 | 66 | Israel | 4.25 | 55.19 |
| 7 | Norway | 5.85 | 90.51 | 67 | Paraguay | 4.24 | 54.97 |
| 8 | Ireland | 5.80 | 89.40 | 68 | Peru | 4.22 | 54.53 |
| 9 | New Zealand | 5.74 | 88.08 | 69 | Malawi | 4.21 | 54.30 |
| 10 | Bahrain | 5.71 | 87.42 | 70 | United States of America | 4.17 | 53.42 |
| 11 | Switzerland | 5.67 | 86.53 | 71 | Honduras | 4.07 | 51.21 |
| 12 | Malaysia | 5.64 | 85.87 | 71 | Mali | 4.07 | 51.21 |
| 13 | Oman | 5.47 | 82.12 | 73 | Lithuania | 4.06 | 50.99 |
| 14 | Lao PDR | 5.43 | 81.24 | 74 | Armenia | 4.05 | 50.77 |
| 15 | Japan | 5.37 | 79.91 | 75 | Uruguay | 4.03 | 50.33 |
| 16 | Canada | 5.34 | 79.25 | 76 | Ethiopia | 4.01 | 49.89 |
| 17 | Netherlands | 5.33 | 79.03 | 77 | El Salvador | 3.99 | 49.45 |
| 18 | Sweden | 5.30 | 78.37 | 78 | Bangladesh | 3.98 | 49.23 |
| 19 | Mauritius | 5.22 | 76.60 | 78 | Cambodia | 3.98 | 49.23 |
| 20 | Denmark | 5.12 | 74.39 | 80 | Albania | 3.96 | 48.79 |
| 21 | Chile | 5.09 | 73.73 | 81 | Belgium | 3.92 | 47.90 |
| 22 | Gambia | 5.08 | 73.51 | 82 | Latvia | 3.90 | 47.46 |
| 23 | Philippines | 5.07 | 73.29 | 83 | India | 3.89 | 47.24 |
| 24 | United Kingdom | 5.01 | 71.96 | 84 | Russian Federation | 3.88 | 47.02 |
| 25 | Germany | 5.00 | 71.74 | 85 | Tunisia | 3.86 | 46.58 |
| 26 | Saudi Arabia | 4.99 | 71.52 | 86 | Kyrgyzstan | 3.83 | 45.92 |
| 27 | Botswana | 4.93 | 70.20 | 86 | Poland | 3.83 | 45.92 |
| 27 | Sri Lanka | 4.93 | 70.20 | 88 | Algeria | 3.81 | 45.47 |
| 29 | Macedonia, FYR | 4.92 | 69.98 | 89 | Brazil | 3.79 | 45.03 |
| 30 | Malta | 4.90 | 69.54 | 89 | Ecuador | 3.79 | 45.03 |
| 31 | Austria | 4.89 | 69.32 | 91 | Czech Republic | 3.77 | 44.59 |
| 32 | China | 4.88 | 69.09 | 91 | Nepal | 3.77 | 44.59 |
| 33 | Indonesia | 4.84 | 68.21 | 91 | Tanzania, United Rep. | 3.77 | 44.59 |
| 34 | Estonia | 4.83 | 67.99 | 94 | Ghana | 3.65 | 41.94 |
| 35 | Senegal | 4.78 | 66.89 | 94 | Romania | 3.65 | 41.94 |
| 36 | Mexico | 4.75 | 66.23 | 96 | Serbia | 3.59 | 40.62 |
| 37 | Australia | 4.68 | 64.68 | 97 | Egypt | 3.56 | 39.96 |
| 38 | Costa Rica | 4.66 | 64.24 | 97 | Moldova, Rep. | 3.56 | 39.96 |
| 39 | Dominican Republic | 4.65 | 64.02 | 99 | Pakistan | 3.54 | 39.51 |
| 40 | Kazakhstan | 4.62 | 63.36 | 100 | Bolivia, Plurinational St. | 3.45 | 37.53 |
| 41 | Portugal | 4.61 | 63.13 | 101 | South Africa | 3.44 | 37.31 |
| 42 | Panama | 4.59 | 62.69 | 102 | Hungary | 3.40 | 36.42 |
| 43 | Namibia | 4.58 | 62.47 | 103 | France | 3.39 | 36.20 |
| 44 | Guatemala | 4.57 | 62.25 | 104 | Greece | 3.38 | 35.98 |
| 44 | Spain | 4.57 | 62.25 | 104 | Kuwait | 3.38 | 35.98 |
| 46 | Cyprus | 4.56 | 62.03 | 104 | Ukraine | 3.38 | 35.98 |
| 46 | Korea, Rep. | 4.56 | 62.03 | 107 | Iran, Islamic Rep. | 3.32 | 34.66 |
| 48 | Bosnia and Herzegovina | 4.55 | 61.81 | 107 | Madagascar | 3.32 | 34.66 |
| 48 | Morocco | 4.55 | 61.81 | 109 | Zimbabwe | 3.29 | 34.00 |
| 50 | Jordan | 4.54 | 61.59 | 110 | Bulgaria | 3.25 | 33.11 |
| 50 | Montenegro | 4.54 | 61.59 | 111 | Yemen | 3.22 | 32.45 |
| 50 | Nicaragua | 4.54 | 61.59 | 112 | Slovenia | 3.20 | 32.01 |
| 53 | Kenya | 4.52 | 61.15 | 113 | Lebanon | 3.18 | 31.57 |
| 54 | Colombia | 4.48 | 60.26 | 114 | Croatia | 3.12 | 30.24 |
| 54 | Turkey | 4.48 | 60.26 | 115 | Mongolia | 2.98 | 27.15 |
| 56 | Bhutan | 4.47 | 60.04 | 116 | Slovakia | 2.88 | 24.94 |
| 56 | Mozambique | 4.47 | 60.04 | 117 | Italy | 2.66 | 20.09 |
| 58 | Trinidad and Tobago | 4.46 | 59.82 | 118 | Argentina | 2.33 | 12.80 |
| 59 | Azerbaijan | 4.45 | 59.60 | 119 | Venezuela, Bolivarian Rep. | 1.75 | 0.00 |
| 60 | Uganda | 4.44 | 59.38 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2013–2014 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2006.

1.1.3 Political stability

Political stability and absence of violence indicator | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | New Zealand | 1.49 | 100.00 | 61 | Nicaragua | -0.03 | 63.11 |
| 2 | Luxembourg | 1.41 | 98.06 | 61 | Sri Lanka | -0.03 | 63.11 |
| 3 | Switzerland | 1.31 | 95.63 | 63 | El Salvador | -0.05 | 62.62 |
| 4 | Iceland | 1.27 | 94.66 | 64 | Argentina | -0.07 | 62.14 |
| 5 | Canada | 1.24 | 93.93 | 64 | Malawi | -0.07 | 62.14 |
| 5 | Singapore | 1.24 | 93.93 | 66 | Rwanda | -0.08 | 61.89 |
| 7 | Austria | 1.19 | 92.72 | 67 | Cambodia | -0.10 | 61.41 |
| 8 | Norway | 1.15 | 91.75 | 67 | Ecuador | -0.10 | 61.41 |
| 9 | Bhutan | 1.10 | 90.53 | 67 | Kazakhstan | -0.10 | 61.41 |
| 10 | Finland | 1.04 | 89.08 | 67 | Lesotho | -0.10 | 61.41 |
| 10 | Malta | 1.04 | 89.08 | 71 | Kuwait | -0.11 | 61.17 |
| 12 | Botswana | 1.03 | 88.83 | 72 | Senegal | -0.17 | 59.71 |
| 13 | Uruguay | 0.99 | 87.86 | 73 | South Africa | -0.18 | 59.47 |
| 14 | Japan | 0.98 | 87.62 | 74 | Macedonia, FYR | -0.20 | 58.98 |
| 14 | Qatar | 0.98 | 87.62 | 75 | Greece | -0.23 | 58.25 |
| 16 | Sweden | 0.97 | 87.38 | 76 | Bolivia, Plurinational St. | -0.28 | 57.04 |
| 17 | Czech Republic | 0.96 | 87.14 | 77 | Armenia | -0.29 | 56.80 |
| 17 | Slovakia | 0.96 | 87.14 | 78 | Morocco | -0.34 | 55.58 |
| 19 | Mauritius | 0.95 | 86.89 | 79 | Brazil | -0.38 | 54.61 |
| 20 | Ireland | 0.93 | 86.41 | 80 | Moldova, Rep. | -0.39 | 54.37 |
| 20 | Netherlands | 0.93 | 86.41 | 81 | Georgia | -0.40 | 54.13 |
| 22 | Slovenia | 0.92 | 86.17 | 81 | Madagascar | -0.40 | 54.13 |
| 23 | Australia | 0.90 | 85.68 | 83 | Bosnia and Herzegovina | -0.45 | 52.91 |
| 24 | Denmark | 0.89 | 85.44 | 83 | Tanzania, United Rep. | -0.45 | 52.91 |
| 25 | Poland | 0.87 | 84.95 | 85 | Honduras | -0.51 | 51.46 |
| 25 | Portugal | 0.87 | 84.95 | 85 | Peru | -0.51 | 51.46 |
| 27 | United Arab Emirates | 0.76 | 82.28 | 87 | Saudi Arabia | -0.54 | 50.73 |
| 28 | Hungary | 0.73 | 81.55 | 88 | China | -0.56 | 50.24 |
| 29 | Germany | 0.72 | 81.31 | 89 | Jordan | -0.58 | 49.76 |
| 30 | Lithuania | 0.70 | 80.83 | 89 | Mozambique | -0.58 | 49.76 |
| 30 | United States of America | 0.70 | 80.83 | 89 | Zimbabwe | -0.58 | 49.76 |
| 32 | Oman | 0.69 | 80.58 | 92 | Indonesia | -0.60 | 49.27 |
| 33 | Mongolia | 0.65 | 79.61 | 93 | Guatemala | -0.65 | 48.06 |
| 33 | Namibia | 0.65 | 79.61 | 94 | Azerbaijan | -0.69 | 47.09 |
| 35 | Estonia | 0.62 | 78.88 | 95 | Philippines | -0.84 | 43.45 |
| 36 | Belgium | 0.60 | 78.40 | 96 | Uganda | -0.86 | 42.96 |
| 37 | Costa Rica | 0.58 | 77.91 | 97 | Kyrgyzstan | -0.87 | 42.72 |
| 37 | Croatia | 0.58 | 77.91 | 97 | Mexico | -0.87 | 42.72 |
| 39 | United Kingdom | 0.56 | 77.43 | 97 | Tunisia | -0.87 | 42.72 |
| 40 | Cyprus | 0.54 | 76.94 | 100 | Iran, Islamic Rep. | -0.91 | 41.75 |
| 41 | Lao PDR | 0.48 | 75.49 | 101 | India | -0.92 | 41.50 |
| 42 | Latvia | 0.45 | 74.76 | 102 | Nepal | -0.93 | 41.26 |
| 43 | Panama | 0.41 | 73.79 | 103 | Thailand | -0.96 | 40.53 |
| 44 | Chile | 0.40 | 73.54 | 104 | Venezuela, Bolivarian Rep. | -1.01 | 39.32 |
| 45 | Albania | 0.36 | 72.57 | 105 | Algeria | -1.05 | 38.35 |
| 46 | Italy | 0.34 | 72.09 | 105 | Russian Federation | -1.05 | 38.35 |
| 47 | Spain | 0.29 | 70.87 | 107 | Colombia | -1.06 | 38.11 |
| 48 | France | 0.27 | 70.39 | 108 | Bahrain | -1.08 | 37.62 |
| 48 | Trinidad and Tobago | 0.27 | 70.39 | 109 | Israel | -1.12 | 36.65 |
| 50 | Serbia | 0.23 | 69.42 | 110 | Bangladesh | -1.15 | 35.92 |
| 51 | Romania | 0.20 | 68.69 | 111 | Turkey | -1.28 | 32.77 |
| 52 | Malaysia | 0.19 | 68.45 | 112 | Kenya | -1.29 | 32.52 |
| 53 | Dominican Republic | 0.17 | 67.96 | 113 | Egypt | -1.34 | 31.31 |
| 54 | Montenegro | 0.13 | 66.99 | 114 | Ethiopia | -1.48 | 27.91 |
| 55 | Korea, Rep. | 0.10 | 66.26 | 115 | Mali | -1.66 | 23.54 |
| 56 | Ghana | 0.03 | 64.56 | 116 | Lebanon | -1.72 | 22.09 |
| 57 | Bulgaria | 0.02 | 64.32 | 117 | Ukraine | -1.93 | 16.99 |
| 58 | Gambia | 0.01 | 64.08 | 118 | Pakistan | -2.54 | 2.18 |
| 58 | Viet Nam | 0.01 | 64.08 | 119 | Yemen | -2.63 | 0.00 |
| 60 | Paraguay | -0.02 | 63.35 | | | | |

SOURCE: World Bank, *Worldwide Governance Indicators*, 2016 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 2006.

1.1.4 Regulatory quality

Regulatory quality indicator | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Singapore | 2.26 | 100.00 | 61 | Montenegro | -0.23 | 50.73 |
| 2 | New Zealand | 1.95 | 92.48 | 62 | Albania | -0.20 | 50.00 |
| 3 | United Kingdom | 1.86 | 90.29 | 62 | El Salvador | -0.20 | 50.00 |
| 4 | Finland | 1.83 | 89.56 | 64 | Trinidad and Tobago | -0.15 | 48.79 |
| 5 | Ireland | 1.81 | 89.08 | 65 | Serbia | -0.14 | 48.54 |
| 5 | Sweden | 1.81 | 89.08 | 66 | Jordan | -0.05 | 46.36 |
| 7 | Australia | 1.80 | 88.83 | 67 | Saudi Arabia | -0.03 | 45.87 |
| 8 | Netherlands | 1.77 | 88.11 | 68 | Ghana | -0.03 | 44.42 |
| 9 | Switzerland | 1.76 | 87.86 | 68 | Kazakhstan | -0.03 | 44.42 |
| 10 | Denmark | 1.73 | 87.14 | 70 | Dominican Republic | -0.04 | 44.17 |
| 11 | Canada | 1.71 | 86.65 | 70 | Philippines | -0.04 | 44.17 |
| 12 | Germany | 1.67 | 85.68 | 72 | Moldova, Rep. | -0.05 | 43.93 |
| 12 | Luxembourg | 1.67 | 85.68 | 72 | Sri Lanka | -0.05 | 43.93 |
| 14 | Estonia | 1.66 | 85.44 | 74 | Namibia | -0.08 | 43.20 |
| 15 | Norway | 1.63 | 84.71 | 75 | Kuwait | -0.16 | 41.26 |
| 16 | Austria | 1.43 | 79.85 | 76 | Morocco | -0.17 | 41.02 |
| 17 | Chile | 1.35 | 77.91 | 77 | Bosnia and Herzegovina | -0.18 | 40.78 |
| 18 | United States of America | 1.30 | 76.70 | 77 | Senegal | -0.18 | 40.78 |
| 19 | Belgium | 1.28 | 76.21 | 79 | Guatemala | -0.20 | 40.29 |
| 19 | Lithuania | 1.28 | 76.21 | 80 | Brazil | -0.21 | 40.05 |
| 21 | Iceland | 1.27 | 75.97 | 80 | Indonesia | -0.21 | 40.05 |
| 21 | Israel | 1.27 | 75.97 | 82 | Uganda | -0.24 | 39.32 |
| 23 | Japan | 1.18 | 73.79 | 83 | Azerbaijan | -0.25 | 39.08 |
| 24 | Malta | 1.17 | 73.54 | 84 | China | -0.27 | 38.59 |
| 25 | Korea, Rep. | 1.16 | 73.30 | 84 | Paraguay | -0.27 | 38.59 |
| 26 | France | 1.15 | 73.06 | 86 | Lebanon | -0.28 | 38.35 |
| 27 | United Arab Emirates | 1.13 | 72.57 | 87 | Kenya | -0.29 | 38.11 |
| 28 | Latvia | 1.09 | 71.60 | 88 | Mongolia | -0.33 | 37.14 |
| 28 | Mauritius | 1.09 | 71.60 | 89 | Tanzania, United Rep. | -0.36 | 36.41 |
| 30 | Czech Republic | 1.08 | 71.36 | 90 | India | -0.39 | 35.68 |
| 31 | Cyprus | 1.06 | 70.87 | 90 | Lesotho | -0.39 | 35.68 |
| 32 | Poland | 1.00 | 69.42 | 90 | Tunisia | -0.39 | 35.68 |
| 33 | Portugal | 0.94 | 67.96 | 93 | Honduras | -0.40 | 35.44 |
| 34 | Georgia | 0.92 | 67.48 | 94 | Nicaragua | -0.43 | 34.71 |
| 35 | Bahrain | 0.83 | 65.29 | 95 | Kyrgyzstan | -0.47 | 33.74 |
| 36 | Slovakia | 0.79 | 64.32 | 96 | Cambodia | -0.48 | 33.50 |
| 36 | Spain | 0.79 | 64.32 | 97 | Gambia | -0.49 | 33.25 |
| 38 | Hungary | 0.77 | 63.83 | 97 | Mozambique | -0.49 | 33.25 |
| 38 | Malaysia | 0.77 | 63.83 | 99 | Viet Nam | -0.50 | 33.01 |
| 40 | Italy | 0.73 | 62.86 | 100 | Russian Federation | -0.52 | 32.52 |
| 41 | Qatar | 0.69 | 61.89 | 101 | Mali | -0.57 | 31.31 |
| 42 | Slovenia | 0.62 | 60.19 | 102 | Ukraine | -0.58 | 31.07 |
| 43 | Romania | 0.59 | 59.47 | 103 | Pakistan | -0.62 | 30.10 |
| 44 | Oman | 0.58 | 59.22 | 104 | Bhutan | -0.71 | 27.91 |
| 45 | Bulgaria | 0.55 | 58.50 | 105 | Madagascar | -0.76 | 26.70 |
| 46 | Botswana | 0.49 | 57.04 | 106 | Nepal | -0.79 | 25.97 |
| 46 | Costa Rica | 0.49 | 57.04 | 107 | Egypt | -0.80 | 25.73 |
| 46 | Peru | 0.49 | 57.04 | 107 | Lao PDR | -0.80 | 25.73 |
| 49 | Colombia | 0.45 | 56.07 | 109 | Malawi | -0.82 | 25.24 |
| 49 | Macedonia, FYR | 0.45 | 56.07 | 110 | Bolivia, Plurinational St. | -0.91 | 23.06 |
| 49 | Uruguay | 0.45 | 56.07 | 111 | Bangladesh | -0.93 | 22.57 |
| 52 | Greece | 0.40 | 54.85 | 112 | Argentina | -0.96 | 21.84 |
| 52 | Mexico | 0.40 | 54.85 | 113 | Ethiopia | -1.00 | 20.87 |
| 54 | Panama | 0.37 | 54.13 | 114 | Yemen | -1.10 | 18.45 |
| 55 | Croatia | 0.36 | 53.88 | 115 | Ecuador | -1.14 | 17.48 |
| 56 | Turkey | 0.33 | 53.16 | 116 | Algeria | -1.17 | 16.75 |
| 57 | South Africa | 0.30 | 52.43 | 117 | Iran, Islamic Rep. | -1.28 | 14.08 |
| 57 | Thailand | 0.30 | 52.43 | 118 | Zimbabwe | -1.65 | 5.10 |
| 59 | Armenia | 0.25 | 51.21 | 119 | Venezuela, Bolivarian Rep. | -1.86 | 0.00 |
| 59 | Rwanda | 0.25 | 51.21 | | | | |

SOURCE: World Bank, *Worldwide Governance Indicators*, 2016 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 2006.

1.1.5 Corruption

Corruption Perceptions Index | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Denmark | 90.00 | 100.00 | 60 | Kuwait | 41.00 | 35.53 |
| 1 | New Zealand | 90.00 | 100.00 | 60 | Tunisia | 41.00 | 35.53 |
| 3 | Finland | 89.00 | 98.68 | 60 | Turkey | 41.00 | 35.53 |
| 4 | Sweden | 88.00 | 97.37 | 64 | Brazil | 40.00 | 34.21 |
| 5 | Switzerland | 86.00 | 94.74 | 64 | China | 40.00 | 34.21 |
| 6 | Norway | 85.00 | 93.42 | 64 | India | 40.00 | 34.21 |
| 7 | Singapore | 84.00 | 92.11 | 67 | Albania | 39.00 | 32.89 |
| 8 | Netherlands | 83.00 | 90.79 | 67 | Bosnia and Herzegovina | 39.00 | 32.89 |
| 9 | Canada | 82.00 | 89.47 | 67 | Lesotho | 39.00 | 32.89 |
| 10 | Germany | 81.00 | 88.16 | 70 | Mongolia | 38.00 | 31.58 |
| 10 | Luxembourg | 81.00 | 88.16 | 70 | Panama | 38.00 | 31.58 |
| 10 | United Kingdom | 81.00 | 88.16 | 72 | Colombia | 37.00 | 30.26 |
| 13 | Australia | 79.00 | 85.53 | 72 | Indonesia | 37.00 | 30.26 |
| 14 | Iceland | 78.00 | 84.21 | 72 | Macedonia, FYR | 37.00 | 30.26 |
| 15 | Belgium | 77.00 | 82.89 | 72 | Morocco | 37.00 | 30.26 |
| 16 | Austria | 75.00 | 80.26 | 76 | Argentina | 36.00 | 28.95 |
| 17 | United States of America | 74.00 | 78.95 | 76 | El Salvador | 36.00 | 28.95 |
| 18 | Ireland | 73.00 | 77.63 | 76 | Sri Lanka | 36.00 | 28.95 |
| 19 | Japan | 72.00 | 76.32 | 79 | Peru | 35.00 | 27.63 |
| 20 | Uruguay | 71.00 | 75.00 | 79 | Philippines | 35.00 | 27.63 |
| 21 | Estonia | 70.00 | 73.68 | 79 | Thailand | 35.00 | 27.63 |
| 22 | France | 69.00 | 72.37 | 79 | Trinidad and Tobago | 35.00 | 27.63 |
| 23 | Chile | 66.00 | 68.42 | 83 | Algeria | 34.00 | 26.32 |
| 23 | United Arab Emirates | 66.00 | 68.42 | 83 | Egypt | 34.00 | 26.32 |
| 25 | Bhutan | 65.00 | 67.11 | 83 | Ethiopia | 34.00 | 26.32 |
| 26 | Israel | 64.00 | 65.79 | 86 | Armenia | 33.00 | 25.00 |
| 27 | Poland | 62.00 | 63.16 | 86 | Bolivia, Plurinational St. | 33.00 | 25.00 |
| 27 | Portugal | 62.00 | 63.16 | 86 | Viet Nam | 33.00 | 25.00 |
| 29 | Qatar | 61.00 | 61.84 | 89 | Mali | 32.00 | 23.68 |
| 29 | Slovenia | 61.00 | 61.84 | 89 | Pakistan | 32.00 | 23.68 |
| 31 | Botswana | 60.00 | 60.53 | 89 | Tanzania, United Rep. | 32.00 | 23.68 |
| 32 | Lithuania | 59.00 | 59.21 | 92 | Dominican Republic | 31.00 | 22.37 |
| 33 | Costa Rica | 58.00 | 57.89 | 92 | Ecuador | 31.00 | 22.37 |
| 33 | Spain | 58.00 | 57.89 | 92 | Malawi | 31.00 | 22.37 |
| 35 | Georgia | 57.00 | 56.58 | 95 | Azerbaijan | 30.00 | 21.05 |
| 35 | Latvia | 57.00 | 56.58 | 95 | Honduras | 30.00 | 21.05 |
| 37 | Cyprus | 55.00 | 53.95 | 95 | Lao PDR | 30.00 | 21.05 |
| 37 | Czech Republic | 55.00 | 53.95 | 95 | Mexico | 30.00 | 21.05 |
| 37 | Malta | 55.00 | 53.95 | 95 | Moldova, Rep. | 30.00 | 21.05 |
| 40 | Mauritius | 54.00 | 52.63 | 95 | Paraguay | 30.00 | 21.05 |
| 40 | Rwanda | 54.00 | 52.63 | 101 | Iran, Islamic Rep. | 29.00 | 19.74 |
| 42 | Korea, Rep. | 53.00 | 51.32 | 101 | Kazakhstan | 29.00 | 19.74 |
| 43 | Namibia | 52.00 | 50.00 | 101 | Nepal | 29.00 | 19.74 |
| 44 | Slovakia | 51.00 | 48.68 | 101 | Russian Federation | 29.00 | 19.74 |
| 45 | Croatia | 49.00 | 46.05 | 101 | Ukraine | 29.00 | 19.74 |
| 45 | Malaysia | 49.00 | 46.05 | 106 | Guatemala | 28.00 | 18.42 |
| 47 | Hungary | 48.00 | 44.74 | 106 | Kyrgyzstan | 28.00 | 18.42 |
| 47 | Jordan | 48.00 | 44.74 | 106 | Lebanon | 28.00 | 18.42 |
| 47 | Romania | 48.00 | 44.74 | 109 | Mozambique | 27.00 | 17.11 |
| 50 | Italy | 47.00 | 43.42 | 110 | Bangladesh | 26.00 | 15.79 |
| 51 | Saudi Arabia | 46.00 | 42.11 | 110 | Gambia | 26.00 | 15.79 |
| 52 | Montenegro | 45.00 | 40.79 | 110 | Kenya | 26.00 | 15.79 |
| 52 | Oman | 45.00 | 40.79 | 110 | Madagascar | 26.00 | 15.79 |
| 52 | Senegal | 45.00 | 40.79 | 110 | Nicaragua | 26.00 | 15.79 |
| 52 | South Africa | 45.00 | 40.79 | 115 | Uganda | 25.00 | 14.47 |
| 56 | Greece | 44.00 | 39.47 | 116 | Zimbabwe | 22.00 | 10.53 |
| 57 | Bahrain | 43.00 | 38.16 | 117 | Cambodia | 21.00 | 9.21 |
| 57 | Ghana | 43.00 | 38.16 | 118 | Venezuela, Bolivarian Rep. | 17.00 | 3.95 |
| 59 | Serbia | 42.00 | 36.84 | 119 | Yemen | 14.00 | 0.00 |
| 60 | Bulgaria | 41.00 | 35.53 | | | | |

SOURCE: Transparency International, *The Corruption Perceptions Index 2016* (<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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Japan | 6.23 | 100.00 | 60 | Israel | 5.19 | 70.29 |
| 2 | Malta | 5.99 | 93.14 | 62 | Peru | 5.18 | 70.00 |
| 2 | United Kingdom | 5.99 | 93.14 | 62 | Sri Lanka | 5.18 | 70.00 |
| 4 | United States of America | 5.98 | 92.86 | 64 | Norway | 5.14 | 68.86 |
| 5 | Australia | 5.92 | 91.14 | 65 | Morocco | 5.12 | 68.29 |
| 5 | Korea, Rep. | 5.92 | 91.14 | 66 | Bangladesh | 5.11 | 68.00 |
| 7 | Germany | 5.90 | 90.57 | 67 | Ghana | 5.09 | 67.43 |
| 7 | Netherlands | 5.90 | 90.57 | 68 | Greece | 5.06 | 66.57 |
| 7 | United Arab Emirates | 5.90 | 90.57 | 69 | Paraguay | 5.04 | 66.00 |
| 10 | Turkey | 5.88 | 90.00 | 70 | Ecuador | 5.02 | 65.43 |
| 11 | Belgium | 5.85 | 89.14 | 71 | Rwanda | 4.98 | 64.29 |
| 12 | Czech Republic | 5.76 | 86.57 | 72 | Georgia | 4.97 | 64.00 |
| 12 | France | 5.76 | 86.57 | 73 | Honduras | 4.95 | 63.43 |
| 14 | Estonia | 5.75 | 86.29 | 73 | Russian Federation | 4.95 | 63.43 |
| 15 | Qatar | 5.74 | 86.00 | 73 | Viet Nam | 4.95 | 63.43 |
| 16 | Spain | 5.64 | 83.14 | 76 | Bolivia, Plurinational St. | 4.94 | 63.14 |
| 17 | Kenya | 5.63 | 82.86 | 77 | Nepal | 4.91 | 62.29 |
| 18 | Singapore | 5.62 | 82.57 | 78 | Tunisia | 4.85 | 60.57 |
| 19 | Dominican Republic | 5.60 | 82.00 | 79 | Gambia | 4.84 | 60.29 |
| 20 | Austria | 5.59 | 81.71 | 79 | Iceland | 4.84 | 60.29 |
| 20 | Sweden | 5.59 | 81.71 | 79 | Lesotho | 4.84 | 60.29 |
| 22 | Colombia | 5.58 | 81.43 | 82 | Zimbabwe | 4.82 | 59.71 |
| 23 | Guatemala | 5.52 | 79.71 | 83 | Armenia | 4.81 | 59.43 |
| 23 | Slovakia | 5.52 | 79.71 | 84 | Croatia | 4.80 | 59.14 |
| 25 | Lithuania | 5.51 | 79.43 | 85 | Romania | 4.79 | 58.86 |
| 26 | New Zealand | 5.48 | 78.57 | 86 | Finland | 4.78 | 58.57 |
| 27 | South Africa | 5.46 | 78.00 | 87 | India | 4.75 | 57.71 |
| 28 | Canada | 5.45 | 77.71 | 88 | Cambodia | 4.73 | 57.14 |
| 28 | Denmark | 5.45 | 77.71 | 89 | Tanzania, United Rep. | 4.72 | 56.86 |
| 30 | Lebanon | 5.44 | 77.43 | 90 | Nicaragua | 4.70 | 56.29 |
| 31 | Latvia | 5.42 | 76.86 | 91 | Namibia | 4.67 | 55.43 |
| 31 | Panama | 5.42 | 76.86 | 92 | Bhutan | 4.64 | 54.57 |
| 33 | China | 5.41 | 76.57 | 92 | Uruguay | 4.64 | 54.57 |
| 34 | Jordan | 5.40 | 76.29 | 94 | Kazakhstan | 4.63 | 54.29 |
| 34 | Saudi Arabia | 5.40 | 76.29 | 95 | Bulgaria | 4.62 | 54.00 |
| 36 | Switzerland | 5.39 | 76.00 | 96 | Ukraine | 4.61 | 53.71 |
| 37 | Macedonia, FYR | 5.38 | 75.71 | 97 | Madagascar | 4.60 | 53.43 |
| 37 | Malaysia | 5.38 | 75.71 | 97 | Mongolia | 4.60 | 53.43 |
| 39 | Luxembourg | 5.32 | 74.00 | 97 | Oman | 4.60 | 53.43 |
| 40 | Cyprus | 5.31 | 73.71 | 100 | Malawi | 4.58 | 52.86 |
| 40 | Italy | 5.31 | 73.71 | 101 | Moldova, Rep. | 4.55 | 52.00 |
| 40 | Poland | 5.31 | 73.71 | 102 | Azerbaijan | 4.52 | 51.14 |
| 40 | Thailand | 5.31 | 73.71 | 103 | Albania | 4.50 | 50.57 |
| 40 | Uganda | 5.31 | 73.71 | 104 | Mozambique | 4.48 | 50.00 |
| 45 | Costa Rica | 5.30 | 73.43 | 105 | Pakistan | 4.47 | 49.71 |
| 45 | Mauritius | 5.30 | 73.43 | 106 | Bosnia and Herzegovina | 4.46 | 49.43 |
| 47 | Botswana | 5.27 | 72.57 | 107 | Mali | 4.43 | 48.57 |
| 47 | Indonesia | 5.27 | 72.57 | 108 | Argentina | 4.42 | 48.29 |
| 49 | Brazil | 5.26 | 72.29 | 109 | Montenegro | 4.28 | 44.29 |
| 49 | El Salvador | 5.26 | 72.29 | 110 | Yemen | 4.27 | 44.00 |
| 51 | Senegal | 5.24 | 71.71 | 110 | Egypt | 4.24 | 43.14 |
| 52 | Portugal | 5.23 | 71.43 | 111 | Iran, Islamic Rep. | 4.24 | 43.14 |
| 52 | Slovenia | 5.23 | 71.43 | 113 | Serbia | 4.23 | 42.86 |
| 54 | Mexico | 5.22 | 71.14 | 114 | Hungary | 4.16 | 40.86 |
| 54 | Trinidad and Tobago | 5.22 | 71.14 | 115 | Kyrgyzstan | 4.15 | 40.57 |
| 56 | Bahrain | 5.21 | 70.86 | 116 | Lao PDR | 4.11 | 39.43 |
| 56 | Kuwait | 5.21 | 70.86 | 117 | Ethiopia | 3.88 | 32.86 |
| 56 | Philippines | 5.21 | 70.86 | 118 | Algeria | 3.78 | 30.00 |
| 59 | Chile | 5.20 | 70.57 | 119 | Venezuela, Bolivarian Rep. | 2.73 | 0.00 |
| 60 | Ireland | 5.19 | 70.29 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

1.2.2 Ease of doing business

Ease of doing business index | 2017

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | New Zealand | 87.01 | 100.00 | 61 | Oman | 67.73 | 64.06 |
| 2 | Singapore | 85.05 | 96.35 | 62 | Morocco | 67.50 | 63.63 |
| 3 | Denmark | 84.87 | 96.01 | 63 | Turkey | 67.19 | 63.05 |
| 4 | Korea, Rep. | 84.07 | 94.52 | 64 | Panama | 66.19 | 61.19 |
| 5 | Norway | 82.82 | 92.19 | 65 | Botswana | 65.55 | 59.99 |
| 6 | United Kingdom | 82.74 | 92.04 | 66 | Bhutan | 65.37 | 59.66 |
| 7 | United States of America | 82.45 | 91.50 | 67 | South Africa | 65.20 | 59.34 |
| 8 | Sweden | 82.13 | 90.90 | 68 | Kyrgyzstan | 65.17 | 59.28 |
| 9 | Macedonia, FYR | 81.74 | 90.18 | 69 | Malta | 65.01 | 58.99 |
| 10 | Estonia | 81.05 | 88.89 | 70 | Tunisia | 64.89 | 58.76 |
| 11 | Finland | 80.84 | 88.50 | 71 | China | 64.28 | 57.62 |
| 12 | Latvia | 80.61 | 88.07 | 72 | Ukraine | 63.90 | 56.92 |
| 13 | Australia | 80.26 | 87.42 | 73 | Bosnia and Herzegovina | 63.87 | 56.86 |
| 14 | Georgia | 80.20 | 87.30 | 74 | Viet Nam | 63.83 | 56.79 |
| 15 | Germany | 79.87 | 86.69 | 75 | Qatar | 63.66 | 56.47 |
| 16 | Ireland | 79.53 | 86.06 | 76 | Guatemala | 62.93 | 55.11 |
| 17 | Austria | 78.92 | 84.92 | 77 | Uruguay | 61.85 | 53.09 |
| 18 | Iceland | 78.91 | 84.90 | 78 | Indonesia | 61.52 | 52.48 |
| 19 | Lithuania | 78.84 | 84.77 | 79 | Kenya | 61.22 | 51.92 |
| 20 | Canada | 78.57 | 84.27 | 80 | Saudi Arabia | 61.11 | 51.72 |
| 21 | Malaysia | 78.11 | 83.41 | 81 | El Salvador | 61.02 | 51.55 |
| 22 | Poland | 77.81 | 82.85 | 82 | Trinidad and Tobago | 60.99 | 51.49 |
| 23 | Portugal | 77.40 | 82.08 | 83 | Philippines | 60.40 | 50.39 |
| 24 | United Arab Emirates | 76.89 | 81.13 | 84 | Lesotho | 60.37 | 50.34 |
| 25 | Czech Republic | 76.71 | 80.80 | 85 | Kuwait | 59.55 | 48.81 |
| 26 | Netherlands | 76.38 | 80.18 | 86 | Dominican Republic | 59.35 | 48.43 |
| 27 | France | 76.27 | 79.98 | 87 | Honduras | 59.09 | 47.95 |
| 28 | Slovenia | 76.14 | 79.74 | 88 | Paraguay | 59.03 | 47.84 |
| 29 | Switzerland | 76.06 | 79.59 | 89 | Nepal | 58.88 | 47.56 |
| 30 | Spain | 75.73 | 78.97 | 90 | Ghana | 58.82 | 47.45 |
| 31 | Slovakia | 75.61 | 78.75 | 90 | Namibia | 58.82 | 47.45 |
| 32 | Japan | 75.53 | 78.60 | 92 | Sri Lanka | 58.79 | 47.39 |
| 33 | Kazakhstan | 75.09 | 77.78 | 93 | Ecuador | 57.97 | 45.86 |
| 34 | Romania | 74.26 | 76.23 | 94 | Uganda | 57.77 | 45.49 |
| 35 | Armenia | 73.63 | 75.06 | 95 | Argentina | 57.45 | 44.89 |
| 36 | Bulgaria | 73.51 | 74.83 | 96 | Jordan | 57.30 | 44.61 |
| 37 | Russian Federation | 73.19 | 74.24 | 97 | Iran, Islamic Rep. | 57.26 | 44.54 |
| 38 | Hungary | 73.07 | 74.01 | 98 | Egypt | 56.64 | 43.38 |
| 39 | Belgium | 73.00 | 73.88 | 99 | Brazil | 56.53 | 43.18 |
| 40 | Croatia | 72.99 | 73.86 | 100 | Lebanon | 55.90 | 42.00 |
| 41 | Moldova, Rep. | 72.75 | 73.42 | 101 | Nicaragua | 55.75 | 41.72 |
| 42 | Cyprus | 72.65 | 73.23 | 102 | India | 55.27 | 40.83 |
| 43 | Thailand | 72.53 | 73.01 | 103 | Cambodia | 54.79 | 39.93 |
| 44 | Mexico | 72.29 | 72.56 | 104 | Tanzania, United Rep. | 54.48 | 39.35 |
| 44 | Serbia | 72.29 | 72.56 | 105 | Malawi | 54.39 | 39.19 |
| 46 | Mauritius | 72.27 | 72.52 | 106 | Mozambique | 53.78 | 38.05 |
| 47 | Italy | 72.25 | 72.48 | 107 | Lao PDR | 53.29 | 37.14 |
| 48 | Montenegro | 72.08 | 72.17 | 108 | Mali | 52.96 | 36.52 |
| 49 | Israel | 71.65 | 71.36 | 109 | Pakistan | 51.77 | 34.30 |
| 50 | Colombia | 70.92 | 70.00 | 110 | Gambia | 51.70 | 34.17 |
| 51 | Peru | 70.25 | 68.75 | 111 | Senegal | 50.68 | 32.27 |
| 52 | Rwanda | 69.81 | 67.93 | 112 | Bolivia, Plurinational St. | 49.85 | 30.72 |
| 53 | Chile | 69.56 | 67.47 | 113 | Algeria | 47.76 | 26.83 |
| 54 | Albania | 68.90 | 66.24 | 114 | Ethiopia | 47.25 | 25.88 |
| 55 | Luxembourg | 68.81 | 66.07 | 115 | Zimbabwe | 47.10 | 25.60 |
| 56 | Greece | 68.67 | 65.81 | 116 | Madagascar | 45.10 | 21.87 |
| 57 | Costa Rica | 68.50 | 65.49 | 117 | Bangladesh | 40.84 | 13.93 |
| 58 | Bahrain | 68.44 | 65.38 | 118 | Yemen | 39.57 | 11.56 |
| 59 | Mongolia | 68.15 | 64.84 | 119 | Venezuela, Bolivarian Rep. | 33.37 | 0.00 |
| 60 | Azerbaijan | 67.99 | 64.54 | | | | |

SOURCE: World Bank, *Doing Business 2017: Equal Opportunity for All* (<http://www.doingbusiness.org/reports/global-reports/doing-business-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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | United States of America | 5.56 | 100.00 | 61 | Dominican Republic | 3.75 | 43.96 |
| 2 | United Arab Emirates | 5.42 | 95.67 | 62 | Oman | 3.74 | 43.65 |
| 3 | Germany | 5.36 | 93.81 | 62 | Philippines | 3.74 | 43.65 |
| 4 | Italy | 5.35 | 93.50 | 64 | Honduras | 3.73 | 43.34 |
| 5 | United Kingdom | 5.34 | 93.19 | 65 | Azerbaijan | 3.71 | 42.72 |
| 6 | Netherlands | 5.27 | 91.02 | 66 | Poland | 3.69 | 42.11 |
| 7 | Japan | 5.22 | 89.47 | 66 | Tanzania, United Rep. | 3.69 | 42.11 |
| 8 | Norway | 5.21 | 89.16 | 68 | Namibia | 3.67 | 41.49 |
| 9 | Qatar | 5.20 | 88.85 | 69 | Senegal | 3.66 | 41.18 |
| 10 | Luxembourg | 5.18 | 88.24 | 70 | Pakistan | 3.65 | 40.87 |
| 11 | Malaysia | 5.17 | 87.93 | 71 | Bangladesh | 3.64 | 40.56 |
| 11 | Singapore | 5.17 | 87.93 | 72 | Bulgaria | 3.63 | 40.25 |
| 13 | Switzerland | 5.14 | 87.00 | 73 | Colombia | 3.61 | 39.63 |
| 14 | Sweden | 4.99 | 82.35 | 73 | Morocco | 3.61 | 39.63 |
| 15 | Ireland | 4.95 | 81.11 | 75 | Iran, Islamic Rep. | 3.60 | 39.32 |
| 16 | Finland | 4.89 | 79.26 | 76 | Bhutan | 3.57 | 38.39 |
| 17 | Austria | 4.83 | 77.40 | 77 | Ethiopia | 3.54 | 37.46 |
| 18 | Canada | 4.72 | 73.99 | 78 | Slovenia | 3.49 | 35.91 |
| 19 | China | 4.66 | 72.14 | 78 | Trinidad and Tobago | 3.49 | 35.91 |
| 20 | Denmark | 4.64 | 71.52 | 80 | Uganda | 3.48 | 35.60 |
| 21 | Saudi Arabia | 4.63 | 71.21 | 81 | Latvia | 3.47 | 35.29 |
| 22 | Bahrain | 4.62 | 70.90 | 82 | Lesotho | 3.46 | 34.98 |
| 23 | Belgium | 4.61 | 70.59 | 83 | Mali | 3.45 | 34.67 |
| 24 | France | 4.56 | 69.04 | 84 | Botswana | 3.44 | 34.37 |
| 25 | India | 4.52 | 67.80 | 85 | Chile | 3.39 | 32.82 |
| 26 | Korea, Rep. | 4.51 | 67.49 | 86 | Hungary | 3.36 | 31.89 |
| 27 | Indonesia | 4.46 | 65.94 | 86 | Russian Federation | 3.36 | 31.89 |
| 28 | South Africa | 4.38 | 63.47 | 88 | Lithuania | 3.34 | 31.27 |
| 29 | Jordan | 4.28 | 60.37 | 89 | Armenia | 3.33 | 30.96 |
| 30 | Egypt | 4.27 | 60.06 | 90 | Uruguay | 3.27 | 29.10 |
| 31 | Spain | 4.25 | 59.44 | 91 | Ecuador | 3.26 | 28.79 |
| 32 | Israel | 4.23 | 58.82 | 92 | Peru | 3.24 | 28.17 |
| 32 | Mexico | 4.23 | 58.82 | 93 | Argentina | 3.23 | 27.86 |
| 34 | Malta | 4.21 | 58.20 | 94 | Romania | 3.22 | 27.55 |
| 35 | Panama | 4.20 | 57.89 | 95 | Tunisia | 3.18 | 26.32 |
| 36 | Kenya | 4.16 | 56.66 | 96 | El Salvador | 3.17 | 26.01 |
| 36 | Portugal | 4.16 | 56.66 | 97 | Bosnia and Herzegovina | 3.15 | 25.39 |
| 38 | Mauritius | 4.14 | 56.04 | 98 | Madagascar | 3.14 | 25.08 |
| 39 | Rwanda | 4.13 | 55.73 | 98 | Nepal | 3.14 | 25.08 |
| 40 | Iceland | 4.09 | 54.49 | 100 | Nicaragua | 3.11 | 24.15 |
| 41 | Australia | 3.97 | 50.77 | 101 | Serbia | 3.10 | 23.84 |
| 42 | Brazil | 3.96 | 50.46 | 102 | Montenegro | 3.09 | 23.53 |
| 43 | Cambodia | 3.95 | 50.15 | 103 | Mozambique | 3.07 | 22.91 |
| 43 | Ghana | 3.95 | 50.15 | 104 | Algeria | 3.05 | 22.29 |
| 45 | Kuwait | 3.94 | 49.85 | 105 | Greece | 3.01 | 21.05 |
| 45 | New Zealand | 3.94 | 49.85 | 106 | Kazakhstan | 3.00 | 20.74 |
| 47 | Costa Rica | 3.92 | 49.23 | 107 | Albania | 2.98 | 20.12 |
| 48 | Slovakia | 3.91 | 48.92 | 108 | Georgia | 2.97 | 19.81 |
| 49 | Lao PDR | 3.89 | 48.30 | 109 | Croatia | 2.96 | 19.50 |
| 50 | Viet Nam | 3.85 | 47.06 | 109 | Kyrgyzstan | 2.96 | 19.50 |
| 51 | Guatemala | 3.84 | 46.75 | 111 | Ukraine | 2.95 | 19.20 |
| 51 | Macedonia, FYR | 3.84 | 46.75 | 112 | Yemen | 2.94 | 18.89 |
| 53 | Lebanon | 3.83 | 46.44 | 113 | Paraguay | 2.91 | 17.96 |
| 54 | Turkey | 3.82 | 46.13 | 114 | Malawi | 2.87 | 16.72 |
| 55 | Cyprus | 3.80 | 45.51 | 115 | Bolivia, Plurinational St. | 2.85 | 16.10 |
| 55 | Czech Republic | 3.80 | 45.51 | 116 | Mongolia | 2.73 | 12.38 |
| 57 | Gambia | 3.79 | 45.20 | 117 | Zimbabwe | 2.71 | 11.76 |
| 58 | Sri Lanka | 3.78 | 44.89 | 118 | Venezuela, Bolivarian Rep. | 2.47 | 4.33 |
| 59 | Thailand | 3.77 | 44.58 | 119 | Moldova, Rep. | 2.33 | 0.00 |
| 60 | Estonia | 3.76 | 44.27 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

1.2.4 R&D expenditure

Gross expenditure on R&D (%) | 2014

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Korea, Rep. | 4.29 | 100.00 | 60 | Qatar | .047 | 10.75 |
| 2 | Israel | 4.11 | 95.79 | 62 | Macedonia, FYR | .044 | 10.05 |
| 3 | Japan | 3.58 | 83.41 | 63 | Jordan | .043 | 9.81 |
| 4 | Finland | 3.17 | 73.83 | 64 | Mozambique | .042 | 9.58 |
| 5 | Sweden | 3.16 | 73.60 | 65 | Chile | .038 | 8.64 |
| 6 | Denmark | 3.08 | 71.73 | 65 | Ghana | .038 | 8.64 |
| 7 | Austria | 2.99 | 69.63 | 65 | Romania | .038 | 8.64 |
| 8 | Switzerland | 2.97 | 69.16 | 68 | Moldova, Rep. | .037 | 8.41 |
| 9 | Germany | 2.87 | 66.82 | 69 | Montenegro | .036 | 8.18 |
| 10 | United States of America | 2.73 | 63.55 | 70 | Ecuador | .034 | 7.71 |
| 11 | Belgium | 2.46 | 57.24 | 71 | Iran, Islamic Rep. | .033 | 7.48 |
| 12 | Slovenia | 2.39 | 55.61 | 71 | Uruguay | .033 | 7.48 |
| 13 | France | 2.26 | 52.57 | 73 | Kuwait | .030 | 6.78 |
| 14 | Australia | 2.20 | 51.17 | 73 | Nepal | .030 | 6.78 |
| 15 | Singapore | 2.19 | 50.93 | 75 | Pakistan | .029 | 6.54 |
| 16 | China | 2.05 | 47.66 | 76 | Bosnia and Herzegovina | .026 | 5.84 |
| 17 | Czech Republic | 2.00 | 46.50 | 77 | Botswana | .025 | 5.61 |
| 18 | Netherlands | 1.97 | 45.79 | 78 | Armenia | .024 | 5.37 |
| 19 | Iceland | 1.89 | 43.93 | 79 | Mongolia | .023 | 5.14 |
| 20 | Norway | 1.71 | 39.72 | 80 | Azerbaijan | .021 | 4.67 |
| 21 | United Kingdom | 1.70 | 39.49 | 81 | Colombia | .020 | 4.44 |
| 22 | Canada | 1.61 | 37.38 | 82 | Viet Nam | .019 | 4.21 |
| 23 | Ireland | 1.52 | 35.28 | 83 | Mauritius | .018 | 3.97 |
| 24 | Estonia | 1.44 | 33.41 | 84 | Kazakhstan | .017 | 3.74 |
| 25 | Hungary | 1.37 | 31.78 | 84 | Oman | .017 | 3.74 |
| 26 | Italy | 1.29 | 29.91 | 86 | Bolivia, Plurinational St. | .016 | 3.50 |
| 26 | Portugal | 1.29 | 29.91 | 87 | Albania | .015 | 3.27 |
| 28 | Luxembourg | 1.26 | 29.21 | 88 | Namibia | .014 | 3.04 |
| 28 | Malaysia | 1.26 | 29.21 | 88 | Philippines | .014 | 3.04 |
| 30 | Brazil | 1.24 | 28.74 | 90 | Gambia | .013 | 2.80 |
| 31 | Spain | 1.23 | 28.50 | 90 | Kyrgyzstan | .013 | 2.80 |
| 32 | Russian Federation | 1.19 | 27.57 | 92 | Bahrain | .010 | 2.10 |
| 33 | New Zealand | 1.17 | 27.10 | 92 | Georgia | .010 | 2.10 |
| 34 | Lithuania | 1.01 | 23.36 | 92 | Sri Lanka | .010 | 2.10 |
| 34 | Turkey | 1.01 | 23.36 | 95 | El Salvador | .008 | 1.64 |
| 36 | Poland | 0.94 | 21.73 | 95 | Indonesia | .008 | 1.64 |
| 37 | Slovakia | 0.89 | 20.56 | 95 | Trinidad and Tobago | .008 | 1.64 |
| 38 | Malta | 0.85 | 19.63 | 98 | Panama | .007 | 1.40 |
| 39 | Greece | 0.84 | 19.39 | 98 | Saudi Arabia | .007 | 1.40 |
| 40 | India | 0.82 | 18.93 | 100 | Guatemala | .004 | 0.70 |
| 41 | Bulgaria | 0.80 | 18.46 | 101 | Madagascar | .002 | 0.23 |
| 42 | Croatia | 0.79 | 18.22 | 102 | Lesotho | .001 | 0.00 |
| 42 | Kenya | 0.79 | 18.22 | | Algeria | n/a | n/a |
| 44 | Serbia | 0.78 | 17.99 | | Bangladesh | n/a | n/a |
| 45 | South Africa | 0.73 | 16.82 | | Bhutan | n/a | n/a |
| 46 | Morocco | 0.71 | 16.36 | | Cambodia | n/a | n/a |
| 47 | United Arab Emirates | 0.70 | 16.12 | | Dominican Republic | n/a | n/a |
| 48 | Latvia | 0.69 | 15.89 | | Honduras | n/a | n/a |
| 49 | Egypt | 0.68 | 15.65 | | Lao PDR | n/a | n/a |
| 50 | Ukraine | 0.66 | 15.19 | | Lebanon | n/a | n/a |
| 51 | Tunisia | 0.64 | 14.72 | | Malawi | n/a | n/a |
| 52 | Argentina | 0.61 | 14.02 | | Mali | n/a | n/a |
| 53 | Ethiopia | 0.60 | 13.79 | | Nicaragua | n/a | n/a |
| 54 | Costa Rica | 0.56 | 12.85 | | Paraguay | n/a | n/a |
| 55 | Mexico | 0.54 | 12.38 | | Peru | n/a | n/a |
| 55 | Senegal | 0.54 | 12.38 | | Rwanda | n/a | n/a |
| 57 | Tanzania, United Rep. | 0.53 | 12.15 | | Venezuela, Bolivarian Rep. | n/a | n/a |
| 58 | Thailand | 0.48 | 10.98 | | Yemen | n/a | n/a |
| 58 | Uganda | 0.48 | 10.98 | | Zimbabwe | n/a | n/a |
| 60 | Cyprus | 0.47 | 10.75 | | | | |

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 2006.

1.2.5 ICT infrastructure

ICT access index | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Korea, Rep. | 8.84 | 100.00 | 61 | Turkey | 5.69 | 57.03 |
| 2 | Iceland | 8.83 | 99.86 | 62 | Armenia | 5.60 | 55.80 |
| 3 | Denmark | 8.74 | 98.64 | 63 | Georgia | 5.59 | 55.66 |
| 4 | Switzerland | 8.68 | 97.82 | 64 | Mauritius | 5.55 | 55.12 |
| 5 | United Kingdom | 8.57 | 96.32 | 65 | Ukraine | 5.33 | 52.11 |
| 6 | Sweden | 8.45 | 94.68 | 66 | Venezuela, Bolivarian Rep. | 5.27 | 51.30 |
| 7 | Netherlands | 8.43 | 94.41 | 67 | Bosnia and Herzegovina | 5.25 | 51.02 |
| 8 | Norway | 8.42 | 94.27 | 68 | China | 5.19 | 50.20 |
| 9 | Japan | 8.37 | 93.59 | 69 | Thailand | 5.18 | 50.07 |
| 10 | Luxembourg | 8.36 | 93.45 | 70 | Colombia | 5.16 | 49.80 |
| 11 | Germany | 8.31 | 92.77 | 71 | Jordan | 5.06 | 48.43 |
| 12 | New Zealand | 8.29 | 92.50 | 72 | South Africa | 5.03 | 48.02 |
| 13 | Australia | 8.19 | 91.13 | 73 | Iran, Islamic Rep. | 4.99 | 47.48 |
| 14 | United States of America | 8.17 | 90.86 | 74 | Mongolia | 4.95 | 46.93 |
| 15 | France | 8.11 | 90.04 | 75 | Albania | 4.92 | 46.52 |
| 16 | Finland | 8.08 | 89.63 | 76 | Mexico | 4.87 | 45.84 |
| 17 | Estonia | 8.07 | 89.50 | 76 | Panama | 4.87 | 45.84 |
| 18 | Singapore | 7.95 | 87.86 | 78 | Tunisia | 4.83 | 45.29 |
| 19 | Ireland | 7.92 | 87.45 | 79 | Morocco | 4.60 | 42.16 |
| 20 | Belgium | 7.83 | 86.22 | 80 | Ecuador | 4.56 | 41.61 |
| 21 | Austria | 7.69 | 84.31 | 81 | Egypt | 4.44 | 39.97 |
| 21 | Malta | 7.69 | 84.31 | 82 | Peru | 4.42 | 39.70 |
| 23 | Canada | 7.62 | 83.36 | 83 | Algeria | 4.40 | 39.43 |
| 23 | Spain | 7.62 | 83.36 | 84 | Dominican Republic | 4.30 | 38.06 |
| 25 | Bahrain | 7.46 | 81.17 | 85 | Viet Nam | 4.29 | 37.93 |
| 26 | Israel | 7.40 | 80.35 | 86 | Philippines | 4.28 | 37.79 |
| 27 | Czech Republic | 7.25 | 78.31 | 87 | Botswana | 4.17 | 36.29 |
| 28 | Slovenia | 7.23 | 78.04 | 88 | Paraguay | 4.08 | 35.06 |
| 29 | Greece | 7.13 | 76.67 | 89 | Bolivia, Plurinational St. | 4.02 | 34.24 |
| 30 | Italy | 7.11 | 76.40 | 90 | Ghana | 3.99 | 33.83 |
| 30 | United Arab Emirates | 7.11 | 76.40 | 90 | Kyrgyzstan | 3.99 | 33.83 |
| 32 | Lithuania | 7.10 | 76.26 | 92 | Indonesia | 3.86 | 32.06 |
| 33 | Latvia | 7.08 | 75.99 | 93 | Sri Lanka | 3.77 | 30.83 |
| 34 | Croatia | 7.04 | 75.44 | 94 | Bhutan | 3.74 | 30.42 |
| 35 | Slovakia | 6.96 | 74.35 | 95 | El Salvador | 3.73 | 30.29 |
| 36 | Russian Federation | 6.95 | 74.22 | 96 | Namibia | 3.64 | 29.06 |
| 37 | Portugal | 6.94 | 74.08 | 97 | Guatemala | 3.20 | 23.06 |
| 38 | Qatar | 6.90 | 73.53 | 98 | Cambodia | 3.12 | 21.96 |
| 38 | Saudi Arabia | 6.90 | 73.53 | 99 | Honduras | 3.09 | 21.56 |
| 40 | Uruguay | 6.79 | 72.03 | 100 | Kenya | 2.99 | 20.19 |
| 41 | Hungary | 6.72 | 71.08 | 101 | Nicaragua | 2.88 | 18.69 |
| 42 | Bulgaria | 6.69 | 70.67 | 102 | Zimbabwe | 2.78 | 17.33 |
| 43 | Poland | 6.65 | 70.12 | 103 | Lesotho | 2.76 | 17.05 |
| 44 | Serbia | 6.58 | 69.17 | 104 | India | 2.69 | 16.10 |
| 45 | Kazakhstan | 6.57 | 69.03 | 105 | Senegal | 2.53 | 13.92 |
| 46 | Kuwait | 6.54 | 68.62 | 106 | Nepal | 2.50 | 13.51 |
| 47 | Cyprus | 6.53 | 68.49 | 107 | Gambia | 2.46 | 12.96 |
| 48 | Argentina | 6.52 | 68.35 | 108 | Lao PDR | 2.45 | 12.82 |
| 49 | Chile | 6.35 | 66.03 | 109 | Bangladesh | 2.35 | 11.46 |
| 50 | Costa Rica | 6.30 | 65.35 | 109 | Pakistan | 2.35 | 11.46 |
| 51 | Azerbaijan | 6.28 | 65.08 | 111 | Mali | 2.14 | 8.59 |
| 52 | Oman | 6.27 | 64.94 | 112 | Rwanda | 2.13 | 8.46 |
| 53 | Romania | 6.26 | 64.80 | 113 | Yemen | 2.02 | 6.96 |
| 54 | Malaysia | 6.22 | 64.26 | 114 | Uganda | 1.94 | 5.87 |
| 55 | Montenegro | 6.05 | 61.94 | 115 | Mozambique | 1.75 | 3.27 |
| 56 | Brazil | 5.99 | 61.12 | 116 | Madagascar | 1.69 | 2.46 |
| 57 | Macedonia, FYR | 5.97 | 60.85 | 117 | Tanzania, United Rep. | 1.65 | 1.91 |
| 58 | Lebanon | 5.93 | 60.30 | 118 | Malawi | 1.62 | 1.50 |
| 59 | Trinidad and Tobago | 5.76 | 57.98 | 119 | Ethiopia | 1.51 | 0.00 |
| 60 | Moldova, Rep. | 5.75 | 57.84 | | | | |

SOURCE: International Telecommunication Union, *Measuring the Information Society Report 2016*, ICT Development Index 2016 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2016.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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Switzerland | 6.10 | 100.00 | 61 | Brazil | 4.55 | 45.23 |
| 2 | Sweden | 6.04 | 97.88 | 62 | Namibia | 4.54 | 44.88 |
| 3 | Iceland | 6.01 | 96.82 | 63 | Macedonia, FYR | 4.51 | 43.82 |
| 4 | Norway | 5.97 | 95.41 | 64 | Lebanon | 4.47 | 42.40 |
| 4 | United States of America | 5.97 | 95.41 | 65 | Honduras | 4.46 | 42.05 |
| 6 | Finland | 5.86 | 91.52 | 66 | Kazakhstan | 4.45 | 41.70 |
| 7 | United Arab Emirates | 5.84 | 90.81 | 67 | Mongolia | 4.44 | 41.34 |
| 8 | Netherlands | 5.82 | 90.11 | 68 | Greece | 4.43 | 40.99 |
| 9 | United Kingdom | 5.79 | 89.05 | 68 | Ukraine | 4.43 | 40.99 |
| 10 | Denmark | 5.73 | 86.93 | 70 | Bosnia and Herzegovina | 4.42 | 40.64 |
| 11 | Qatar | 5.68 | 85.16 | 71 | Botswana | 4.40 | 39.93 |
| 12 | Germany | 5.67 | 84.81 | 72 | Albania | 4.38 | 39.22 |
| 12 | Luxembourg | 5.67 | 84.81 | 72 | Latvia | 4.38 | 39.22 |
| 12 | Singapore | 5.67 | 84.81 | 72 | Viet Nam | 4.38 | 39.22 |
| 15 | Israel | 5.66 | 84.45 | 75 | India | 4.36 | 38.52 |
| 16 | New Zealand | 5.59 | 81.98 | 75 | Kuwait | 4.36 | 38.52 |
| 17 | Japan | 5.55 | 80.57 | 77 | Colombia | 4.34 | 37.81 |
| 18 | Malaysia | 5.46 | 77.39 | 78 | Croatia | 4.33 | 37.46 |
| 19 | Austria | 5.44 | 76.68 | 78 | Russian Federation | 4.33 | 37.46 |
| 20 | Belgium | 5.43 | 76.33 | 80 | Madagascar | 4.29 | 36.04 |
| 20 | South Africa | 5.43 | 76.33 | 80 | Romania | 4.29 | 36.04 |
| 22 | Australia | 5.39 | 74.91 | 82 | Armenia | 4.26 | 34.98 |
| 22 | Estonia | 5.39 | 74.91 | 83 | Gambia | 4.24 | 34.28 |
| 22 | Ireland | 5.39 | 74.91 | 84 | Bangladesh | 4.23 | 33.92 |
| 25 | Lithuania | 5.34 | 73.14 | 84 | Montenegro | 4.23 | 33.92 |
| 26 | Panama | 5.33 | 72.79 | 86 | Trinidad and Tobago | 4.22 | 33.57 |
| 27 | Korea, Rep. | 5.32 | 72.44 | 87 | Ecuador | 4.21 | 33.22 |
| 28 | Portugal | 5.30 | 71.73 | 87 | Ghana | 4.21 | 33.22 |
| 29 | Canada | 5.27 | 70.67 | 89 | Cambodia | 4.20 | 32.86 |
| 30 | Malta | 5.25 | 69.96 | 89 | Peru | 4.20 | 32.86 |
| 31 | France | 5.15 | 66.43 | 89 | Tanzania, United Rep. | 4.20 | 32.86 |
| 32 | Chile | 5.13 | 65.72 | 92 | Cyprus | 4.17 | 31.80 |
| 33 | Kenya | 5.11 | 65.02 | 93 | Uganda | 4.14 | 30.74 |
| 34 | Bahrain | 5.08 | 63.96 | 94 | Argentina | 4.13 | 30.39 |
| 35 | Czech Republic | 5.07 | 63.60 | 95 | Lao PDR | 4.11 | 29.68 |
| 36 | Jordan | 5.05 | 62.90 | 95 | Tunisia | 4.11 | 29.68 |
| 37 | Indonesia | 5.00 | 61.13 | 97 | El Salvador | 4.04 | 27.21 |
| 38 | Guatemala | 4.95 | 59.36 | 98 | Georgia | 4.02 | 26.50 |
| 39 | Costa Rica | 4.94 | 59.01 | 99 | Bhutan | 3.98 | 25.09 |
| 40 | Slovakia | 4.92 | 58.30 | 99 | Moldova, Rep. | 3.98 | 25.09 |
| 40 | Thailand | 4.92 | 58.30 | 101 | Pakistan | 3.92 | 22.97 |
| 42 | Saudi Arabia | 4.89 | 57.24 | 102 | Mali | 3.90 | 22.26 |
| 43 | Senegal | 4.88 | 56.89 | 102 | Paraguay | 3.90 | 22.26 |
| 44 | Slovenia | 4.86 | 56.18 | 102 | Zimbabwe | 3.90 | 22.26 |
| 45 | Turkey | 4.80 | 54.06 | 105 | Mozambique | 3.86 | 20.85 |
| 46 | Azerbaijan | 4.77 | 53.00 | 106 | Venezuela, Bolivarian Rep. | 3.85 | 20.49 |
| 47 | Mauritius | 4.75 | 52.30 | 107 | Serbia | 3.84 | 20.14 |
| 48 | Rwanda | 4.74 | 51.94 | 108 | Iran, Islamic Rep. | 3.72 | 15.90 |
| 48 | Spain | 4.74 | 51.94 | 109 | Bolivia, Plurinational St. | 3.67 | 14.13 |
| 50 | Philippines | 4.70 | 50.53 | 110 | Algeria | 3.63 | 12.72 |
| 51 | Poland | 4.68 | 49.82 | 111 | Nepal | 3.59 | 11.31 |
| 52 | Bulgaria | 4.67 | 49.47 | 112 | Ethiopia | 3.50 | 8.13 |
| 52 | Oman | 4.67 | 49.47 | 113 | Lesotho | 3.46 | 6.71 |
| 54 | Uruguay | 4.62 | 47.70 | 114 | Malawi | 3.42 | 5.30 |
| 55 | Dominican Republic | 4.61 | 47.35 | 115 | Kyrgyzstan | 3.41 | 4.95 |
| 56 | China | 4.60 | 47.00 | 116 | Hungary | 3.38 | 3.89 |
| 57 | Mexico | 4.59 | 46.64 | 117 | Yemen | 3.27 | 0.00 |
| 58 | Sri Lanka | 4.58 | 46.29 | | Egypt | n/a | n/a |
| 59 | Italy | 4.56 | 45.58 | | Nicaragua | n/a | n/a |
| 59 | Morocco | 4.56 | 45.58 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

1.3.1 Ease of hiring

Hiring indicators | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|--------|-------|
| 1 | Azerbaijan | 0.00 | 100.00 | 51 | Mexico | 33.33 | 66.67 |
| 1 | Bahrain | 0.00 | 100.00 | 51 | Nicaragua | 33.33 | 66.67 |
| 1 | Bangladesh | 0.00 | 100.00 | 51 | Romania | 33.33 | 66.67 |
| 1 | Bhutan | 0.00 | 100.00 | 51 | Slovakia | 33.33 | 66.67 |
| 1 | Botswana | 0.00 | 100.00 | 51 | Sweden | 33.33 | 66.67 |
| 1 | Denmark | 0.00 | 100.00 | 51 | Zimbabwe | 33.33 | 66.67 |
| 1 | Egypt | 0.00 | 100.00 | 67 | Lao PDR | 39.00 | 61.00 |
| 1 | Gambia | 0.00 | 100.00 | 67 | Tunisia | 39.00 | 61.00 |
| 1 | Kazakhstan | 0.00 | 100.00 | 69 | Albania | 44.33 | 55.67 |
| 1 | Kuwait | 0.00 | 100.00 | 69 | Algeria | 44.33 | 55.67 |
| 1 | Lithuania | 0.00 | 100.00 | 69 | Armenia | 44.33 | 55.67 |
| 1 | Malaysia | 0.00 | 100.00 | 69 | Croatia | 44.33 | 55.67 |
| 1 | Mongolia | 0.00 | 100.00 | 69 | Cyprus | 44.33 | 55.67 |
| 1 | Namibia | 0.00 | 100.00 | 69 | Dominican Republic | 44.33 | 55.67 |
| 1 | Qatar | 0.00 | 100.00 | 69 | El Salvador | 44.33 | 55.67 |
| 1 | Rwanda | 0.00 | 100.00 | 69 | Finland | 44.33 | 55.67 |
| 1 | Saudi Arabia | 0.00 | 100.00 | 69 | Germany | 44.33 | 55.67 |
| 1 | Singapore | 0.00 | 100.00 | 69 | Greece | 44.33 | 55.67 |
| 1 | Sri Lanka | 0.00 | 100.00 | 69 | Iceland | 44.33 | 55.67 |
| 1 | Switzerland | 0.00 | 100.00 | 69 | Korea, Rep. | 44.33 | 55.67 |
| 1 | Trinidad and Tobago | 0.00 | 100.00 | 69 | Lebanon | 44.33 | 55.67 |
| 1 | Uganda | 0.00 | 100.00 | 69 | Mauritius | 44.33 | 55.67 |
| 1 | United Arab Emirates | 0.00 | 100.00 | 69 | Moldova, Rep. | 44.33 | 55.67 |
| 1 | United States of America | 0.00 | 100.00 | 69 | Montenegro | 44.33 | 55.67 |
| 25 | Australia | 11.00 | 89.00 | 69 | Peru | 44.33 | 55.67 |
| 25 | Austria | 11.00 | 89.00 | 69 | Portugal | 44.33 | 55.67 |
| 25 | Belgium | 11.00 | 89.00 | 69 | Russian Federation | 44.33 | 55.67 |
| 25 | Canada | 11.00 | 89.00 | 69 | South Africa | 44.33 | 55.67 |
| 25 | China | 11.00 | 89.00 | 69 | Tanzania, United Rep. | 44.33 | 55.67 |
| 25 | Colombia | 11.00 | 89.00 | 69 | Thailand | 44.33 | 55.67 |
| 25 | Czech Republic | 11.00 | 89.00 | 69 | Turkey | 44.33 | 55.67 |
| 25 | Ghana | 11.00 | 89.00 | 69 | Ukraine | 44.33 | 55.67 |
| 25 | Hungary | 11.00 | 89.00 | 69 | Uruguay | 44.33 | 55.67 |
| 25 | Iran, Islamic Rep. | 11.00 | 89.00 | 94 | Argentina | 55.67 | 44.33 |
| 25 | Ireland | 11.00 | 89.00 | 94 | Bosnia and Herzegovina | 55.67 | 44.33 |
| 25 | Israel | 11.00 | 89.00 | 94 | Ecuador | 55.67 | 44.33 |
| 25 | Japan | 11.00 | 89.00 | 94 | Guatemala | 55.67 | 44.33 |
| 25 | Jordan | 11.00 | 89.00 | 94 | Mali | 55.67 | 44.33 |
| 25 | New Zealand | 11.00 | 89.00 | 94 | Paraguay | 55.67 | 44.33 |
| 25 | Oman | 11.00 | 89.00 | 100 | Norway | 61.00 | 39.00 |
| 25 | Poland | 11.00 | 89.00 | 101 | Malawi | 66.67 | 33.33 |
| 25 | United Kingdom | 11.00 | 89.00 | 101 | Mozambique | 66.67 | 33.33 |
| 25 | Yemen | 11.00 | 89.00 | 101 | Nepal | 66.67 | 33.33 |
| 44 | Netherlands | 16.67 | 83.33 | 104 | Indonesia | 72.33 | 27.67 |
| 45 | Macedonia, FYR | 22.33 | 77.67 | 105 | Brazil | 77.67 | 22.33 |
| 45 | Philippines | 22.33 | 77.67 | 105 | Costa Rica | 77.67 | 22.33 |
| 45 | Viet Nam | 22.33 | 77.67 | 105 | France | 77.67 | 22.33 |
| 48 | Bulgaria | 27.67 | 72.33 | 105 | Luxembourg | 77.67 | 22.33 |
| 48 | Italy | 27.67 | 72.33 | 105 | Panama | 77.67 | 22.33 |
| 48 | Malta | 27.67 | 72.33 | 105 | Serbia | 77.67 | 22.33 |
| 51 | Cambodia | 33.33 | 66.67 | 105 | Slovenia | 77.67 | 22.33 |
| 51 | Chile | 33.33 | 66.67 | 105 | Spain | 77.67 | 22.33 |
| 51 | Estonia | 33.33 | 66.67 | 105 | Venezuela, Bolivarian Rep. | 77.67 | 22.33 |
| 51 | Ethiopia | 33.33 | 66.67 | 114 | Bolivia, Plurinational St. | 89.00 | 11.00 |
| 51 | Georgia | 33.33 | 66.67 | 114 | Pakistan | 89.00 | 11.00 |
| 51 | India | 33.33 | 66.67 | 116 | Honduras | 100.00 | 0.00 |
| 51 | Kenya | 33.33 | 66.67 | 116 | Madagascar | 100.00 | 0.00 |
| 51 | Kyrgyzstan | 33.33 | 66.67 | 116 | Morocco | 100.00 | 0.00 |
| 51 | Latvia | 33.33 | 66.67 | 116 | Senegal | 100.00 | 0.00 |
| 51 | Lesotho | 33.33 | 66.67 | | | | |

SOURCE: World Bank, *Doing Business 2016: Measuring Regulatory Quality and Efficiency* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2016>)
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 2006.

1.3.2 Ease of redundancy

Redundancy indicators | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|--------|-------|
| 1 | Argentina | 0.00 | 100.00 | 44 | Spain | 20.00 | 80.00 |
| 1 | Belgium | 0.00 | 100.00 | 44 | Trinidad and Tobago | 20.00 | 80.00 |
| 1 | Brazil | 0.00 | 100.00 | 63 | Bosnia and Herzegovina | 30.00 | 70.00 |
| 1 | Bulgaria | 0.00 | 100.00 | 63 | Cambodia | 30.00 | 70.00 |
| 1 | Canada | 0.00 | 100.00 | 63 | Ethiopia | 30.00 | 70.00 |
| 1 | Colombia | 0.00 | 100.00 | 63 | Greece | 30.00 | 70.00 |
| 1 | Costa Rica | 0.00 | 100.00 | 63 | Kazakhstan | 30.00 | 70.00 |
| 1 | Czech Republic | 0.00 | 100.00 | 63 | Kenya | 30.00 | 70.00 |
| 1 | Denmark | 0.00 | 100.00 | 63 | Korea, Rep. | 30.00 | 70.00 |
| 1 | Dominican Republic | 0.00 | 100.00 | 63 | Lebanon | 30.00 | 70.00 |
| 1 | El Salvador | 0.00 | 100.00 | 63 | Luxembourg | 30.00 | 70.00 |
| 1 | Georgia | 0.00 | 100.00 | 63 | Norway | 30.00 | 70.00 |
| 1 | Guatemala | 0.00 | 100.00 | 63 | Pakistan | 30.00 | 70.00 |
| 1 | Hungary | 0.00 | 100.00 | 63 | Philippines | 30.00 | 70.00 |
| 1 | Iceland | 0.00 | 100.00 | 63 | Romania | 30.00 | 70.00 |
| 1 | Israel | 0.00 | 100.00 | 63 | Rwanda | 30.00 | 70.00 |
| 1 | Kuwait | 0.00 | 100.00 | 63 | Slovakia | 30.00 | 70.00 |
| 1 | Kyrgyzstan | 0.00 | 100.00 | 63 | South Africa | 30.00 | 70.00 |
| 1 | Lesotho | 0.00 | 100.00 | 63 | Viet Nam | 30.00 | 70.00 |
| 1 | Macedonia, FYR | 0.00 | 100.00 | 63 | Yemen | 30.00 | 70.00 |
| 1 | Mongolia | 0.00 | 100.00 | 81 | Algeria | 40.00 | 60.00 |
| 1 | Nicaragua | 0.00 | 100.00 | 81 | Austria | 40.00 | 60.00 |
| 1 | Oman | 0.00 | 100.00 | 81 | Bangladesh | 40.00 | 60.00 |
| 1 | Qatar | 0.00 | 100.00 | 81 | Botswana | 40.00 | 60.00 |
| 1 | Saudi Arabia | 0.00 | 100.00 | 81 | Croatia | 40.00 | 60.00 |
| 1 | Singapore | 0.00 | 100.00 | 81 | Cyprus | 40.00 | 60.00 |
| 1 | Switzerland | 0.00 | 100.00 | 81 | France | 40.00 | 60.00 |
| 1 | Thailand | 0.00 | 100.00 | 81 | Gambia | 40.00 | 60.00 |
| 1 | Uganda | 0.00 | 100.00 | 81 | Germany | 40.00 | 60.00 |
| 1 | United Arab Emirates | 0.00 | 100.00 | 81 | India | 40.00 | 60.00 |
| 1 | United Kingdom | 0.00 | 100.00 | 81 | Madagascar | 40.00 | 60.00 |
| 1 | United States of America | 0.00 | 100.00 | 81 | Mali | 40.00 | 60.00 |
| 1 | Uruguay | 0.00 | 100.00 | 81 | Moldova, Rep. | 40.00 | 60.00 |
| 34 | Albania | 10.00 | 90.00 | 81 | Portugal | 40.00 | 60.00 |
| 34 | Armenia | 10.00 | 90.00 | 81 | Russian Federation | 40.00 | 60.00 |
| 34 | Australia | 10.00 | 90.00 | 81 | Senegal | 40.00 | 60.00 |
| 34 | Azerbaijan | 10.00 | 90.00 | 81 | Sweden | 40.00 | 60.00 |
| 34 | Ireland | 10.00 | 90.00 | 98 | China | 50.00 | 50.00 |
| 34 | Japan | 10.00 | 90.00 | 98 | Ghana | 50.00 | 50.00 |
| 34 | Malaysia | 10.00 | 90.00 | 98 | Iran, Islamic Rep. | 50.00 | 50.00 |
| 34 | New Zealand | 10.00 | 90.00 | 98 | Italy | 50.00 | 50.00 |
| 34 | Slovenia | 10.00 | 90.00 | 98 | Morocco | 50.00 | 50.00 |
| 34 | Turkey | 10.00 | 90.00 | 98 | Tanzania, United Rep. | 50.00 | 50.00 |
| 44 | Bahrain | 20.00 | 80.00 | 98 | Ukraine | 50.00 | 50.00 |
| 44 | Bhutan | 20 | 80.00 | 105 | Egypt | 60.00 | 40.00 |
| 44 | Chile | 20.00 | 80.00 | 105 | Honduras | 60.00 | 40.00 |
| 44 | Ecuador | 20.00 | 80.00 | 105 | Indonesia | 60.00 | 40.00 |
| 44 | Estonia | 20.00 | 80.00 | 105 | Jordan | 60.00 | 40.00 |
| 44 | Finland | 20.00 | 80.00 | 105 | Panama | 60.00 | 40.00 |
| 44 | Lao PDR | 20.00 | 80.00 | 105 | Paraguay | 60.00 | 40.00 |
| 44 | Latvia | 20.00 | 80.00 | 105 | Peru | 60.00 | 40.00 |
| 44 | Lithuania | 20.00 | 80.00 | 105 | Sri Lanka | 60.00 | 40.00 |
| 44 | Malawi | 20.00 | 80.00 | 105 | Zimbabwe | 60.00 | 40.00 |
| 44 | Malta | 20.00 | 80.00 | 114 | Mexico | 70.00 | 30.00 |
| 44 | Mauritius | 20.00 | 80.00 | 114 | Nepal | 70.00 | 30.00 |
| 44 | Montenegro | 20.00 | 80.00 | 114 | Netherlands | 70.00 | 30.00 |
| 44 | Mozambique | 20.00 | 80.00 | 117 | Tunisia | 80.00 | 20.00 |
| 44 | Namibia | 20.00 | 80.00 | 118 | Bolivia, Plurinational St. | 100.00 | 0.00 |
| 44 | Poland | 20.00 | 80.00 | 118 | Venezuela, Bolivarian Rep. | 100.00 | 0.00 |
| 44 | Serbia | 20.00 | 80.00 | | | | |

SOURCE: World Bank, *Doing Business 2016: Measuring Regulatory Quality and Efficiency* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2016>)
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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Switzerland | 5.77 | 100.00 | 61 | Kenya | 3.44 | 59.56 |
| 2 | Singapore | 5.62 | 97.45 | 62 | Spain | 3.43 | 59.48 |
| 3 | Luxembourg | 5.33 | 92.34 | 63 | Pakistan | 3.43 | 59.43 |
| 4 | Iceland | 5.18 | 89.74 | 64 | Montenegro | 3.42 | 59.32 |
| 5 | Qatar | 5.07 | 87.85 | 65 | Slovakia | 3.40 | 58.90 |
| 6 | Austria | 5.05 | 87.48 | 66 | Kuwait | 3.34 | 57.98 |
| 7 | Malaysia | 5.01 | 86.84 | 67 | Chile | 3.34 | 57.96 |
| 8 | Germany | 4.91 | 85.13 | 68 | Cambodia | 3.33 | 57.68 |
| 9 | Norway | 4.90 | 84.87 | 69 | Iran, Islamic Rep. | 3.29 | 57.08 |
| 10 | Netherlands | 4.89 | 84.74 | 70 | Turkey | 3.28 | 56.89 |
| 11 | Denmark | 4.78 | 82.91 | 71 | Botswana | 3.25 | 56.33 |
| 12 | New Zealand | 4.76 | 82.46 | 72 | Tanzania, United Rep. | 3.22 | 55.89 |
| 13 | Canada | 4.73 | 81.95 | 73 | Philippines | 3.22 | 55.73 |
| 14 | United Arab Emirates | 4.71 | 81.59 | 74 | Ghana | 3.21 | 55.57 |
| 15 | Belgium | 4.67 | 81.01 | 75 | Colombia | 3.19 | 55.35 |
| 16 | Estonia | 4.63 | 80.33 | 76 | Lesotho | 3.19 | 55.34 |
| 17 | Malta | 4.57 | 79.17 | 77 | Argentina | 3.16 | 54.70 |
| 18 | Finland | 4.57 | 79.13 | 78 | Mexico | 3.13 | 54.24 |
| 19 | China | 4.54 | 78.64 | 79 | Poland | 3.10 | 53.75 |
| 20 | Ireland | 4.49 | 77.75 | 80 | Senegal | 3.08 | 53.41 |
| 21 | United Kingdom | 4.48 | 77.74 | 81 | Guatemala | 3.08 | 53.33 |
| 22 | United States of America | 4.46 | 77.28 | 82 | Mongolia | 3.05 | 52.87 |
| 23 | Sweden | 4.40 | 76.27 | 83 | Croatia | 3.04 | 52.62 |
| 24 | Bahrain | 4.38 | 75.86 | 84 | Algeria | 3.04 | 52.61 |
| 25 | Australia | 4.35 | 75.44 | 85 | Serbia | 3.00 | 52.00 |
| 26 | India | 4.28 | 74.22 | 86 | Trinidad and Tobago | 2.99 | 51.84 |
| 27 | Japan | 4.18 | 72.39 | 87 | Dominican Republic | 2.97 | 51.52 |
| 28 | Kazakhstan | 4.13 | 71.63 | 88 | Paraguay | 2.96 | 51.32 |
| 29 | Indonesia | 4.08 | 70.78 | 89 | Armenia | 2.96 | 51.28 |
| 30 | Panama | 4.05 | 70.23 | 90 | Tunisia | 2.89 | 50.12 |
| 31 | Saudi Arabia | 4.03 | 69.93 | 91 | Italy | 2.85 | 49.36 |
| 32 | Czech Republic | 4.03 | 69.85 | 92 | Hungary | 2.82 | 48.88 |
| 33 | Bhutan | 4.02 | 69.64 | 93 | Namibia | 2.80 | 48.48 |
| 34 | Israel | 3.98 | 69.06 | 94 | Moldova, Rep. | 2.79 | 48.34 |
| 35 | Mauritius | 3.96 | 68.63 | 95 | Georgia | 2.76 | 47.76 |
| 36 | Ukraine | 3.92 | 68.03 | 96 | Kyrgyzstan | 2.75 | 47.71 |
| 37 | Azerbaijan | 3.91 | 67.74 | 97 | Morocco | 2.75 | 47.61 |
| 38 | Oman | 3.88 | 67.17 | 98 | El Salvador | 2.74 | 47.48 |
| 39 | Thailand | 3.85 | 66.77 | 99 | Brazil | 2.74 | 47.43 |
| 40 | Jordan | 3.85 | 66.76 | 100 | Uganda | 2.73 | 47.34 |
| 41 | Latvia | 3.85 | 66.68 | 101 | Peru | 2.73 | 47.29 |
| 42 | Uruguay | 3.83 | 66.44 | 102 | Greece | 2.73 | 47.27 |
| 43 | Lao PDR | 3.82 | 66.20 | 103 | Bangladesh | 2.71 | 46.96 |
| 44 | Russian Federation | 3.82 | 66.18 | 104 | South Africa | 2.67 | 46.37 |
| 45 | Ethiopia | 3.78 | 65.60 | 105 | Ecuador | 2.66 | 46.10 |
| 46 | Mali | 3.78 | 65.54 | 106 | Honduras | 2.66 | 46.03 |
| 47 | Slovenia | 3.77 | 65.38 | 107 | Bosnia and Herzegovina | 2.65 | 46.01 |
| 48 | Lithuania | 3.77 | 65.26 | 108 | Lebanon | 2.60 | 45.07 |
| 49 | Rwanda | 3.75 | 65.04 | 109 | Albania | 2.58 | 44.70 |
| 50 | Korea, Rep. | 3.74 | 64.83 | 110 | Nepal | 2.57 | 44.57 |
| 51 | Macedonia, FYR | 3.70 | 64.11 | 111 | Bolivia, Plurinational St. | 2.56 | 44.39 |
| 52 | Portugal | 3.67 | 63.67 | 112 | Venezuela, Bolivarian Rep. | 2.33 | 40.44 |
| 53 | Costa Rica | 3.66 | 63.40 | 113 | Mozambique | 2.33 | 40.33 |
| 54 | Bulgaria | 3.60 | 62.40 | 114 | Malawi | 2.30 | 39.90 |
| 55 | France | 3.57 | 61.82 | 115 | Madagascar | 2.25 | 39.00 |
| 56 | Cyprus | 3.55 | 61.60 | 116 | Zimbabwe | 1.92 | 33.31 |
| 57 | Romania | 3.55 | 61.53 | 117 | Yemen | 1.89 | 32.78 |
| 58 | Gambia | 3.50 | 60.67 | 118 | Egypt | 0.00 | 0.00 |
| 59 | Sri Lanka | 3.49 | 60.49 | 118 | Nicaragua | 0.00 | 0.00 |
| 60 | Viet Nam | 3.45 | 59.76 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

1.3.4 Labour-employer cooperation

Average answer to the question: In your country, how would you characterise labour-employer relations? [1 = generally confrontational; 7 = generally cooperative] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Norway | 6.23 | 100.00 | 60 | India | 4.39 | 50.14 |
| 2 | Singapore | 6.17 | 98.37 | 62 | Botswana | 4.37 | 49.59 |
| 2 | Switzerland | 6.17 | 98.37 | 62 | Mongolia | 4.37 | 49.59 |
| 4 | Denmark | 6.07 | 95.66 | 64 | Cambodia | 4.36 | 49.32 |
| 4 | Sweden | 6.07 | 95.66 | 64 | Dominican Republic | 4.36 | 49.32 |
| 6 | Netherlands | 5.86 | 89.97 | 64 | Nicaragua | 4.36 | 49.32 |
| 7 | Japan | 5.76 | 87.26 | 67 | Peru | 4.33 | 48.51 |
| 8 | Austria | 5.73 | 86.45 | 67 | Slovenia | 4.33 | 48.51 |
| 9 | New Zealand | 5.71 | 85.91 | 69 | Senegal | 4.29 | 47.43 |
| 10 | United Arab Emirates | 5.67 | 84.82 | 70 | Paraguay | 4.28 | 47.15 |
| 11 | Luxembourg | 5.63 | 83.74 | 70 | Spain | 4.28 | 47.15 |
| 12 | Iceland | 5.57 | 82.11 | 70 | Viet Nam | 4.28 | 47.15 |
| 13 | Qatar | 5.53 | 81.03 | 73 | Macedonia, FYR | 4.27 | 46.88 |
| 14 | United Kingdom | 5.43 | 78.32 | 74 | Hungary | 4.26 | 46.61 |
| 15 | Malaysia | 5.34 | 75.88 | 75 | Mali | 4.25 | 46.34 |
| 16 | Rwanda | 5.32 | 75.34 | 76 | Lebanon | 4.24 | 46.07 |
| 17 | Ireland | 5.31 | 75.07 | 77 | Slovakia | 4.23 | 45.80 |
| 18 | Canada | 5.24 | 73.17 | 78 | Georgia | 4.21 | 45.26 |
| 19 | Bahrain | 5.20 | 72.09 | 79 | Bangladesh | 4.19 | 44.72 |
| 20 | Finland | 5.18 | 71.54 | 79 | Bulgaria | 4.19 | 44.72 |
| 21 | Costa Rica | 5.16 | 71.00 | 79 | Ukraine | 4.19 | 44.72 |
| 21 | Estonia | 5.16 | 71.00 | 82 | Poland | 4.18 | 44.44 |
| 23 | Germany | 5.11 | 69.65 | 83 | Kenya | 4.17 | 44.17 |
| 24 | Bhutan | 5.06 | 68.29 | 83 | Madagascar | 4.17 | 44.17 |
| 24 | Guatemala | 5.06 | 68.29 | 85 | Egypt | 4.13 | 43.09 |
| 24 | Philippines | 5.06 | 68.29 | 86 | Kyrgyzstan | 4.11 | 42.55 |
| 27 | Albania | 5.05 | 68.02 | 86 | Moldova, Rep. | 4.11 | 42.55 |
| 28 | United States of America | 5.03 | 67.48 | 88 | Malawi | 4.09 | 42.01 |
| 29 | Israel | 5.02 | 67.21 | 88 | Russian Federation | 4.09 | 42.01 |
| 30 | Malta | 4.92 | 64.50 | 90 | Greece | 4.05 | 40.92 |
| 31 | Saudi Arabia | 4.86 | 62.87 | 91 | Romania | 4.04 | 40.65 |
| 32 | Latvia | 4.80 | 61.25 | 92 | Zimbabwe | 3.97 | 38.75 |
| 33 | Mauritius | 4.79 | 60.98 | 93 | El Salvador | 3.95 | 38.21 |
| 34 | Belgium | 4.77 | 60.43 | 94 | France | 3.94 | 37.94 |
| 34 | Thailand | 4.77 | 60.43 | 95 | Italy | 3.89 | 36.59 |
| 36 | Honduras | 4.76 | 60.16 | 96 | Montenegro | 3.88 | 36.31 |
| 37 | Armenia | 4.75 | 59.89 | 97 | Yemen | 3.86 | 35.77 |
| 38 | Panama | 4.74 | 59.62 | 98 | Algeria | 3.79 | 33.88 |
| 39 | Jordan | 4.72 | 59.08 | 98 | Tanzania, United Rep. | 3.79 | 33.88 |
| 40 | Czech Republic | 4.68 | 57.99 | 100 | Brazil | 3.77 | 33.33 |
| 40 | Indonesia | 4.68 | 57.99 | 100 | Ethiopia | 3.77 | 33.33 |
| 42 | Lao PDR | 4.64 | 56.91 | 102 | Turkey | 3.76 | 33.06 |
| 43 | China | 4.62 | 56.37 | 103 | Lesotho | 3.73 | 32.25 |
| 44 | Colombia | 4.60 | 55.83 | 104 | Argentina | 3.71 | 31.71 |
| 45 | Azerbaijan | 4.58 | 55.28 | 104 | Morocco | 3.71 | 31.71 |
| 45 | Uganda | 4.58 | 55.28 | 104 | Mozambique | 3.71 | 31.71 |
| 47 | Mexico | 4.57 | 55.01 | 107 | Iran, Islamic Rep. | 3.70 | 31.44 |
| 47 | Portugal | 4.57 | 55.01 | 108 | Bosnia and Herzegovina | 3.66 | 30.35 |
| 49 | Sri Lanka | 4.56 | 54.74 | 108 | Serbia | 3.66 | 30.35 |
| 50 | Australia | 4.55 | 54.47 | 110 | Tunisia | 3.62 | 29.27 |
| 51 | Oman | 4.54 | 54.20 | 111 | Venezuela, Bolivarian Rep. | 3.56 | 27.64 |
| 52 | Kuwait | 4.53 | 53.93 | 112 | Nepal | 3.52 | 26.56 |
| 53 | Chile | 4.50 | 53.12 | 113 | Bolivia, Plurinational St. | 3.50 | 26.02 |
| 54 | Ghana | 4.47 | 52.30 | 113 | Croatia | 3.50 | 26.02 |
| 54 | Kazakhstan | 4.47 | 52.30 | 115 | Pakistan | 3.40 | 23.31 |
| 54 | Lithuania | 4.47 | 52.30 | 116 | Korea, Rep. | 3.39 | 23.04 |
| 57 | Namibia | 4.45 | 51.76 | 117 | Uruguay | 3.37 | 22.49 |
| 58 | Ecuador | 4.41 | 50.68 | 118 | Trinidad and Tobago | 3.16 | 16.80 |
| 59 | Cyprus | 4.40 | 50.41 | 119 | South Africa | 2.54 | 0.00 |
| 60 | Gambia | 4.39 | 50.14 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

1.3.5 Professional management

Average answer to the question: In your country, who holds senior management positions? [1 = usually relatives or friends without regard to merit; 7 = mostly professional managers chosen for merit and qualifications] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Finland | 6.32 | 100.00 | 60 | India | 4.31 | 42.41 |
| 2 | Sweden | 6.26 | 98.28 | 60 | Venezuela, Bolivarian Rep. | 4.31 | 42.41 |
| 3 | New Zealand | 6.24 | 97.71 | 63 | Kenya | 4.30 | 42.12 |
| 4 | Singapore | 6.23 | 97.42 | 64 | Panama | 4.29 | 41.83 |
| 5 | Norway | 6.22 | 97.13 | 65 | Slovenia | 4.28 | 41.55 |
| 6 | Ireland | 6.21 | 96.85 | 66 | Mexico | 4.26 | 40.97 |
| 6 | Netherlands | 6.21 | 96.85 | 67 | Jordan | 4.20 | 39.26 |
| 8 | Switzerland | 6.15 | 95.13 | 68 | Senegal | 4.13 | 37.25 |
| 9 | United Kingdom | 6.07 | 92.84 | 69 | Portugal | 4.11 | 36.68 |
| 10 | Belgium | 6.01 | 91.12 | 70 | Azerbaijan | 4.08 | 35.82 |
| 11 | Australia | 5.96 | 89.68 | 70 | Colombia | 4.08 | 35.82 |
| 11 | United States of America | 5.96 | 89.68 | 72 | Turkey | 4.02 | 34.10 |
| 13 | Denmark | 5.94 | 89.11 | 73 | Albania | 4.01 | 33.81 |
| 14 | Canada | 5.79 | 84.81 | 74 | Uganda | 4.00 | 33.52 |
| 15 | Germany | 5.73 | 83.09 | 75 | Morocco | 3.98 | 32.95 |
| 16 | Japan | 5.72 | 82.81 | 76 | Lao PDR | 3.96 | 32.38 |
| 17 | Luxembourg | 5.71 | 82.52 | 77 | Tanzania, United Rep. | 3.95 | 32.09 |
| 18 | United Arab Emirates | 5.57 | 78.51 | 78 | Armenia | 3.94 | 31.81 |
| 19 | Malaysia | 5.55 | 77.94 | 78 | Russian Federation | 3.94 | 31.81 |
| 20 | Iceland | 5.54 | 77.65 | 80 | Romania | 3.93 | 31.52 |
| 21 | South Africa | 5.53 | 77.36 | 81 | Lebanon | 3.91 | 30.95 |
| 22 | France | 5.51 | 76.79 | 82 | Croatia | 3.86 | 29.51 |
| 23 | Austria | 5.50 | 76.50 | 83 | Tunisia | 3.84 | 28.94 |
| 24 | Israel | 5.41 | 73.93 | 84 | Greece | 3.80 | 27.79 |
| 25 | Estonia | 5.35 | 72.21 | 85 | Kazakhstan | 3.79 | 27.51 |
| 26 | Qatar | 5.34 | 71.92 | 86 | Cambodia | 3.78 | 27.22 |
| 27 | Czech Republic | 5.28 | 70.20 | 87 | Honduras | 3.76 | 26.65 |
| 28 | Korea, Rep. | 4.93 | 60.17 | 88 | Ecuador | 3.75 | 26.36 |
| 29 | Rwanda | 4.90 | 59.31 | 89 | Bulgaria | 3.71 | 25.21 |
| 30 | Bahrain | 4.79 | 56.16 | 89 | Italy | 3.71 | 25.21 |
| 31 | Ghana | 4.74 | 54.73 | 89 | Madagascar | 3.71 | 25.21 |
| 31 | Saudi Arabia | 4.74 | 54.73 | 92 | Bangladesh | 3.70 | 24.93 |
| 33 | Philippines | 4.72 | 54.15 | 93 | Viet Nam | 3.65 | 23.50 |
| 33 | Spain | 4.72 | 54.15 | 94 | Ethiopia | 3.64 | 23.21 |
| 35 | Chile | 4.69 | 53.30 | 95 | Hungary | 3.63 | 22.92 |
| 36 | Lithuania | 4.68 | 53.01 | 95 | Lesotho | 3.63 | 22.92 |
| 37 | Indonesia | 4.66 | 52.44 | 97 | Macedonia, FYR | 3.62 | 22.64 |
| 38 | Zimbabwe | 4.65 | 52.15 | 98 | Montenegro | 3.61 | 22.35 |
| 39 | Botswana | 4.64 | 51.86 | 99 | Mongolia | 3.57 | 21.20 |
| 40 | Trinidad and Tobago | 4.62 | 51.29 | 100 | El Salvador | 3.56 | 20.92 |
| 41 | Costa Rica | 4.58 | 50.14 | 101 | Ukraine | 3.55 | 20.63 |
| 41 | Namibia | 4.58 | 50.14 | 102 | Moldova, Rep. | 3.53 | 20.06 |
| 41 | Sri Lanka | 4.58 | 50.14 | 103 | Cyprus | 3.51 | 19.48 |
| 44 | Gambia | 4.56 | 49.57 | 103 | Dominican Republic | 3.51 | 19.48 |
| 44 | Thailand | 4.56 | 49.57 | 105 | Pakistan | 3.40 | 16.33 |
| 46 | Malta | 4.53 | 48.71 | 106 | Paraguay | 3.39 | 16.05 |
| 47 | Mauritius | 4.52 | 48.42 | 107 | Mali | 3.38 | 15.76 |
| 47 | Slovakia | 4.52 | 48.42 | 107 | Nepal | 3.38 | 15.76 |
| 49 | Malawi | 4.51 | 48.14 | 109 | Kuwait | 3.37 | 15.47 |
| 49 | Peru | 4.51 | 48.14 | 110 | Mozambique | 3.33 | 14.33 |
| 51 | Bhutan | 4.48 | 47.28 | 111 | Bolivia, Plurinational St. | 3.32 | 14.04 |
| 51 | China | 4.48 | 47.28 | 112 | Iran, Islamic Rep. | 3.26 | 12.32 |
| 51 | Georgia | 4.48 | 47.28 | 112 | Kyrgyzstan | 3.26 | 12.32 |
| 54 | Argentina | 4.46 | 46.70 | 112 | Serbia | 3.26 | 12.32 |
| 54 | Brazil | 4.46 | 46.70 | 115 | Nicaragua | 3.24 | 11.75 |
| 54 | Oman | 4.46 | 46.70 | 116 | Egypt | 3.13 | 8.60 |
| 57 | Latvia | 4.36 | 43.84 | 117 | Bosnia and Herzegovina | 3.09 | 7.45 |
| 58 | Poland | 4.32 | 42.69 | 118 | Algeria | 2.97 | 4.01 |
| 58 | Uruguay | 4.32 | 42.69 | 119 | Yemen | 2.83 | 0.00 |
| 60 | Guatemala | 4.31 | 42.41 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Switzerland | 5.62 | 100.00 | 61 | Panama | 4.01 | 45.79 |
| 2 | Singapore | 5.50 | 95.96 | 62 | Portugal | 4.00 | 45.45 |
| 3 | Qatar | 5.35 | 90.91 | 63 | Croatia | 3.98 | 44.78 |
| 4 | United Arab Emirates | 5.32 | 89.90 | 64 | Bulgaria | 3.96 | 44.11 |
| 5 | Malaysia | 5.30 | 89.23 | 65 | Honduras | 3.94 | 43.43 |
| 6 | Ireland | 5.26 | 87.88 | 66 | Slovenia | 3.92 | 42.76 |
| 7 | United States of America | 5.16 | 84.51 | 67 | Trinidad and Tobago | 3.90 | 42.09 |
| 8 | New Zealand | 5.08 | 81.82 | 68 | Kenya | 3.89 | 41.75 |
| 9 | Germany | 5.04 | 80.47 | 69 | Georgia | 3.88 | 41.41 |
| 10 | Denmark | 4.98 | 78.45 | 70 | Moldova, Rep. | 3.85 | 40.40 |
| 11 | Estonia | 4.97 | 78.11 | 71 | Ecuador | 3.83 | 39.73 |
| 12 | Canada | 4.95 | 77.44 | 72 | Ethiopia | 3.82 | 39.39 |
| 13 | Iceland | 4.92 | 76.43 | 72 | Mexico | 3.82 | 39.39 |
| 14 | Norway | 4.89 | 75.42 | 72 | Oman | 3.82 | 39.39 |
| 15 | Korea, Rep. | 4.84 | 73.74 | 75 | Peru | 3.81 | 39.06 |
| 16 | Finland | 4.83 | 73.40 | 76 | Bangladesh | 3.73 | 36.36 |
| 17 | United Kingdom | 4.80 | 72.39 | 76 | Cyprus | 3.73 | 36.36 |
| 18 | Luxembourg | 4.75 | 70.71 | 78 | Colombia | 3.72 | 36.03 |
| 19 | Czech Republic | 4.74 | 70.37 | 78 | Greece | 3.72 | 36.03 |
| 20 | Bahrain | 4.71 | 69.36 | 78 | Montenegro | 3.72 | 36.03 |
| 21 | Belgium | 4.69 | 68.69 | 81 | Brazil | 3.71 | 35.69 |
| 22 | Japan | 4.68 | 68.35 | 81 | Namibia | 3.71 | 35.69 |
| 23 | Australia | 4.67 | 68.01 | 81 | Romania | 3.71 | 35.69 |
| 23 | Netherlands | 4.67 | 68.01 | 84 | Senegal | 3.67 | 34.34 |
| 25 | China | 4.61 | 65.99 | 85 | Turkey | 3.65 | 33.67 |
| 26 | Indonesia | 4.60 | 65.66 | 86 | Lesotho | 3.64 | 33.33 |
| 26 | Israel | 4.60 | 65.66 | 86 | Mongolia | 3.64 | 33.33 |
| 28 | Austria | 4.57 | 64.65 | 88 | Pakistan | 3.63 | 33.00 |
| 28 | Sweden | 4.57 | 64.65 | 88 | South Africa | 3.63 | 33.00 |
| 30 | India | 4.54 | 63.64 | 90 | Ghana | 3.62 | 32.66 |
| 31 | Azerbaijan | 4.49 | 61.95 | 91 | Botswana | 3.61 | 32.32 |
| 31 | Lao PDR | 4.49 | 61.95 | 92 | Malawi | 3.59 | 31.65 |
| 33 | Costa Rica | 4.48 | 61.62 | 93 | Spain | 3.58 | 31.31 |
| 34 | Kazakhstan | 4.47 | 61.28 | 94 | Argentina | 3.52 | 29.29 |
| 34 | Philippines | 4.47 | 61.28 | 94 | Serbia | 3.52 | 29.29 |
| 34 | Saudi Arabia | 4.47 | 61.28 | 94 | Uganda | 3.52 | 29.29 |
| 37 | Albania | 4.44 | 60.27 | 97 | Hungary | 3.49 | 28.28 |
| 38 | Russian Federation | 4.43 | 59.93 | 98 | Tanzania, United Rep. | 3.47 | 27.61 |
| 39 | Malta | 4.42 | 59.60 | 99 | Kuwait | 3.46 | 27.27 |
| 39 | Slovakia | 4.42 | 59.60 | 99 | Madagascar | 3.46 | 27.27 |
| 39 | Ukraine | 4.42 | 59.60 | 101 | Iran, Islamic Rep. | 3.42 | 25.93 |
| 42 | Rwanda | 4.39 | 58.59 | 101 | Morocco | 3.42 | 25.93 |
| 43 | Lithuania | 4.38 | 58.25 | 101 | Nicaragua | 3.42 | 25.93 |
| 44 | Sri Lanka | 4.35 | 57.24 | 104 | Nepal | 3.30 | 21.89 |
| 45 | Macedonia, FYR | 4.32 | 56.23 | 104 | Uruguay | 3.30 | 21.89 |
| 46 | Latvia | 4.30 | 55.56 | 104 | Yemen | 3.30 | 21.89 |
| 47 | Chile | 4.28 | 54.88 | 107 | Mali | 3.27 | 20.88 |
| 47 | Mauritius | 4.28 | 54.88 | 108 | Algeria | 3.26 | 20.54 |
| 49 | Thailand | 4.27 | 54.55 | 109 | Zimbabwe | 3.25 | 20.20 |
| 50 | France | 4.25 | 53.87 | 110 | Dominican Republic | 3.23 | 19.53 |
| 50 | Kyrgyzstan | 4.25 | 53.87 | 111 | Egypt | 3.20 | 18.52 |
| 52 | Gambia | 4.21 | 52.53 | 112 | Paraguay | 3.18 | 17.85 |
| 52 | Jordan | 4.21 | 52.53 | 113 | Italy | 3.13 | 16.16 |
| 54 | Guatemala | 4.18 | 51.52 | 114 | El Salvador | 3.09 | 14.81 |
| 55 | Bhutan | 4.15 | 50.51 | 115 | Bolivia, Plurinational St. | 3.08 | 14.48 |
| 56 | Lebanon | 4.12 | 49.49 | 116 | Bosnia and Herzegovina | 3.06 | 13.80 |
| 57 | Armenia | 4.11 | 49.16 | 117 | Tunisia | 3.00 | 11.78 |
| 58 | Poland | 4.06 | 47.47 | 118 | Mozambique | 2.89 | 8.08 |
| 59 | Cambodia | 4.03 | 46.46 | 119 | Venezuela, Bolivarian Rep. | 2.65 | 0.00 |
| 59 | Viet Nam | 4.03 | 46.46 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<http://reports.weforum.org>)

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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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Ireland | 6.31 | 100.00 | 61 | Latvia | 4.43 | 50.91 |
| 2 | Singapore | 5.92 | 89.82 | 62 | Hungary | 4.41 | 50.39 |
| 3 | Luxembourg | 5.67 | 83.29 | 62 | Romania | 4.41 | 50.39 |
| 3 | United Arab Emirates | 5.67 | 83.29 | 64 | Colombia | 4.38 | 49.61 |
| 5 | Panama | 5.55 | 80.16 | 65 | Egypt | 4.37 | 49.35 |
| 6 | Israel | 5.45 | 77.55 | 66 | Namibia | 4.36 | 49.09 |
| 7 | Qatar | 5.44 | 77.28 | 67 | Montenegro | 4.30 | 47.52 |
| 8 | Malaysia | 5.39 | 75.98 | 68 | Uganda | 4.28 | 47.00 |
| 9 | Switzerland | 5.35 | 74.93 | 69 | Armenia | 4.27 | 46.74 |
| 10 | Belgium | 5.32 | 74.15 | 69 | Sri Lanka | 4.27 | 46.74 |
| 11 | Netherlands | 5.29 | 73.37 | 71 | Trinidad and Tobago | 4.24 | 45.95 |
| 12 | United Kingdom | 5.28 | 73.11 | 72 | Ghana | 4.23 | 45.69 |
| 13 | Norway | 5.27 | 72.85 | 72 | Tunisia | 4.23 | 45.69 |
| 14 | Slovakia | 5.26 | 72.58 | 74 | Iceland | 4.22 | 45.43 |
| 15 | Costa Rica | 5.18 | 70.50 | 75 | Viet Nam | 4.20 | 44.91 |
| 16 | Chile | 5.15 | 69.71 | 76 | Iran, Islamic Rep. | 4.16 | 43.86 |
| 16 | Germany | 5.15 | 69.71 | 77 | Oman | 4.13 | 43.08 |
| 18 | Portugal | 5.14 | 69.45 | 78 | Pakistan | 4.12 | 42.82 |
| 19 | Canada | 5.13 | 69.19 | 79 | Cyprus | 4.09 | 42.04 |
| 19 | Malta | 5.13 | 69.19 | 79 | Nicaragua | 4.09 | 42.04 |
| 21 | Mexico | 5.07 | 67.62 | 81 | Macedonia, FYR | 4.08 | 41.78 |
| 22 | Czech Republic | 5.06 | 67.36 | 82 | Lao PDR | 4.05 | 40.99 |
| 22 | Lithuania | 5.06 | 67.36 | 82 | Paraguay | 4.05 | 40.99 |
| 24 | United States of America | 5.05 | 67.10 | 84 | Gambia | 4.04 | 40.73 |
| 25 | Sweden | 5.01 | 66.06 | 85 | Botswana | 4.03 | 40.47 |
| 26 | Spain | 5.00 | 65.80 | 86 | Mongolia | 4.01 | 39.95 |
| 27 | France | 4.96 | 64.75 | 87 | Kazakhstan | 4.00 | 39.69 |
| 28 | New Zealand | 4.93 | 63.97 | 88 | Tanzania, United Rep. | 3.99 | 39.43 |
| 28 | Uruguay | 4.93 | 63.97 | 89 | Georgia | 3.98 | 39.16 |
| 30 | Denmark | 4.91 | 63.45 | 90 | Slovenia | 3.96 | 38.64 |
| 31 | Bahrain | 4.87 | 62.40 | 91 | Moldova, Rep. | 3.93 | 37.86 |
| 31 | Japan | 4.87 | 62.40 | 92 | Mozambique | 3.92 | 37.60 |
| 33 | Rwanda | 4.81 | 60.84 | 93 | Ethiopia | 3.90 | 37.08 |
| 33 | Saudi Arabia | 4.81 | 60.84 | 94 | Senegal | 3.89 | 36.81 |
| 35 | Azerbaijan | 4.78 | 60.05 | 95 | Greece | 3.88 | 36.55 |
| 36 | Australia | 4.76 | 59.53 | 96 | Italy | 3.85 | 35.77 |
| 37 | Estonia | 4.75 | 59.27 | 97 | Mali | 3.82 | 34.99 |
| 38 | Albania | 4.73 | 58.75 | 98 | El Salvador | 3.79 | 34.20 |
| 38 | Dominican Republic | 4.73 | 58.75 | 99 | Madagascar | 3.76 | 33.42 |
| 38 | Thailand | 4.73 | 58.75 | 100 | Serbia | 3.74 | 32.90 |
| 41 | Bulgaria | 4.70 | 57.96 | 101 | Bangladesh | 3.67 | 31.07 |
| 42 | Peru | 4.69 | 57.70 | 101 | Russian Federation | 3.67 | 31.07 |
| 43 | Austria | 4.65 | 56.66 | 103 | Croatia | 3.66 | 30.81 |
| 43 | Jordan | 4.65 | 56.66 | 104 | Ukraine | 3.65 | 30.55 |
| 45 | Kenya | 4.64 | 56.40 | 105 | Kuwait | 3.62 | 29.77 |
| 45 | Poland | 4.64 | 56.40 | 106 | Ecuador | 3.60 | 29.24 |
| 47 | Indonesia | 4.62 | 55.87 | 107 | Bhutan | 3.59 | 28.98 |
| 48 | Honduras | 4.59 | 55.09 | 108 | Algeria | 3.55 | 27.94 |
| 48 | South Africa | 4.59 | 55.09 | 109 | Bosnia and Herzegovina | 3.51 | 26.89 |
| 50 | Cambodia | 4.58 | 54.83 | 109 | Lebanon | 3.51 | 26.89 |
| 51 | India | 4.57 | 54.57 | 111 | Bolivia, Plurinational St. | 3.45 | 25.33 |
| 52 | Finland | 4.56 | 54.31 | 112 | Kyrgyzstan | 3.32 | 21.93 |
| 52 | Guatemala | 4.56 | 54.31 | 113 | Lesotho | 3.29 | 21.15 |
| 52 | Korea, Rep. | 4.56 | 54.31 | 114 | Malawi | 3.26 | 20.37 |
| 55 | China | 4.55 | 54.05 | 115 | Nepal | 3.23 | 19.58 |
| 55 | Morocco | 4.55 | 54.05 | 116 | Argentina | 3.08 | 15.67 |
| 57 | Mauritius | 4.52 | 53.26 | 117 | Zimbabwe | 2.82 | 8.88 |
| 58 | Philippines | 4.50 | 52.74 | 118 | Yemen | 2.80 | 8.36 |
| 59 | Brazil | 4.46 | 51.70 | 119 | Venezuela, Bolivarian Rep. | 2.48 | 0.00 |
| 59 | Turkey | 4.46 | 51.70 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | United Kingdom | 6.20 | 100.00 | 61 | India | 4.45 | 56.79 |
| 2 | Ireland | 6.17 | 99.26 | 62 | Lao PDR | 4.44 | 56.54 |
| 3 | Luxembourg | 6.12 | 98.02 | 63 | Jordan | 4.43 | 56.30 |
| 4 | Singapore | 6.07 | 96.79 | 63 | Nicaragua | 4.43 | 56.30 |
| 5 | Czech Republic | 5.99 | 94.81 | 63 | Trinidad and Tobago | 4.43 | 56.30 |
| 6 | Slovakia | 5.93 | 93.33 | 66 | Honduras | 4.42 | 56.05 |
| 7 | Panama | 5.83 | 90.86 | 67 | Sri Lanka | 4.40 | 55.56 |
| 8 | Estonia | 5.77 | 89.38 | 68 | Azerbaijan | 4.39 | 55.31 |
| 9 | United Arab Emirates | 5.66 | 86.67 | 69 | Lithuania | 4.37 | 54.81 |
| 10 | Australia | 5.58 | 84.69 | 70 | El Salvador | 4.33 | 53.83 |
| 10 | Belgium | 5.58 | 84.69 | 70 | Korea, Rep. | 4.33 | 53.83 |
| 12 | France | 5.54 | 83.70 | 72 | Paraguay | 4.31 | 53.33 |
| 13 | Canada | 5.51 | 82.96 | 73 | Romania | 4.29 | 52.84 |
| 14 | Chile | 5.48 | 82.22 | 74 | Argentina | 4.27 | 52.35 |
| 15 | Bahrain | 5.46 | 81.73 | 75 | Bulgaria | 4.26 | 52.10 |
| 16 | Sweden | 5.45 | 81.48 | 76 | Viet Nam | 4.25 | 51.85 |
| 16 | Switzerland | 5.45 | 81.48 | 77 | Tanzania, United Rep. | 4.24 | 51.60 |
| 18 | Denmark | 5.41 | 80.49 | 78 | Brazil | 4.20 | 50.62 |
| 19 | Netherlands | 5.40 | 80.25 | 79 | Georgia | 4.19 | 50.37 |
| 20 | Japan | 5.33 | 78.52 | 79 | Greece | 4.19 | 50.37 |
| 21 | Mexico | 5.32 | 78.27 | 79 | Lesotho | 4.19 | 50.37 |
| 21 | New Zealand | 5.32 | 78.27 | 82 | Macedonia, FYR | 4.16 | 49.63 |
| 23 | Botswana | 5.26 | 76.79 | 83 | Madagascar | 4.15 | 49.38 |
| 23 | Uganda | 5.26 | 76.79 | 83 | Oman | 4.15 | 49.38 |
| 25 | Norway | 5.25 | 76.54 | 85 | Serbia | 4.14 | 49.14 |
| 26 | Malaysia | 5.20 | 75.31 | 86 | Montenegro | 4.10 | 48.15 |
| 27 | South Africa | 5.16 | 74.32 | 86 | Tunisia | 4.10 | 48.15 |
| 28 | United States of America | 5.10 | 72.84 | 88 | Croatia | 4.08 | 47.65 |
| 29 | Costa Rica | 5.09 | 72.59 | 88 | Turkey | 4.08 | 47.65 |
| 29 | Latvia | 5.09 | 72.59 | 90 | Armenia | 4.06 | 47.16 |
| 29 | Spain | 5.09 | 72.59 | 91 | Cyprus | 4.04 | 46.67 |
| 29 | Uruguay | 5.09 | 72.59 | 92 | Kazakhstan | 4.03 | 46.42 |
| 33 | Namibia | 5.08 | 72.35 | 93 | Zimbabwe | 3.96 | 44.69 |
| 33 | Poland | 5.08 | 72.35 | 94 | Albania | 3.90 | 43.21 |
| 35 | Ghana | 5.07 | 72.10 | 95 | Mongolia | 3.86 | 42.22 |
| 36 | Dominican Republic | 5.06 | 71.85 | 96 | Ethiopia | 3.84 | 41.73 |
| 37 | Finland | 5.05 | 71.60 | 97 | Lebanon | 3.82 | 41.23 |
| 38 | Austria | 5.02 | 70.86 | 98 | Italy | 3.77 | 40.00 |
| 38 | Israel | 5.02 | 70.86 | 99 | Bangladesh | 3.76 | 39.75 |
| 40 | Peru | 4.99 | 70.12 | 100 | Saudi Arabia | 3.69 | 38.02 |
| 41 | Germany | 4.93 | 68.64 | 101 | Bosnia and Herzegovina | 3.65 | 37.04 |
| 42 | Malta | 4.92 | 68.40 | 102 | Pakistan | 3.63 | 36.54 |
| 43 | Gambia | 4.90 | 67.90 | 103 | Moldova, Rep. | 3.54 | 34.32 |
| 44 | Malawi | 4.78 | 64.94 | 104 | Slovenia | 3.53 | 34.07 |
| 45 | Morocco | 4.76 | 64.44 | 105 | Kyrgyzstan | 3.49 | 33.09 |
| 46 | Cambodia | 4.75 | 64.20 | 106 | Mali | 3.46 | 32.35 |
| 46 | Thailand | 4.75 | 64.20 | 107 | Ecuador | 3.44 | 31.85 |
| 48 | Portugal | 4.71 | 63.21 | 108 | Iceland | 3.39 | 30.62 |
| 49 | Mauritius | 4.70 | 62.96 | 109 | Egypt | 3.36 | 29.88 |
| 50 | Kenya | 4.69 | 62.72 | 110 | Russian Federation | 3.34 | 29.38 |
| 51 | Indonesia | 4.68 | 62.47 | 111 | Bolivia, Plurinational St. | 3.28 | 27.90 |
| 52 | Rwanda | 4.63 | 61.23 | 112 | Ukraine | 3.22 | 26.42 |
| 53 | Guatemala | 4.62 | 60.99 | 113 | Venezuela, Bolivarian Rep. | 3.19 | 25.68 |
| 54 | Senegal | 4.60 | 60.49 | 114 | Algeria | 3.08 | 22.96 |
| 55 | Colombia | 4.53 | 58.77 | 115 | Nepal | 2.94 | 19.51 |
| 56 | Philippines | 4.51 | 58.27 | 116 | Bhutan | 2.81 | 16.30 |
| 57 | China | 4.49 | 57.78 | 117 | Kuwait | 2.68 | 13.09 |
| 58 | Hungary | 4.48 | 57.53 | 118 | Iran, Islamic Rep. | 2.39 | 5.93 |
| 58 | Mozambique | 4.48 | 57.53 | 119 | Yemen | 2.15 | 0.00 |
| 60 | Qatar | 4.46 | 57.04 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

2.1.3 Migrant stock

Adult migrant stock (%) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Bahrain | 51.13 | 100.00 | 61 | Namibia | 3.82 | 8.27 |
| 1 | Kuwait | 73.64 | 100.00 | 62 | Rwanda | 3.80 | 8.23 |
| 1 | Qatar | 75.50 | 100.00 | 63 | Turkey | 3.77 | 8.16 |
| 1 | Singapore | 45.39 | 100.00 | 64 | Trinidad and Tobago | 3.67 | 7.94 |
| 1 | United Arab Emirates | 88.40 | 100.00 | 65 | Moldova, Rep. | 3.51 | 7.59 |
| 6 | Luxembourg | 43.96 | 96.84 | 66 | Iran, Islamic Rep. | 3.45 | 7.46 |
| 7 | Oman | 41.09 | 90.51 | 67 | Kyrgyzstan | 3.44 | 7.44 |
| 8 | Jordan | 40.98 | 90.27 | 68 | Slovakia | 3.27 | 7.06 |
| 9 | Lebanon | 34.15 | 75.20 | 69 | Azerbaijan | 2.71 | 5.83 |
| 10 | Saudi Arabia | 32.29 | 71.09 | 70 | Korea, Rep. | 2.64 | 5.67 |
| 11 | Switzerland | 29.39 | 64.70 | 71 | Chile | 2.62 | 5.63 |
| 12 | Australia | 28.22 | 62.11 | 72 | Zimbabwe | 2.56 | 5.49 |
| 13 | Israel | 24.95 | 54.90 | 73 | Ecuador | 2.40 | 5.14 |
| 14 | New Zealand | 22.96 | 50.51 | 74 | Paraguay | 2.36 | 5.05 |
| 15 | Canada | 21.80 | 47.95 | 75 | Kenya | 2.35 | 5.03 |
| 16 | Kazakhstan | 20.12 | 44.24 | 76 | Mauritius | 2.25 | 4.81 |
| 17 | Austria | 17.47 | 38.39 | 77 | Uruguay | 2.09 | 4.46 |
| 18 | Cyprus | 16.83 | 36.98 | 78 | Mali | 2.06 | 4.39 |
| 19 | Sweden | 16.77 | 36.85 | 79 | Albania | 1.99 | 4.24 |
| 20 | Ireland | 15.92 | 34.97 | 80 | Pakistan | 1.92 | 4.08 |
| 21 | Estonia | 15.42 | 33.87 | 80 | Uganda | 1.92 | 4.08 |
| 22 | Germany | 14.88 | 32.68 | 82 | Nepal | 1.82 | 3.86 |
| 23 | United States of America | 14.49 | 31.82 | 83 | Senegal | 1.74 | 3.68 |
| 24 | Norway | 14.24 | 31.27 | 84 | Japan | 1.61 | 3.40 |
| 25 | Croatia | 13.60 | 29.85 | 85 | Poland | 1.60 | 3.38 |
| 26 | Latvia | 13.35 | 29.30 | 86 | Ghana | 1.46 | 3.07 |
| 27 | United Kingdom | 13.20 | 28.97 | 87 | Bulgaria | 1.43 | 3.00 |
| 28 | Montenegro | 13.19 | 28.95 | 88 | Bolivia, Plurinational St. | 1.33 | 2.78 |
| 29 | Spain | 12.69 | 27.85 | 89 | Yemen | 1.28 | 2.67 |
| 30 | Belgium | 12.28 | 26.94 | 90 | Malawi | 1.25 | 2.60 |
| 31 | France | 12.09 | 26.52 | 91 | Romania | 1.16 | 2.41 |
| 32 | Netherlands | 11.70 | 25.66 | 92 | Ethiopia | 1.08 | 2.23 |
| 33 | Slovenia | 11.41 | 25.02 | 93 | Mexico | 0.94 | 1.92 |
| 34 | Iceland | 11.39 | 24.98 | 94 | Bosnia and Herzegovina | 0.91 | 1.85 |
| 35 | Greece | 11.34 | 24.87 | 95 | Bangladesh | 0.88 | 1.79 |
| 36 | Ukraine | 10.79 | 23.65 | 96 | Mozambique | 0.80 | 1.61 |
| 37 | Denmark | 10.10 | 22.13 | 97 | El Salvador | 0.69 | 1.37 |
| 38 | Malta | 9.90 | 21.69 | 98 | Nicaragua | 0.66 | 1.30 |
| 39 | Italy | 9.68 | 21.20 | 99 | Algeria | 0.61 | 1.19 |
| 40 | Gambia | 9.67 | 21.18 | 100 | Mongolia | 0.60 | 1.17 |
| 41 | Serbia | 9.12 | 19.97 | 101 | Egypt | 0.54 | 1.04 |
| 42 | Costa Rica | 8.77 | 19.20 | 102 | Tunisia | 0.50 | 0.95 |
| 43 | Malaysia | 8.29 | 18.14 | 103 | Tanzania, United Rep. | 0.49 | 0.93 |
| 44 | Russian Federation | 8.12 | 17.76 | 104 | Cambodia | 0.47 | 0.88 |
| 45 | Portugal | 8.09 | 17.70 | 104 | Guatemala | 0.47 | 0.88 |
| 46 | Botswana | 7.10 | 15.51 | 106 | India | 0.40 | 0.73 |
| 47 | Bhutan | 6.60 | 14.41 | 107 | Honduras | 0.35 | 0.62 |
| 48 | Armenia | 6.34 | 13.83 | 108 | Brazil | 0.34 | 0.60 |
| 49 | Macedonia, FYR | 6.29 | 13.72 | 109 | Lao PDR | 0.33 | 0.57 |
| 50 | South Africa | 5.77 | 12.58 | 110 | Lesotho | 0.31 | 0.53 |
| 51 | Thailand | 5.76 | 12.56 | 111 | Peru | 0.29 | 0.49 |
| 52 | Finland | 5.74 | 12.51 | 112 | Colombia | 0.28 | 0.46 |
| 53 | Argentina | 4.81 | 10.46 | 113 | Morocco | 0.26 | 0.42 |
| 54 | Lithuania | 4.73 | 10.28 | 114 | Philippines | 0.21 | 0.31 |
| 55 | Panama | 4.70 | 10.22 | 115 | Sri Lanka | 0.19 | 0.26 |
| 56 | Hungary | 4.56 | 9.91 | 116 | Indonesia | 0.13 | 0.13 |
| 57 | Venezuela, Bolivarian Rep. | 4.51 | 9.80 | 116 | Madagascar | 0.13 | 0.13 |
| 58 | Georgia | 4.22 | 9.16 | 118 | Viet Nam | 0.08 | 0.02 |
| 59 | Dominican Republic | 3.95 | 8.56 | 119 | China | 0.07 | 0.00 |
| 60 | Czech Republic | 3.84 | 8.32 | | | | |

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/estimates15.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 2006.

2.1.4 International students

Tertiary inbound mobility ratio (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Luxembourg | 40.56 | 100.00 | 61 | Thailand | 2.10 | 10.82 |
| 1 | Qatar | 37.71 | 100.00 | 62 | Azerbaijan | 2.05 | 10.55 |
| 1 | Singapore | 19.17 | 100.00 | 63 | Kazakhstan | 2.01 | 10.34 |
| 1 | United Arab Emirates | 46.90 | 100.00 | 64 | Tunisia | 2.00 | 10.29 |
| 5 | New Zealand | 18.74 | 97.75 | 65 | Egypt | 1.88 | 9.67 |
| 6 | Australia | 18.30 | 95.45 | 66 | Morocco | 1.80 | 9.25 |
| 7 | United Kingdom | 18.22 | 95.04 | 67 | Madagascar | 1.77 | 9.09 |
| 8 | Cyprus | 17.56 | 91.59 | 68 | Albania | 1.69 | 8.67 |
| 9 | Switzerland | 17.11 | 89.24 | 69 | Korea, Rep. | 1.66 | 8.52 |
| 10 | Austria | 15.89 | 82.86 | 70 | Botswana | 1.63 | 8.36 |
| 11 | Senegal | 15.79 | 82.34 | 71 | Poland | 1.46 | 7.47 |
| 12 | Bahrain | 13.87 | 72.31 | 72 | Malawi | 1.14 | 5.80 |
| 13 | Jordan | 12.91 | 67.29 | 73 | Rwanda | 0.96 | 4.86 |
| 14 | Belgium | 11.19 | 58.31 | 74 | Turkey | 0.88 | 4.44 |
| 15 | Uganda | 10.73 | 55.90 | 75 | Honduras | 0.69 | 3.45 |
| 16 | Namibia | 10.17 | 52.98 | 75 | Mongolia | 0.69 | 3.45 |
| 17 | Denmark | 9.93 | 51.72 | 77 | Algeria | 0.62 | 3.08 |
| 18 | Lebanon | 9.85 | 51.31 | 78 | Ecuador | 0.59 | 2.93 |
| 19 | France | 9.84 | 51.25 | 79 | Mali | 0.53 | 2.61 |
| 20 | Czech Republic | 9.83 | 51.20 | 80 | Zimbabwe | 0.47 | 2.30 |
| 21 | Germany | 7.68 | 39.97 | 81 | El Salvador | 0.40 | 1.93 |
| 22 | Finland | 7.65 | 39.81 | 82 | Lesotho | 0.39 | 1.88 |
| 23 | Bosnia and Herzegovina | 7.47 | 38.87 | 83 | Croatia | 0.38 | 1.83 |
| 24 | Malaysia | 7.37 | 38.35 | 84 | Mozambique | 0.37 | 1.78 |
| 25 | Netherlands | 7.25 | 37.72 | 85 | Sri Lanka | 0.32 | 1.52 |
| 26 | Hungary | 7.05 | 36.68 | 86 | Chile | 0.31 | 1.46 |
| 27 | Ireland | 7.00 | 36.42 | 87 | Iran, Islamic Rep. | 0.29 | 1.36 |
| 28 | Iceland | 6.54 | 34.01 | 88 | China | 0.28 | 1.31 |
| 29 | Malta | 6.21 | 32.29 | 89 | Brazil | 0.24 | 1.10 |
| 30 | Sweden | 5.91 | 30.72 | 89 | Lao PDR | 0.24 | 1.10 |
| 31 | Slovakia | 5.61 | 29.15 | 89 | Mexico | 0.24 | 1.10 |
| 32 | Estonia | 5.18 | 26.91 | 92 | Colombia | 0.18 | 0.78 |
| 33 | Latvia | 4.99 | 25.91 | 93 | India | 0.13 | 0.52 |
| 34 | Saudi Arabia | 4.78 | 24.82 | 94 | Indonesia | 0.12 | 0.47 |
| 35 | Italy | 4.72 | 24.50 | 94 | Viet Nam | 0.12 | 0.47 |
| 36 | United States of America | 4.65 | 24.14 | 96 | Bangladesh | 0.10 | 0.37 |
| 37 | Kyrgyzstan | 4.51 | 23.41 | 96 | Philippines | 0.10 | 0.37 |
| 38 | Ghana | 4.27 | 22.15 | 98 | Venezuela, Bolivarian Rep. | 0.09 | 0.31 |
| 39 | Romania | 4.26 | 22.10 | 99 | Cambodia | 0.07 | 0.21 |
| 39 | Yemen | 4.26 | 22.10 | 100 | Nepal | 0.03 | 0.00 |
| 41 | Bulgaria | 4.25 | 22.05 | | Argentina | n/a | n/a |
| 42 | Greece | 4.19 | 21.73 | | Bhutan | n/a | n/a |
| 43 | South Africa | 4.18 | 21.68 | | Bolivia, Plurinational St. | n/a | n/a |
| 44 | Armenia | 4.14 | 21.47 | | Canada | n/a | n/a |
| 45 | Serbia | 4.13 | 21.42 | | Costa Rica | n/a | n/a |
| 46 | Portugal | 4.11 | 21.32 | | Ethiopia | n/a | n/a |
| 47 | Mauritius | 4.02 | 20.85 | | Gambia | n/a | n/a |
| 48 | Georgia | 3.75 | 19.44 | | Guatemala | n/a | n/a |
| 49 | Norway | 3.55 | 18.39 | | Kenya | n/a | n/a |
| 50 | Japan | 3.44 | 17.82 | | Kuwait | n/a | n/a |
| 51 | Ukraine | 3.24 | 16.77 | | Montenegro | n/a | n/a |
| 52 | Russian Federation | 3.05 | 15.78 | | Nicaragua | n/a | n/a |
| 53 | Spain | 2.86 | 14.79 | | Pakistan | n/a | n/a |
| 54 | Macedonia, FYR | 2.84 | 14.68 | | Panama | n/a | n/a |
| 55 | Oman | 2.81 | 14.52 | | Paraguay | n/a | n/a |
| 56 | Israel | 2.78 | 14.37 | | Peru | n/a | n/a |
| 57 | Slovenia | 2.75 | 14.21 | | Tanzania, United Rep. | n/a | n/a |
| 58 | Moldova, Rep. | 2.50 | 12.90 | | Trinidad and Tobago | n/a | n/a |
| 59 | Lithuania | 2.45 | 12.64 | | Uruguay | n/a | n/a |
| 60 | Dominican Republic | 2.34 | 12.07 | | | | |

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 2006.

2.1.5 Brain gain

Average answer to the question: 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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Switzerland | 6.28 | 100.00 | 61 | Madagascar | 3.31 | 40.36 |
| 2 | United Arab Emirates | 6.08 | 95.98 | 62 | Honduras | 3.27 | 39.56 |
| 3 | United Kingdom | 6.03 | 94.98 | 62 | Mali | 3.27 | 39.56 |
| 4 | Singapore | 6.01 | 94.58 | 62 | Viet Nam | 3.27 | 39.56 |
| 5 | United States of America | 5.80 | 90.36 | 65 | Guatemala | 3.25 | 39.16 |
| 6 | Qatar | 5.76 | 89.56 | 66 | Philippines | 3.22 | 38.55 |
| 7 | Ireland | 5.54 | 85.14 | 67 | Japan | 3.20 | 38.15 |
| 8 | Luxembourg | 5.51 | 84.54 | 67 | Lesotho | 3.20 | 38.15 |
| 9 | Canada | 5.12 | 76.71 | 69 | Ecuador | 3.18 | 37.75 |
| 10 | Malaysia | 5.10 | 76.31 | 70 | Portugal | 3.16 | 37.35 |
| 11 | Panama | 5.06 | 75.50 | 71 | Russian Federation | 3.15 | 37.15 |
| 12 | Netherlands | 4.97 | 73.69 | 71 | Spain | 3.15 | 37.15 |
| 13 | Rwanda | 4.92 | 72.69 | 73 | Colombia | 3.14 | 36.95 |
| 14 | New Zealand | 4.88 | 71.89 | 74 | Pakistan | 3.13 | 36.75 |
| 15 | Germany | 4.74 | 69.08 | 74 | Paraguay | 3.13 | 36.75 |
| 16 | Saudi Arabia | 4.72 | 68.67 | 76 | Kuwait | 3.12 | 36.55 |
| 17 | Norway | 4.67 | 67.67 | 77 | Sri Lanka | 3.03 | 34.74 |
| 18 | Australia | 4.66 | 67.47 | 78 | Uganda | 3.01 | 34.34 |
| 19 | Bahrain | 4.57 | 65.66 | 78 | Ukraine | 3.01 | 34.34 |
| 20 | Malta | 4.41 | 62.45 | 80 | Cyprus | 2.98 | 33.73 |
| 21 | India | 4.40 | 62.25 | 81 | Malawi | 2.95 | 33.13 |
| 22 | China | 4.37 | 61.65 | 82 | Uruguay | 2.88 | 31.73 |
| 23 | Chile | 4.32 | 60.64 | 83 | Nicaragua | 2.80 | 30.12 |
| 24 | Azerbaijan | 4.26 | 59.44 | 84 | Bangladesh | 2.76 | 29.32 |
| 24 | Oman | 4.26 | 59.44 | 85 | Brazil | 2.74 | 28.92 |
| 26 | Indonesia | 4.22 | 58.63 | 86 | Armenia | 2.71 | 28.31 |
| 27 | Belgium | 4.19 | 58.03 | 87 | Egypt | 2.70 | 28.11 |
| 28 | Sweden | 4.09 | 56.02 | 88 | Argentina | 2.64 | 26.91 |
| 29 | Denmark | 4.06 | 55.42 | 88 | Georgia | 2.64 | 26.91 |
| 30 | Mauritius | 4.01 | 54.42 | 88 | Italy | 2.64 | 26.91 |
| 31 | Iceland | 4.00 | 54.22 | 91 | Turkey | 2.63 | 26.71 |
| 32 | Austria | 3.98 | 53.82 | 92 | Lebanon | 2.57 | 25.50 |
| 33 | Kenya | 3.93 | 52.81 | 93 | Bulgaria | 2.53 | 24.70 |
| 34 | Botswana | 3.92 | 52.61 | 94 | Lithuania | 2.52 | 24.50 |
| 35 | Israel | 3.86 | 51.41 | 95 | Montenegro | 2.51 | 24.30 |
| 36 | Namibia | 3.84 | 51.00 | 96 | Nepal | 2.49 | 23.90 |
| 37 | Ethiopia | 3.77 | 49.60 | 96 | Slovenia | 2.49 | 23.90 |
| 38 | Costa Rica | 3.76 | 49.40 | 98 | Bolivia, Plurinational St. | 2.47 | 23.49 |
| 38 | Ghana | 3.76 | 49.40 | 98 | Mongolia | 2.47 | 23.49 |
| 40 | Thailand | 3.74 | 49.00 | 98 | Poland | 2.47 | 23.49 |
| 41 | Peru | 3.73 | 48.80 | 101 | Latvia | 2.44 | 22.89 |
| 42 | Korea, Rep. | 3.72 | 48.59 | 102 | Albania | 2.40 | 22.09 |
| 43 | France | 3.64 | 46.99 | 102 | Kyrgyzstan | 2.40 | 22.09 |
| 43 | Kazakhstan | 3.64 | 46.99 | 104 | El Salvador | 2.36 | 21.29 |
| 45 | South Africa | 3.63 | 46.79 | 105 | Hungary | 2.35 | 21.08 |
| 46 | Bhutan | 3.62 | 46.59 | 106 | Tunisia | 2.27 | 19.48 |
| 47 | Gambia | 3.61 | 46.39 | 107 | Zimbabwe | 2.25 | 19.08 |
| 48 | Cambodia | 3.57 | 45.58 | 108 | Algeria | 2.24 | 18.88 |
| 48 | Mozambique | 3.57 | 45.58 | 108 | Iran, Islamic Rep. | 2.24 | 18.88 |
| 48 | Tanzania, United Rep. | 3.57 | 45.58 | 110 | Romania | 2.18 | 17.67 |
| 51 | Trinidad and Tobago | 3.53 | 44.78 | 111 | Macedonia, FYR | 2.16 | 17.27 |
| 52 | Jordan | 3.52 | 44.58 | 112 | Greece | 2.08 | 15.66 |
| 53 | Mexico | 3.51 | 44.38 | 113 | Yemen | 2.04 | 14.86 |
| 54 | Finland | 3.48 | 43.78 | 114 | Slovakia | 2.03 | 14.66 |
| 54 | Senegal | 3.48 | 43.78 | 115 | Croatia | 1.90 | 12.05 |
| 56 | Dominican Republic | 3.45 | 43.17 | 116 | Bosnia and Herzegovina | 1.73 | 8.63 |
| 57 | Lao PDR | 3.38 | 41.77 | 117 | Moldova, Rep. | 1.72 | 8.43 |
| 58 | Morocco | 3.37 | 41.57 | 118 | Serbia | 1.68 | 7.63 |
| 59 | Czech Republic | 3.32 | 40.56 | 119 | Venezuela, Bolivarian Rep. | 1.30 | 0.00 |
| 59 | Estonia | 3.32 | 40.56 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

2.2.1 Tolerance of minorities

Discrimination and violence against minorities | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Iceland | 1.30 | 100.00 | 61 | Malaysia | 6.20 | 43.68 |
| 1 | Sweden | 1.30 | 100.00 | 62 | El Salvador | 6.30 | 42.53 |
| 3 | Finland | 1.60 | 96.55 | 62 | Lao PDR | 6.30 | 42.53 |
| 4 | Ireland | 1.90 | 93.10 | 62 | Senegal | 6.30 | 42.53 |
| 5 | Portugal | 2.60 | 85.06 | 65 | Azerbaijan | 6.40 | 41.38 |
| 6 | Oman | 3.00 | 80.46 | 65 | Honduras | 6.40 | 41.38 |
| 6 | Uruguay | 3.00 | 80.46 | 65 | Mexico | 6.40 | 41.38 |
| 8 | Luxembourg | 3.10 | 79.31 | 68 | Bolivia, Plurinational St. | 6.50 | 40.23 |
| 8 | Singapore | 3.10 | 79.31 | 68 | Estonia | 6.50 | 40.23 |
| 10 | Korea, Rep. | 3.40 | 75.86 | 68 | Moldova, Rep. | 6.50 | 40.23 |
| 11 | Denmark | 3.60 | 73.56 | 68 | Nicaragua | 6.50 | 40.23 |
| 11 | Switzerland | 3.60 | 73.56 | 68 | Viet Nam | 6.50 | 40.23 |
| 13 | Gambia | 3.70 | 72.41 | 73 | France | 6.80 | 36.78 |
| 13 | Norway | 3.70 | 72.41 | 73 | Romania | 6.80 | 36.78 |
| 15 | Czech Republic | 3.80 | 71.26 | 75 | Cyprus | 7.00 | 34.48 |
| 15 | Mauritius | 3.80 | 71.26 | 75 | Kazakhstan | 7.00 | 34.48 |
| 17 | Canada | 3.90 | 70.11 | 75 | Macedonia, FYR | 7.00 | 34.48 |
| 17 | Malta | 3.90 | 70.11 | 75 | Ukraine | 7.00 | 34.48 |
| 17 | Netherlands | 3.90 | 70.11 | 79 | Bosnia and Herzegovina | 7.10 | 33.33 |
| 17 | Slovenia | 3.90 | 70.11 | 79 | Morocco | 7.10 | 33.33 |
| 17 | United Arab Emirates | 3.90 | 70.11 | 81 | Indonesia | 7.30 | 31.03 |
| 22 | Belgium | 4.10 | 67.82 | 81 | Montenegro | 7.30 | 31.03 |
| 22 | Chile | 4.10 | 67.82 | 81 | Venezuela, Bolivarian Rep. | 7.30 | 31.03 |
| 22 | New Zealand | 4.10 | 67.82 | 84 | Cambodia | 7.40 | 29.89 |
| 22 | Trinidad and Tobago | 4.10 | 67.82 | 84 | Latvia | 7.40 | 29.89 |
| 26 | Japan | 4.20 | 66.67 | 84 | Saudi Arabia | 7.40 | 29.89 |
| 27 | Austria | 4.30 | 65.52 | 87 | Peru | 7.50 | 28.74 |
| 27 | Lithuania | 4.30 | 65.52 | 88 | Mali | 7.60 | 27.59 |
| 27 | Mongolia | 4.30 | 65.52 | 89 | Bahrain | 7.70 | 26.44 |
| 30 | Australia | 4.40 | 64.37 | 89 | Jordan | 7.70 | 26.44 |
| 30 | Lesotho | 4.40 | 64.37 | 91 | Ecuador | 7.80 | 25.29 |
| 30 | Poland | 4.40 | 64.37 | 91 | Georgia | 7.80 | 25.29 |
| 33 | Germany | 4.60 | 62.07 | 91 | Tunisia | 7.80 | 25.29 |
| 33 | Ghana | 4.60 | 62.07 | 91 | Zimbabwe | 7.80 | 25.29 |
| 33 | Madagascar | 4.60 | 62.07 | 95 | Bhutan | 7.90 | 24.14 |
| 33 | Qatar | 4.60 | 62.07 | 95 | Guatemala | 7.90 | 24.14 |
| 37 | Costa Rica | 4.70 | 60.92 | 97 | Colombia | 8.00 | 22.99 |
| 37 | Hungary | 4.70 | 60.92 | 98 | Serbia | 8.10 | 21.84 |
| 37 | Kuwait | 4.70 | 60.92 | 99 | Algeria | 8.20 | 20.69 |
| 40 | Italy | 4.90 | 58.62 | 100 | China | 8.30 | 19.54 |
| 41 | Albania | 5.00 | 57.47 | 100 | India | 8.30 | 19.54 |
| 41 | Argentina | 5.00 | 57.47 | 100 | Philippines | 8.30 | 19.54 |
| 41 | Greece | 5.00 | 57.47 | 103 | Bangladesh | 8.40 | 18.39 |
| 41 | United States of America | 5.00 | 57.47 | 103 | Kyrgyzstan | 8.40 | 18.39 |
| 45 | Bulgaria | 5.20 | 55.17 | 105 | Ethiopia | 8.50 | 17.24 |
| 46 | Armenia | 5.40 | 52.87 | 105 | Iran, Islamic Rep. | 8.50 | 17.24 |
| 46 | Botswana | 5.40 | 52.87 | 105 | Thailand | 8.50 | 17.24 |
| 46 | Malawi | 5.40 | 52.87 | 108 | Lebanon | 8.60 | 16.09 |
| 49 | South Africa | 5.50 | 51.72 | 109 | Egypt | 8.70 | 14.94 |
| 50 | Panama | 5.60 | 50.57 | 109 | Uganda | 8.70 | 14.94 |
| 50 | United Kingdom | 5.60 | 50.57 | 111 | Rwanda | 8.80 | 13.79 |
| 52 | Croatia | 5.70 | 49.43 | 112 | Kenya | 9.00 | 11.49 |
| 52 | Tanzania, United Rep. | 5.70 | 49.43 | 112 | Turkey | 9.00 | 11.49 |
| 54 | Dominican Republic | 5.80 | 48.28 | 114 | Nepal | 9.10 | 10.34 |
| 54 | Spain | 5.80 | 48.28 | 115 | Russian Federation | 9.30 | 8.05 |
| 56 | Brazil | 5.90 | 47.13 | 115 | Sri Lanka | 9.30 | 8.05 |
| 56 | Mozambique | 5.90 | 47.13 | 117 | Yemen | 9.40 | 6.90 |
| 56 | Namibia | 5.90 | 47.13 | 118 | Israel | 9.70 | 3.45 |
| 56 | Paraguay | 5.90 | 47.13 | 119 | Pakistan | 10.00 | 0.00 |
| 56 | Slovakia | 5.90 | 47.13 | | | | |

SOURCE: Social Progress Imperative, The Social Progress Index 2016 (<http://www.socialprogressimperative.org/publication/2016-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 2006.

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? | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | New Zealand | 0.89 | 100.00 | 59 | Tunisia | 0.58 | 56.34 |
| 2 | Canada | 0.86 | 95.77 | 62 | Dominican Republic | 0.57 | 54.93 |
| 2 | Luxembourg | 0.86 | 95.77 | 62 | Greece | 0.57 | 54.93 |
| 4 | Ireland | 0.85 | 94.37 | 62 | Madagascar | 0.57 | 54.93 |
| 5 | Australia | 0.84 | 92.96 | 62 | Uganda | 0.57 | 54.93 |
| 5 | Spain | 0.84 | 92.96 | 66 | Azerbaijan | 0.56 | 53.52 |
| 5 | United Arab Emirates | 0.84 | 92.96 | 66 | Cyprus | 0.56 | 53.52 |
| 8 | Senegal | 0.83 | 91.55 | 66 | Romania | 0.56 | 53.52 |
| 8 | United Kingdom | 0.83 | 91.55 | 66 | Rwanda | 0.56 | 53.52 |
| 10 | Denmark | 0.82 | 90.14 | 66 | Zimbabwe | 0.56 | 53.52 |
| 10 | Mali | 0.82 | 90.14 | 71 | El Salvador | 0.55 | 52.11 |
| 12 | Germany | 0.81 | 88.73 | 71 | Sri Lanka | 0.55 | 52.11 |
| 12 | Mauritius | 0.81 | 88.73 | 73 | Mexico | 0.54 | 50.70 |
| 12 | Norway | 0.81 | 88.73 | 73 | Serbia | 0.54 | 50.70 |
| 12 | Uruguay | 0.81 | 88.73 | 75 | Turkey | 0.53 | 49.30 |
| 16 | Qatar | 0.80 | 87.32 | 76 | Albania | 0.52 | 47.89 |
| 17 | Portugal | 0.79 | 85.92 | 76 | Armenia | 0.52 | 47.89 |
| 18 | Iceland | 0.78 | 84.51 | 76 | Jordan | 0.52 | 47.89 |
| 18 | Nepal | 0.78 | 84.51 | 76 | Morocco | 0.52 | 47.89 |
| 18 | Sweden | 0.78 | 84.51 | 76 | Tanzania, United Rep. | 0.52 | 47.89 |
| 21 | Argentina | 0.77 | 83.10 | 81 | Lebanon | 0.50 | 45.07 |
| 21 | Mozambique | 0.77 | 83.10 | 81 | Macedonia, FYR | 0.50 | 45.07 |
| 21 | Netherlands | 0.77 | 83.10 | 83 | Algeria | 0.49 | 43.66 |
| 24 | Austria | 0.75 | 80.28 | 83 | Pakistan | 0.49 | 43.66 |
| 24 | Colombia | 0.75 | 80.28 | 85 | Guatemala | 0.48 | 42.25 |
| 24 | Paraguay | 0.75 | 80.28 | 85 | Venezuela, Bolivarian Rep. | 0.48 | 42.25 |
| 27 | France | 0.74 | 78.87 | 87 | Georgia | 0.47 | 40.85 |
| 27 | Saudi Arabia | 0.74 | 78.87 | 87 | Malawi | 0.47 | 40.85 |
| 27 | United States of America | 0.74 | 78.87 | 87 | Moldova, Rep. | 0.47 | 40.85 |
| 30 | Belgium | 0.73 | 77.46 | 87 | Russian Federation | 0.47 | 40.85 |
| 30 | Chile | 0.73 | 77.46 | 91 | Croatia | 0.46 | 39.44 |
| 30 | Switzerland | 0.73 | 77.46 | 91 | Iran, Islamic Rep. | 0.46 | 39.44 |
| 33 | Finland | 0.72 | 76.06 | 93 | Japan | 0.45 | 38.03 |
| 34 | Botswana | 0.71 | 74.65 | 94 | Bosnia and Herzegovina | 0.44 | 36.62 |
| 34 | Costa Rica | 0.71 | 74.65 | 94 | Hungary | 0.44 | 36.62 |
| 34 | Ecuador | 0.71 | 74.65 | 94 | Kazakhstan | 0.44 | 36.62 |
| 37 | Brazil | 0.69 | 71.83 | 94 | Lesotho | 0.44 | 36.62 |
| 37 | Kuwait | 0.69 | 71.83 | 98 | Viet Nam | 0.43 | 35.21 |
| 37 | Singapore | 0.69 | 71.83 | 99 | Egypt | 0.41 | 32.39 |
| 40 | Bahrain | 0.68 | 70.42 | 99 | Malaysia | 0.41 | 32.39 |
| 40 | Montenegro | 0.68 | 70.42 | 101 | China | 0.40 | 30.99 |
| 40 | Trinidad and Tobago | 0.68 | 70.42 | 101 | Israel | 0.40 | 30.99 |
| 43 | Italy | 0.66 | 67.61 | 103 | Bulgaria | 0.39 | 29.58 |
| 43 | Kenya | 0.66 | 67.61 | 103 | Honduras | 0.39 | 29.58 |
| 45 | Bolivia, Plurinational St. | 0.65 | 66.20 | 103 | Ukraine | 0.39 | 29.58 |
| 46 | Bangladesh | 0.64 | 64.79 | 106 | Lithuania | 0.38 | 28.17 |
| 47 | Ghana | 0.63 | 63.38 | 107 | India | 0.37 | 26.76 |
| 47 | Lao PDR | 0.63 | 63.38 | 107 | Mongolia | 0.37 | 26.76 |
| 49 | Malta | 0.62 | 61.97 | 109 | Poland | 0.36 | 25.35 |
| 49 | Philippines | 0.62 | 61.97 | 109 | Thailand | 0.36 | 25.35 |
| 51 | Nicaragua | 0.61 | 60.56 | 109 | Yemen | 0.36 | 25.35 |
| 51 | South Africa | 0.61 | 60.56 | 112 | Slovakia | 0.33 | 21.13 |
| 53 | Bhutan | 0.60 | 59.15 | 113 | Czech Republic | 0.31 | 18.31 |
| 53 | Ethiopia | 0.60 | 59.15 | 114 | Indonesia | 0.30 | 16.90 |
| 53 | Peru | 0.60 | 59.15 | 115 | Estonia | 0.23 | 7.04 |
| 53 | Slovenia | 0.60 | 59.15 | 116 | Latvia | 0.20 | 2.82 |
| 57 | Kyrgyzstan | 0.59 | 57.75 | 117 | Cambodia | 0.18 | 0.00 |
| 57 | Namibia | 0.59 | 57.75 | | Gambia | n/a | n/a |
| 59 | Korea, Rep. | 0.58 | 56.34 | | Oman | n/a | n/a |
| 59 | Panama | 0.58 | 56.34 | | | | |

SOURCE: Social Progress Imperative, The Social Progress Index 2016 (<http://www.socialprogressimperative.org/publication/2016-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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Finland | 6.32 | 100.00 | 61 | Kazakhstan | 4.25 | 43.60 |
| 2 | New Zealand | 6.23 | 97.55 | 61 | Paraguay | 4.25 | 43.60 |
| 2 | Switzerland | 6.23 | 97.55 | 61 | Uganda | 4.25 | 43.60 |
| 4 | Norway | 6.21 | 97.00 | 64 | Portugal | 4.24 | 43.32 |
| 5 | Singapore | 6.16 | 95.64 | 65 | Mali | 4.22 | 42.78 |
| 6 | Australia | 6.02 | 91.83 | 66 | Morocco | 4.20 | 42.23 |
| 7 | Netherlands | 6.01 | 91.55 | 67 | Gambia | 4.16 | 41.14 |
| 8 | Iceland | 5.99 | 91.01 | 68 | Lesotho | 4.15 | 40.87 |
| 9 | United Arab Emirates | 5.94 | 89.65 | 69 | Philippines | 4.12 | 40.05 |
| 10 | Luxembourg | 5.91 | 88.83 | 69 | Poland | 4.12 | 40.05 |
| 11 | Denmark | 5.82 | 86.38 | 71 | Tunisia | 4.11 | 39.78 |
| 12 | Qatar | 5.73 | 83.92 | 72 | Colombia | 4.10 | 39.51 |
| 13 | Canada | 5.70 | 83.11 | 73 | Tanzania, United Rep. | 4.09 | 39.24 |
| 14 | Sweden | 5.69 | 82.83 | 74 | Bangladesh | 4.06 | 38.42 |
| 15 | Austria | 5.66 | 82.02 | 74 | Zimbabwe | 4.06 | 38.42 |
| 16 | Estonia | 5.64 | 81.47 | 76 | Ecuador | 4.05 | 38.15 |
| 17 | United States of America | 5.62 | 80.93 | 77 | Cyprus | 4.04 | 37.87 |
| 18 | Rwanda | 5.50 | 77.66 | 78 | Ethiopia | 4.03 | 37.60 |
| 19 | Belgium | 5.46 | 76.57 | 78 | Thailand | 4.03 | 37.60 |
| 20 | Ireland | 5.42 | 75.48 | 80 | Russian Federation | 4.02 | 37.33 |
| 21 | Germany | 5.38 | 74.39 | 81 | Azerbaijan | 4.00 | 36.78 |
| 22 | United Kingdom | 5.35 | 73.57 | 82 | Viet Nam | 3.96 | 35.69 |
| 23 | Malta | 5.34 | 73.30 | 83 | Malawi | 3.95 | 35.42 |
| 24 | Japan | 5.29 | 71.93 | 84 | Kyrgyzstan | 3.94 | 35.15 |
| 25 | Bahrain | 5.26 | 71.12 | 85 | Macedonia, FYR | 3.93 | 34.88 |
| 26 | Malaysia | 5.23 | 70.30 | 85 | Mexico | 3.93 | 34.88 |
| 27 | Czech Republic | 5.00 | 64.03 | 87 | Montenegro | 3.92 | 34.60 |
| 27 | Saudi Arabia | 5.00 | 64.03 | 88 | Turkey | 3.91 | 34.33 |
| 29 | Panama | 4.98 | 63.49 | 89 | Lebanon | 3.88 | 33.51 |
| 30 | Bhutan | 4.88 | 60.76 | 90 | Brazil | 3.87 | 33.24 |
| 30 | Costa Rica | 4.88 | 60.76 | 90 | Italy | 3.87 | 33.24 |
| 32 | Mongolia | 4.81 | 58.86 | 92 | Greece | 3.84 | 32.43 |
| 33 | Uruguay | 4.71 | 56.13 | 93 | Armenia | 3.83 | 32.15 |
| 34 | India | 4.70 | 55.86 | 94 | Korea, Rep. | 3.82 | 31.88 |
| 35 | France | 4.68 | 55.31 | 95 | Argentina | 3.80 | 31.34 |
| 36 | Israel | 4.67 | 55.04 | 95 | Nepal | 3.80 | 31.34 |
| 37 | Chile | 4.66 | 54.77 | 97 | Algeria | 3.78 | 30.79 |
| 38 | Mauritius | 4.65 | 54.50 | 98 | Cambodia | 3.77 | 30.52 |
| 38 | Spain | 4.65 | 54.50 | 99 | Bolivia, Plurinational St. | 3.76 | 30.25 |
| 40 | Lithuania | 4.62 | 53.68 | 100 | Dominican Republic | 3.73 | 29.43 |
| 41 | Oman | 4.61 | 53.41 | 100 | Kuwait | 3.73 | 29.43 |
| 42 | Sri Lanka | 4.60 | 53.13 | 102 | Pakistan | 3.70 | 28.61 |
| 43 | Botswana | 4.57 | 52.32 | 103 | Albania | 3.66 | 27.52 |
| 43 | Guatemala | 4.57 | 52.32 | 104 | Iran, Islamic Rep. | 3.65 | 27.25 |
| 43 | Trinidad and Tobago | 4.57 | 52.32 | 105 | Madagascar | 3.62 | 26.43 |
| 46 | Latvia | 4.56 | 52.04 | 105 | Nicaragua | 3.62 | 26.43 |
| 47 | Peru | 4.51 | 50.68 | 107 | Mozambique | 3.52 | 23.71 |
| 48 | Namibia | 4.44 | 48.77 | 108 | Croatia | 3.50 | 23.16 |
| 49 | South Africa | 4.42 | 48.23 | 109 | Romania | 3.44 | 21.53 |
| 50 | Slovenia | 4.41 | 47.96 | 110 | Ukraine | 3.41 | 20.71 |
| 51 | Indonesia | 4.39 | 47.41 | 111 | Bulgaria | 3.40 | 20.44 |
| 52 | China | 4.37 | 46.87 | 112 | El Salvador | 3.39 | 20.16 |
| 53 | Jordan | 4.36 | 46.59 | 113 | Moldova, Rep. | 3.29 | 17.44 |
| 54 | Lao PDR | 4.35 | 46.32 | 114 | Hungary | 3.24 | 16.08 |
| 55 | Ghana | 4.32 | 45.50 | 115 | Serbia | 3.17 | 14.17 |
| 55 | Kenya | 4.32 | 45.50 | 116 | Bosnia and Herzegovina | 3.09 | 11.99 |
| 57 | Georgia | 4.30 | 44.96 | 117 | Egypt | 3.06 | 11.17 |
| 57 | Honduras | 4.30 | 44.96 | 118 | Yemen | 3.03 | 10.35 |
| 57 | Senegal | 4.30 | 44.96 | 119 | Venezuela, Bolivarian Rep. | 2.65 | 0.00 |
| 60 | Slovakia | 4.28 | 44.41 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

2.2.4 Female graduates

Female tertiary graduates (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Estonia | 66.39 | 100.00 | 61 | Macedonia, FYR | 56.07 | 72.62 |
| 2 | Poland | 66.03 | 99.04 | 62 | France | 55.88 | 72.11 |
| 3 | Namibia | 65.60 | 97.90 | 63 | Oman | 55.69 | 71.61 |
| 4 | Latvia | 65.18 | 96.79 | 64 | Chile | 55.67 | 71.56 |
| 5 | Argentina | 64.86 | 95.94 | 65 | Austria | 55.45 | 70.97 |
| 6 | Honduras | 64.84 | 95.89 | 66 | Colombia | 54.96 | 69.67 |
| 7 | Panama | 64.71 | 95.54 | 67 | Azerbaijan | 54.93 | 69.59 |
| 8 | Mauritius | 64.48 | 94.93 | 68 | Luxembourg | 54.90 | 69.51 |
| 9 | Iceland | 64.45 | 94.85 | 69 | Malta | 54.79 | 69.22 |
| 10 | Albania | 64.33 | 94.53 | 69 | United Arab Emirates | 54.79 | 69.22 |
| 11 | Uruguay | 64.12 | 93.98 | 71 | Viet Nam | 54.59 | 68.69 |
| 12 | Tunisia | 63.53 | 92.41 | 72 | Ukraine | 53.80 | 66.60 |
| 13 | Slovakia | 63.18 | 91.48 | 73 | Egypt | 52.81 | 63.97 |
| 14 | Lithuania | 63.03 | 91.09 | 74 | Mexico | 52.65 | 63.54 |
| 15 | Dominican Republic | 63.02 | 91.06 | 75 | Ireland | 52.29 | 62.59 |
| 16 | Lesotho | 62.99 | 90.98 | 76 | Indonesia | 52.14 | 62.19 |
| 17 | Cyprus | 62.94 | 90.85 | 77 | China | 51.55 | 60.63 |
| 18 | Costa Rica | 62.92 | 90.79 | 78 | Korea, Rep. | 51.27 | 59.88 |
| 19 | Algeria | 62.71 | 90.24 | 79 | Germany | 50.52 | 57.89 |
| 20 | Hungary | 62.58 | 89.89 | 80 | India | 50.22 | 57.10 |
| 21 | Sri Lanka | 62.51 | 89.71 | 81 | Saudi Arabia | 49.63 | 55.53 |
| 22 | Mongolia | 62.13 | 88.70 | 82 | Turkey | 49.24 | 54.50 |
| 23 | Sweden | 61.69 | 87.53 | 83 | Japan | 48.95 | 53.73 |
| 24 | Georgia | 61.50 | 87.03 | 84 | Lao PDR | 48.72 | 53.12 |
| 25 | Armenia | 61.12 | 86.02 | 85 | Nepal | 48.31 | 52.03 |
| 26 | Bahrain | 60.80 | 85.17 | 86 | Switzerland | 48.26 | 51.90 |
| 27 | Brazil | 60.63 | 84.72 | 87 | Morocco | 48.21 | 51.76 |
| 28 | South Africa | 60.42 | 84.16 | 88 | Gambia | 47.42 | 49.67 |
| 29 | Finland | 60.41 | 84.13 | 89 | Jordan | 46.80 | 48.02 |
| 30 | Czech Republic | 60.13 | 83.39 | 90 | Madagascar | 45.53 | 44.65 |
| 30 | Kyrgyzstan | 60.13 | 83.39 | 91 | Iran, Islamic Rep. | 44.02 | 40.65 |
| 32 | Bulgaria | 59.98 | 82.99 | 92 | Mozambique | 43.01 | 37.97 |
| 33 | Slovenia | 59.85 | 82.65 | 93 | Cambodia | 42.77 | 37.33 |
| 34 | Belgium | 59.81 | 82.54 | 94 | Rwanda | 42.70 | 37.15 |
| 35 | Croatia | 59.76 | 82.41 | 95 | Bangladesh | 41.89 | 35.00 |
| 36 | Italy | 59.68 | 82.20 | 96 | Zimbabwe | 41.54 | 34.07 |
| 37 | Bosnia and Herzegovina | 59.61 | 82.01 | 97 | Ghana | 40.41 | 31.07 |
| 38 | Moldova, Rep. | 59.49 | 81.69 | 98 | Malawi | 34.49 | 15.36 |
| 39 | Portugal | 59.35 | 81.32 | 99 | Bhutan | 34.19 | 14.57 |
| 40 | Romania | 58.65 | 79.46 | 100 | Senegal | 33.42 | 12.52 |
| 41 | Ecuador | 58.61 | 79.36 | 101 | Yemen | 33.35 | 12.34 |
| 42 | Norway | 58.56 | 79.23 | 102 | Ethiopia | 28.70 | 0.00 |
| 42 | Serbia | 58.56 | 79.23 | | Bolivia, Plurinational St. | n/a | n/a |
| 44 | United States of America | 58.43 | 78.88 | | Botswana | n/a | n/a |
| 45 | Guatemala | 58.32 | 78.59 | | Canada | n/a | n/a |
| 46 | Denmark | 58.31 | 78.56 | | Israel | n/a | n/a |
| 47 | Kuwait | 58.28 | 78.48 | | Kenya | n/a | n/a |
| 48 | New Zealand | 58.25 | 78.40 | | Mali | n/a | n/a |
| 49 | Qatar | 58.23 | 78.35 | | Montenegro | n/a | n/a |
| 50 | Malaysia | 58.07 | 77.93 | | Nicaragua | n/a | n/a |
| 51 | Australia | 57.96 | 77.63 | | Pakistan | n/a | n/a |
| 52 | Greece | 57.78 | 77.16 | | Paraguay | n/a | n/a |
| 53 | Philippines | 57.52 | 76.47 | | Peru | n/a | n/a |
| 54 | United Kingdom | 57.12 | 75.40 | | Russian Federation | n/a | n/a |
| 55 | Netherlands | 56.61 | 74.05 | | Singapore | n/a | n/a |
| 56 | Thailand | 56.39 | 73.47 | | Tanzania, United Rep. | n/a | n/a |
| 57 | El Salvador | 56.38 | 73.44 | | Trinidad and Tobago | n/a | n/a |
| 58 | Lebanon | 56.20 | 72.96 | | Uganda | n/a | n/a |
| 59 | Kazakhstan | 56.17 | 72.88 | | Venezuela, Bolivarian Rep. | n/a | n/a |
| 60 | Spain | 56.09 | 72.67 | | | | |

SOURCE: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2006.

2.2.5 Gender earnings gap

Estimated earned income ratio | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Luxembourg | 1.00 | 100.00 | 55 | Ukraine | 0.60 | 51.81 |
| 2 | Qatar | 0.91 | 89.16 | 62 | Bolivia, Plurinational St. | 0.59 | 50.60 |
| 3 | Botswana | 0.89 | 86.75 | 62 | Ecuador | 0.59 | 50.60 |
| 3 | Singapore | 0.89 | 86.75 | 62 | Ireland | 0.59 | 50.60 |
| 5 | Mozambique | 0.85 | 81.93 | 62 | Israel | 0.59 | 50.60 |
| 5 | Tanzania, United Rep. | 0.85 | 81.93 | 62 | Paraguay | 0.59 | 50.60 |
| 7 | Viet Nam | 0.83 | 79.52 | 67 | Bhutan | 0.58 | 49.40 |
| 8 | Rwanda | 0.82 | 78.31 | 67 | Brazil | 0.58 | 49.40 |
| 9 | Slovenia | 0.80 | 75.90 | 67 | Costa Rica | 0.58 | 49.40 |
| 10 | Norway | 0.79 | 74.70 | 70 | Greece | 0.57 | 48.19 |
| 11 | Sweden | 0.78 | 73.49 | 70 | Kazakhstan | 0.57 | 48.19 |
| 11 | Thailand | 0.78 | 73.49 | 70 | Montenegro | 0.57 | 48.19 |
| 13 | Lao PDR | 0.77 | 72.29 | 70 | Peru | 0.57 | 48.19 |
| 14 | Malawi | 0.76 | 71.08 | 74 | Nepal | 0.56 | 46.99 |
| 14 | Moldova, Rep. | 0.76 | 71.08 | 74 | Uruguay | 0.56 | 46.99 |
| 14 | Namibia | 0.76 | 71.08 | 76 | Trinidad and Tobago | 0.55 | 45.78 |
| 17 | Ghana | 0.74 | 68.67 | 77 | United Kingdom | 0.54 | 44.58 |
| 18 | Croatia | 0.73 | 67.47 | 78 | Armenia | 0.53 | 43.37 |
| 19 | France | 0.72 | 66.27 | 78 | Austria | 0.53 | 43.37 |
| 19 | Iceland | 0.72 | 66.27 | 78 | Kuwait | 0.53 | 43.37 |
| 19 | Lithuania | 0.72 | 66.27 | 81 | Chile | 0.52 | 42.17 |
| 22 | Finland | 0.71 | 65.06 | 81 | Italy | 0.52 | 42.17 |
| 22 | Madagascar | 0.71 | 65.06 | 83 | Albania | 0.51 | 40.96 |
| 22 | Mongolia | 0.71 | 65.06 | 83 | Azerbaijan | 0.51 | 40.96 |
| 22 | Portugal | 0.71 | 65.06 | 83 | Japan | 0.51 | 40.96 |
| 22 | Switzerland | 0.71 | 65.06 | 86 | El Salvador | 0.50 | 39.76 |
| 27 | Latvia | 0.70 | 63.86 | 86 | Senegal | 0.50 | 39.76 |
| 28 | Philippines | 0.69 | 62.65 | 88 | Guatemala | 0.49 | 38.55 |
| 28 | Romania | 0.69 | 62.65 | 89 | Georgia | 0.48 | 37.35 |
| 30 | Cambodia | 0.68 | 61.45 | 89 | Indonesia | 0.48 | 37.35 |
| 30 | Colombia | 0.68 | 61.45 | 89 | Mexico | 0.48 | 37.35 |
| 30 | Cyprus | 0.68 | 61.45 | 89 | Netherlands | 0.48 | 37.35 |
| 30 | Gambia | 0.68 | 61.45 | 89 | Nicaragua | 0.48 | 37.35 |
| 30 | Zimbabwe | 0.68 | 61.45 | 94 | Kyrgyzstan | 0.47 | 36.14 |
| 35 | Denmark | 0.67 | 60.24 | 94 | Mali | 0.47 | 36.14 |
| 35 | Germany | 0.67 | 60.24 | 96 | Bosnia and Herzegovina | 0.45 | 33.73 |
| 37 | Canada | 0.66 | 59.04 | 96 | Korea, Rep. | 0.45 | 33.73 |
| 38 | Belgium | 0.65 | 57.83 | 96 | Malta | 0.45 | 33.73 |
| 38 | Bulgaria | 0.65 | 57.83 | 99 | Turkey | 0.44 | 32.53 |
| 38 | Dominican Republic | 0.65 | 57.83 | 100 | Honduras | 0.43 | 31.33 |
| 38 | Kenya | 0.65 | 57.83 | 100 | Mauritius | 0.43 | 31.33 |
| 38 | Malaysia | 0.65 | 57.83 | 102 | Bangladesh | 0.40 | 27.71 |
| 38 | United States of America | 0.65 | 57.83 | 102 | Uganda | 0.40 | 27.71 |
| 44 | Poland | 0.64 | 56.63 | 104 | Sri Lanka | 0.31 | 16.87 |
| 44 | Serbia | 0.64 | 56.63 | 105 | Bahrain | 0.30 | 15.66 |
| 46 | Australia | 0.63 | 55.42 | 105 | United Arab Emirates | 0.30 | 15.66 |
| 46 | Spain | 0.63 | 55.42 | 107 | Egypt | 0.28 | 13.25 |
| 48 | China | 0.62 | 54.22 | 108 | Tunisia | 0.27 | 12.05 |
| 48 | Estonia | 0.62 | 54.22 | 108 | Yemen | 0.27 | 12.05 |
| 48 | Panama | 0.62 | 54.22 | 110 | Morocco | 0.26 | 10.84 |
| 48 | Venezuela, Bolivarian Rep. | 0.62 | 54.22 | 111 | Lebanon | 0.25 | 9.64 |
| 52 | Lesotho | 0.61 | 53.01 | 112 | Saudi Arabia | 0.24 | 8.43 |
| 52 | New Zealand | 0.61 | 53.01 | 113 | India | 0.23 | 7.23 |
| 52 | South Africa | 0.61 | 53.01 | 113 | Pakistan | 0.23 | 7.23 |
| 55 | Czech Republic | 0.60 | 51.81 | 115 | Oman | 0.22 | 6.02 |
| 55 | Ethiopia | 0.60 | 51.81 | 116 | Algeria | 0.18 | 1.20 |
| 55 | Hungary | 0.60 | 51.81 | 117 | Iran, Islamic Rep. | 0.17 | 0.00 |
| 55 | Macedonia, FYR | 0.60 | 51.81 | 117 | Jordan | 0.17 | 0.00 |
| 55 | Russian Federation | 0.60 | 51.81 | | Argentina | n/a | n/a |
| 55 | Slovakia | 0.60 | 51.81 | | | | |

SOURCE: World Economic Forum, *The Global Gender Gap Report 2016* (<http://reports.weforum.org/global-gender-gap-report-2016>)
 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 2006.

2.2.6 Leadership opportunities for women

Average answer to the question: **In your country, to what extent do companies provide women the same opportunities as men to rise to positions of leadership? [1 = not at all; 7 = to a great extent] | 2016**

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Norway | 6.05 | 100.00 | 61 | Namibia | 4.42 | 41.58 |
| 2 | Rwanda | 6.03 | 99.28 | 62 | Tanzania, United Rep. | 4.41 | 41.22 |
| 3 | Iceland | 5.99 | 97.85 | 63 | Kyrgyzstan | 4.40 | 40.86 |
| 4 | Finland | 5.93 | 95.70 | 63 | Moldova, Rep. | 4.40 | 40.86 |
| 5 | Sweden | 5.84 | 92.47 | 65 | Egypt | 4.35 | 39.07 |
| 6 | Singapore | 5.81 | 91.40 | 66 | Honduras | 4.34 | 38.71 |
| 7 | United Arab Emirates | 5.72 | 88.17 | 66 | Mauritius | 4.34 | 38.71 |
| 8 | Denmark | 5.71 | 87.81 | 68 | Zimbabwe | 4.32 | 37.99 |
| 9 | Albania | 5.70 | 87.46 | 69 | Costa Rica | 4.29 | 36.92 |
| 10 | Philippines | 5.56 | 82.44 | 70 | Portugal | 4.27 | 36.20 |
| 11 | New Zealand | 5.51 | 80.65 | 71 | Tunisia | 4.25 | 35.48 |
| 12 | Malaysia | 5.48 | 79.57 | 72 | Kuwait | 4.20 | 33.69 |
| 13 | Latvia | 5.36 | 75.27 | 73 | Mozambique | 4.19 | 33.33 |
| 14 | Estonia | 5.31 | 73.48 | 73 | Poland | 4.19 | 33.33 |
| 15 | Qatar | 5.30 | 73.12 | 75 | Montenegro | 4.16 | 32.26 |
| 16 | Bahrain | 5.28 | 72.40 | 76 | Venezuela, Bolivarian Rep. | 4.15 | 31.90 |
| 16 | Luxembourg | 5.28 | 72.40 | 77 | Kenya | 4.13 | 31.18 |
| 18 | Belgium | 5.27 | 72.04 | 78 | Colombia | 4.12 | 30.82 |
| 18 | Bhutan | 5.27 | 72.04 | 78 | Greece | 4.12 | 30.82 |
| 20 | Netherlands | 5.25 | 71.33 | 80 | India | 4.09 | 29.75 |
| 21 | Switzerland | 5.19 | 69.18 | 80 | Slovakia | 4.09 | 29.75 |
| 22 | Australia | 5.15 | 67.74 | 82 | Madagascar | 4.07 | 29.03 |
| 23 | United States of America | 5.12 | 66.67 | 83 | Malawi | 4.04 | 27.96 |
| 24 | Canada | 5.09 | 65.59 | 83 | Viet Nam | 4.04 | 27.96 |
| 25 | Gambia | 5.03 | 63.44 | 85 | Ecuador | 4.02 | 27.24 |
| 25 | Macedonia, FYR | 5.03 | 63.44 | 86 | Guatemala | 4.01 | 26.88 |
| 27 | Mongolia | 5.02 | 63.08 | 87 | France | 3.98 | 25.81 |
| 28 | Oman | 5.00 | 62.37 | 87 | Uruguay | 3.98 | 25.81 |
| 28 | Thailand | 5.00 | 62.37 | 89 | Lebanon | 3.97 | 25.45 |
| 28 | United Kingdom | 5.00 | 62.37 | 89 | Spain | 3.97 | 25.45 |
| 31 | Ireland | 4.98 | 61.65 | 91 | Mali | 3.93 | 24.01 |
| 32 | Azerbaijan | 4.95 | 60.57 | 92 | Bangladesh | 3.91 | 23.30 |
| 33 | Kazakhstan | 4.93 | 59.86 | 93 | Cyprus | 3.89 | 22.58 |
| 34 | Slovenia | 4.91 | 59.14 | 93 | Nicaragua | 3.89 | 22.58 |
| 35 | Lao PDR | 4.86 | 57.35 | 95 | Dominican Republic | 3.87 | 21.86 |
| 36 | Indonesia | 4.80 | 55.20 | 96 | Croatia | 3.86 | 21.51 |
| 36 | Lithuania | 4.80 | 55.20 | 96 | Ethiopia | 3.86 | 21.51 |
| 36 | Sri Lanka | 4.80 | 55.20 | 96 | Serbia | 3.86 | 21.51 |
| 36 | Uganda | 4.80 | 55.20 | 99 | Japan | 3.79 | 19.00 |
| 40 | Armenia | 4.68 | 50.90 | 100 | Saudi Arabia | 3.72 | 16.49 |
| 40 | Cambodia | 4.68 | 50.90 | 101 | Morocco | 3.71 | 16.13 |
| 42 | Algeria | 4.66 | 50.18 | 101 | Nepal | 3.71 | 16.13 |
| 42 | Germany | 4.66 | 50.18 | 103 | Lesotho | 3.65 | 13.98 |
| 44 | Panama | 4.65 | 49.82 | 104 | Argentina | 3.59 | 11.83 |
| 45 | China | 4.64 | 49.46 | 104 | Paraguay | 3.59 | 11.83 |
| 45 | Russian Federation | 4.64 | 49.46 | 106 | Peru | 3.55 | 10.39 |
| 47 | Ghana | 4.63 | 49.10 | 107 | Turkey | 3.52 | 9.32 |
| 47 | Jordan | 4.63 | 49.10 | 108 | Chile | 3.51 | 8.96 |
| 49 | Georgia | 4.62 | 48.75 | 109 | Bosnia and Herzegovina | 3.49 | 8.24 |
| 50 | Austria | 4.61 | 48.39 | 110 | Iran, Islamic Rep. | 3.47 | 7.53 |
| 51 | Botswana | 4.59 | 47.67 | 111 | El Salvador | 3.46 | 7.17 |
| 52 | Czech Republic | 4.56 | 46.59 | 112 | Pakistan | 3.45 | 6.81 |
| 52 | Israel | 4.56 | 46.59 | 113 | Brazil | 3.44 | 6.45 |
| 54 | Malta | 4.55 | 46.24 | 114 | Hungary | 3.40 | 5.02 |
| 54 | Romania | 4.55 | 46.24 | 114 | Mexico | 3.40 | 5.02 |
| 54 | Trinidad and Tobago | 4.55 | 46.24 | 114 | Yemen | 3.40 | 5.02 |
| 57 | Ukraine | 4.51 | 44.80 | 117 | Italy | 3.34 | 2.87 |
| 58 | Bulgaria | 4.50 | 44.44 | 117 | Korea, Rep. | 3.34 | 2.87 |
| 58 | Senegal | 4.50 | 44.44 | 119 | Bolivia, Plurinational St. | 3.26 | 0.00 |
| 60 | South Africa | 4.48 | 43.73 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

Pillar 3

Grow

3.1.1 Vocational enrolment

Vocational enrolment (%) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1 | Bolivia, Plurinational St..... | 62.14 | 100.00 | 61 | Malaysia..... | 11.16 | 17.91 |
| 2 | Netherlands..... | 48.20 | 77.55 | 62 | Kazakhstan..... | 10.93 | 17.54 |
| 3 | Finland..... | 47.73 | 76.80 | 63 | Armenia..... | 10.52 | 16.88 |
| 4 | Belgium..... | 45.73 | 73.57 | 64 | Kyrgyzstan..... | 10.21 | 16.38 |
| 5 | Slovenia..... | 41.74 | 67.15 | 65 | Thailand..... | 10.14 | 16.26 |
| 6 | Honduras..... | 40.97 | 65.91 | 66 | Lithuania..... | 9.72 | 15.59 |
| 7 | Croatia..... | 40.22 | 64.70 | 67 | Mongolia..... | 9.70 | 15.56 |
| 8 | Czech Republic..... | 39.18 | 63.03 | 68 | Gambia..... | 9.62 | 15.43 |
| 9 | Bosnia and Herzegovina..... | 38.39 | 61.76 | 69 | Korea, Rep..... | 9.06 | 14.52 |
| 10 | Switzerland..... | 37.42 | 60.19 | 70 | Albania..... | 8.65 | 13.86 |
| 11 | Austria..... | 35.98 | 57.87 | 71 | Algeria..... | 8.33 | 13.35 |
| 12 | Serbia..... | 35.69 | 57.41 | 72 | Cyprus..... | 8.20 | 13.14 |
| 13 | Italy..... | 34.22 | 55.04 | 73 | Ukraine..... | 8.15 | 13.06 |
| 14 | Australia..... | 33.46 | 53.82 | 74 | Ethiopia..... | 7.99 | 12.80 |
| 15 | Montenegro..... | 32.60 | 52.43 | 75 | Malta..... | 7.57 | 12.13 |
| 16 | Slovakia..... | 32.04 | 51.53 | 76 | Colombia..... | 7.40 | 11.85 |
| 17 | United Kingdom..... | 31.81 | 51.16 | 77 | Bahrain..... | 7.21 | 11.55 |
| 18 | Luxembourg..... | 31.77 | 51.10 | 78 | Tunisia..... | 6.15 | 9.84 |
| 19 | Bulgaria..... | 30.94 | 49.76 | 79 | Morocco..... | 6.09 | 9.74 |
| 20 | Macedonia, FYR..... | 30.33 | 48.78 | 80 | Sri Lanka..... | 5.75 | 9.19 |
| 21 | Norway..... | 28.56 | 45.93 | 81 | Botswana..... | 5.66 | 9.05 |
| 22 | Poland..... | 28.28 | 45.48 | 82 | Saudi Arabia..... | 5.39 | 8.62 |
| 23 | Romania..... | 28.01 | 45.04 | 83 | South Africa..... | 5.09 | 8.13 |
| 24 | Portugal..... | 27.74 | 44.61 | 84 | Dominican Republic..... | 4.97 | 7.94 |
| 25 | Sweden..... | 26.92 | 43.29 | 85 | Mozambique..... | 4.88 | 7.79 |
| 26 | Guatemala..... | 26.80 | 43.09 | 86 | Venezuela, Bolivarian Rep..... | 4.84 | 7.73 |
| 27 | Uruguay..... | 24.75 | 39.79 | 87 | Senegal..... | 4.78 | 7.63 |
| 28 | Costa Rica..... | 24.06 | 38.68 | 88 | Georgia..... | 4.47 | 7.13 |
| 29 | Denmark..... | 23.71 | 38.12 | 89 | Canada..... | 4.43 | 7.07 |
| 30 | Latvia..... | 22.13 | 35.57 | 90 | Uganda..... | 4.14 | 6.60 |
| 31 | Turkey..... | 21.49 | 34.54 | 91 | Bangladesh..... | 4.13 | 6.59 |
| 32 | Egypt..... | 21.04 | 33.82 | 92 | Jordan..... | 3.77 | 6.01 |
| 33 | Iceland..... | 20.97 | 33.70 | 93 | Brazil..... | 3.71 | 5.91 |
| 34 | China..... | 20.38 | 32.75 | 94 | Lesotho..... | 3.55 | 5.65 |
| 35 | Chile..... | 20.15 | 32.38 | 95 | Pakistan..... | 2.73 | 4.33 |
| 36 | Israel..... | 19.83 | 31.87 | 96 | Kuwait..... | 2.54 | 4.03 |
| 37 | Estonia..... | 19.24 | 30.92 | 97 | Cambodia..... | 2.28 | 3.61 |
| 38 | France..... | 18.64 | 29.95 | 98 | Bhutan..... | 1.89 | 2.98 |
| 39 | Indonesia..... | 18.59 | 29.87 | 99 | Madagascar..... | 1.80 | 2.83 |
| 40 | Germany..... | 18.57 | 29.84 | 100 | Ghana..... | 1.77 | 2.79 |
| 41 | Spain..... | 18.40 | 29.57 | 101 | Lao PDR..... | 1.49 | 2.33 |
| 42 | El Salvador..... | 17.96 | 28.86 | 102 | Nicaragua..... | 1.48 | 2.32 |
| 43 | Greece..... | 17.25 | 27.71 | 103 | Peru..... | 1.40 | 2.19 |
| 44 | New Zealand..... | 17.20 | 27.63 | 104 | India..... | 1.23 | 1.92 |
| 45 | Mexico..... | 16.63 | 26.71 | 105 | Qatar..... | 0.70 | 1.06 |
| 46 | Russian Federation..... | 16.37 | 26.30 | 106 | Yemen..... | 0.66 | 1.00 |
| 47 | Ireland..... | 16.18 | 25.99 | 107 | Nepal..... | 0.65 | 0.98 |
| 48 | Lebanon..... | 15.67 | 25.17 | 108 | Kenya..... | 0.49 | 0.72 |
| 49 | Paraguay..... | 15.56 | 24.99 | 109 | Oman..... | 0.04 | 0.00 |
| 50 | Ecuador..... | 15.26 | 24.51 | | Argentina..... | n/a | n/a |
| 51 | Rwanda..... | 14.98 | 24.06 | | Azerbaijan..... | n/a | n/a |
| 52 | Iran, Islamic Rep..... | 14.57 | 23.40 | | Malawi..... | n/a | n/a |
| 53 | Panama..... | 14.01 | 22.50 | | Namibia..... | n/a | n/a |
| 54 | Moldova, Rep..... | 13.21 | 21.21 | | Philippines..... | n/a | n/a |
| 55 | Mali..... | 12.99 | 20.85 | | Trinidad and Tobago..... | n/a | n/a |
| 56 | Hungary..... | 12.80 | 20.55 | | United Arab Emirates..... | n/a | n/a |
| 57 | Tanzania, United Rep..... | 12.10 | 19.42 | | United States of America..... | n/a | n/a |
| 58 | Japan..... | 11.58 | 18.58 | | Viet Nam..... | n/a | n/a |
| 59 | Singapore..... | 11.57 | 18.57 | | Zimbabwe..... | n/a | n/a |
| 60 | Mauritius..... | 11.39 | 18.28 | | | | |

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 2006.

3.1.2 Tertiary enrolment

Tertiary enrolment (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|--------|--------|------|----------------------------|-------|-------|
| 1 | Greece | 113.87 | 100.00 | 61 | China | 43.39 | 37.67 |
| 2 | Korea, Rep. | 95.35 | 83.62 | 62 | Moldova, Rep. | 41.21 | 35.74 |
| 3 | Australia | 90.31 | 79.16 | 63 | Peru | 40.51 | 35.12 |
| 4 | Spain | 89.67 | 78.60 | 64 | Ecuador | 40.48 | 35.09 |
| 5 | Chile | 88.58 | 77.63 | 65 | Macedonia, FYR | 39.59 | 34.31 |
| 6 | Finland | 87.29 | 76.49 | 66 | Panama | 38.74 | 33.55 |
| 7 | Turkey | 86.31 | 75.63 | 67 | Lebanon | 38.48 | 33.32 |
| 8 | United States of America | 85.80 | 75.17 | 68 | Bahrain | 37.38 | 32.35 |
| 9 | Slovenia | 82.93 | 72.64 | 69 | Algeria | 36.92 | 31.94 |
| 10 | Argentina | 82.92 | 72.63 | 70 | Mauritius | 36.67 | 31.72 |
| 11 | Ukraine | 82.31 | 72.09 | 71 | Egypt | 36.23 | 31.33 |
| 12 | Austria | 81.54 | 71.41 | 72 | Philippines | 35.75 | 30.91 |
| 13 | Denmark | 81.52 | 71.39 | 73 | Paraguay | 35.08 | 30.32 |
| 14 | Iceland | 81.26 | 71.16 | 74 | Tunisia | 34.61 | 29.90 |
| 15 | New Zealand | 80.88 | 70.82 | 75 | Oman | 31.92 | 27.52 |
| 16 | Russian Federation | 78.65 | 68.85 | 76 | Indonesia | 31.10 | 26.80 |
| 17 | Netherlands | 78.50 | 68.72 | 77 | Mexico | 29.94 | 25.77 |
| 18 | Ireland | 77.63 | 67.95 | 78 | El Salvador | 28.85 | 24.81 |
| 19 | Venezuela, Bolivarian Rep. | 76.98 | 67.37 | 79 | Viet Nam | 28.84 | 24.80 |
| 20 | Norway | 76.70 | 67.13 | 80 | Morocco | 28.14 | 24.18 |
| 21 | Bulgaria | 73.93 | 64.68 | 81 | Botswana | 27.51 | 23.62 |
| 22 | Belgium | 73.32 | 64.14 | 82 | Kuwait | 27.03 | 23.20 |
| 23 | Iran, Islamic Rep. | 71.88 | 62.86 | 83 | Malaysia | 26.07 | 22.35 |
| 24 | Poland | 71.16 | 62.23 | 84 | India | 25.54 | 21.88 |
| 25 | Singapore | 69.81 | 61.03 | 85 | Azerbaijan | 25.48 | 21.83 |
| 26 | Estonia | 69.55 | 60.80 | 86 | Honduras | 21.18 | 18.02 |
| 27 | Croatia | 69.54 | 60.79 | 87 | Sri Lanka | 19.80 | 16.80 |
| 28 | Mongolia | 68.57 | 59.94 | 88 | Luxembourg | 19.41 | 16.46 |
| 29 | Lithuania | 68.53 | 59.90 | 89 | South Africa | 19.38 | 16.43 |
| 30 | Germany | 68.27 | 59.67 | 90 | Guatemala | 18.33 | 15.50 |
| 31 | Latvia | 67.04 | 58.58 | 91 | Qatar | 17.22 | 14.52 |
| 32 | Israel | 66.18 | 57.82 | 92 | Lao PDR | 16.91 | 14.25 |
| 33 | Czech Republic | 66.02 | 57.68 | 93 | Ghana | 15.94 | 13.39 |
| 34 | Portugal | 65.61 | 57.32 | 94 | Nepal | 14.94 | 12.51 |
| 35 | France | 64.39 | 56.24 | 95 | Bangladesh | 13.44 | 11.18 |
| 36 | Japan | 63.36 | 55.33 | 96 | Cambodia | 13.09 | 10.87 |
| 37 | Uruguay | 63.13 | 55.13 | 97 | Bhutan | 10.93 | 8.96 |
| 38 | Italy | 63.10 | 55.10 | 98 | Senegal | 10.39 | 8.48 |
| 39 | Saudi Arabia | 63.07 | 55.07 | 99 | Yemen | 9.97 | 8.11 |
| 40 | Sweden | 62.35 | 54.44 | 100 | Pakistan | 9.93 | 8.07 |
| 41 | Cyprus | 60.10 | 52.45 | 101 | Lesotho | 9.84 | 8.00 |
| 42 | Serbia | 58.29 | 50.84 | 102 | Namibia | 9.33 | 7.54 |
| 43 | Albania | 58.11 | 50.69 | 103 | Zimbabwe | 8.43 | 6.75 |
| 44 | Switzerland | 57.23 | 49.91 | 104 | Ethiopia | 8.13 | 6.48 |
| 45 | United Kingdom | 56.48 | 49.24 | 105 | Rwanda | 7.53 | 5.95 |
| 46 | Colombia | 55.59 | 48.46 | 106 | Mali | 6.87 | 5.37 |
| 47 | Montenegro | 55.34 | 48.24 | 107 | Mozambique | 5.97 | 4.57 |
| 48 | Costa Rica | 53.63 | 46.72 | 108 | Madagascar | 4.78 | 3.52 |
| 49 | Romania | 53.22 | 46.36 | 109 | Uganda | 4.48 | 3.25 |
| 50 | Slovakia | 52.92 | 46.10 | 110 | Kenya | 4.05 | 2.87 |
| 51 | Hungary | 50.86 | 44.27 | 111 | Tanzania, United Rep. | 3.65 | 2.52 |
| 52 | Brazil | 49.28 | 42.88 | 112 | Gambia | 3.10 | 2.03 |
| 53 | Thailand | 48.86 | 42.50 | 113 | Malawi | 0.80 | 0.00 |
| 54 | Dominican Republic | 47.52 | 41.32 | | Bolivia, Plurinational St. | n/a | n/a |
| 55 | Malta | 46.97 | 40.83 | | Bosnia and Herzegovina | n/a | n/a |
| 56 | Kazakhstan | 46.26 | 40.21 | | Canada | n/a | n/a |
| 57 | Kyrgyzstan | 45.92 | 39.90 | | Nicaragua | n/a | n/a |
| 58 | Jordan | 44.87 | 38.98 | | Trinidad and Tobago | n/a | n/a |
| 59 | Armenia | 44.31 | 38.48 | | United Arab Emirates | n/a | n/a |
| 60 | Georgia | 43.42 | 37.69 | | | | |

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 2006.

3.1.3 Tertiary education expenditure

Government expenditure on tertiary education (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------------|-------|--------|------|-----------------------------|-------|-------|
| 1 | Botswana..... | 4.00 | 100.00 | 61 | Israel..... | .093 | 21.48 |
| 1 | Lesotho..... | 4.72 | 100.00 | 62 | Honduras..... | .091 | 20.97 |
| 3 | Denmark..... | 2.32 | 57.03 | 63 | Hungary..... | .090 | 20.72 |
| 4 | Ecuador..... | 2.14 | 52.43 | 63 | Portugal..... | .090 | 20.72 |
| 5 | Senegal..... | 2.08 | 50.90 | 65 | Mozambique..... | .089 | 20.46 |
| 6 | Finland..... | 2.01 | 49.10 | 66 | Czech Republic..... | .088 | 20.20 |
| 7 | Sweden..... | 1.96 | 47.83 | 67 | Iran, Islamic Rep..... | .086 | 19.69 |
| 8 | Namibia..... | 1.93 | 47.06 | 68 | Viet Nam..... | .085 | 19.44 |
| 9 | Ethiopia..... | 1.92 | 46.80 | 69 | Russian Federation..... | .082 | 18.67 |
| 10 | Bolivia, Plurinational St..... | 1.91 | 46.55 | 70 | Italy..... | .081 | 18.41 |
| 10 | Norway..... | 1.91 | 46.55 | 71 | Mali..... | .079 | 17.90 |
| 12 | Ukraine..... | 1.88 | 45.78 | 72 | Albania..... | .078 | 17.65 |
| 13 | Austria..... | 1.80 | 43.73 | 72 | Japan..... | .078 | 17.65 |
| 14 | Costa Rica..... | 1.69 | 40.92 | 74 | Tanzania, United Rep..... | .075 | 16.88 |
| 15 | Netherlands..... | 1.62 | 39.13 | 75 | Lebanon..... | .074 | 16.62 |
| 16 | Malta..... | 1.60 | 38.62 | 75 | South Africa..... | .074 | 16.62 |
| 17 | Turkey..... | 1.59 | 38.36 | 77 | Romania..... | .072 | 16.11 |
| 18 | New Zealand..... | 1.58 | 38.11 | 78 | Panama..... | .071 | 15.86 |
| 18 | Tunisia..... | 1.58 | 38.11 | 78 | Rwanda..... | .071 | 15.86 |
| 20 | Venezuela, Bolivarian Rep..... | 1.55 | 37.34 | 80 | Kenya..... | .069 | 15.35 |
| 21 | Iceland..... | 1.51 | 36.32 | 81 | Bulgaria..... | .065 | 14.32 |
| 22 | Cyprus..... | 1.44 | 34.53 | 82 | Thailand..... | .064 | 14.07 |
| 23 | Zimbabwe..... | 1.42 | 34.02 | 83 | Peru..... | .063 | 13.81 |
| 24 | Belgium..... | 1.40 | 33.50 | 84 | Pakistan..... | .061 | 13.30 |
| 24 | United Kingdom..... | 1.40 | 33.50 | 85 | Indonesia..... | .050 | 10.49 |
| 26 | Australia..... | 1.37 | 32.74 | 86 | Lao PDR..... | .046 | 9.46 |
| 27 | Estonia..... | 1.36 | 32.48 | 87 | Bangladesh..... | .044 | 8.95 |
| 27 | Malawi..... | 1.36 | 32.48 | 88 | Kazakhstan..... | .043 | 8.70 |
| 27 | Malaysia..... | 1.36 | 32.48 | 89 | Madagascar..... | .042 | 8.44 |
| 30 | United States of America..... | 1.35 | 32.23 | 89 | Sri Lanka..... | .042 | 8.44 |
| 31 | Canada..... | 1.33 | 31.71 | 91 | Guatemala..... | .041 | 8.18 |
| 31 | Lithuania..... | 1.33 | 31.71 | 92 | Nepal..... | .040 | 7.93 |
| 33 | Switzerland..... | 1.32 | 31.46 | 93 | Georgia..... | .038 | 7.42 |
| 34 | Germany..... | 1.31 | 31.20 | 94 | Armenia..... | .036 | 6.91 |
| 35 | Serbia..... | 1.29 | 30.69 | 94 | Azerbaijan..... | .036 | 6.91 |
| 36 | Moldova, Rep..... | 1.28 | 30.43 | 96 | Mauritius..... | .034 | 6.39 |
| 37 | France..... | 1.24 | 29.41 | 97 | Philippines..... | .032 | 5.88 |
| 38 | Kuwait..... | 1.23 | 29.16 | 98 | Dominican Republic..... | .030 | 5.37 |
| 39 | Poland..... | 1.21 | 28.64 | 98 | Gambia..... | .030 | 5.37 |
| 40 | Chile..... | 1.18 | 27.88 | 100 | El Salvador..... | .028 | 4.86 |
| 41 | Algeria..... | 1.17 | 27.62 | 100 | Uganda..... | .028 | 4.86 |
| 41 | Nicaragua..... | 1.17 | 27.62 | 102 | Kyrgyzstan..... | .026 | 4.35 |
| 41 | Uruguay..... | 1.17 | 27.62 | 103 | Mongolia..... | .018 | 2.30 |
| 44 | Ireland..... | 1.15 | 27.11 | 104 | Bhutan..... | .011 | 0.51 |
| 45 | Argentina..... | 1.13 | 26.60 | 105 | Cambodia..... | .009 | 0.00 |
| 45 | Ghana..... | 1.13 | 26.60 | | Bahrain..... | n/a | n/a |
| 45 | Oman..... | 1.13 | 26.60 | | Bosnia and Herzegovina..... | n/a | n/a |
| 45 | Slovenia..... | 1.13 | 26.60 | | China..... | n/a | n/a |
| 49 | Paraguay..... | 1.11 | 26.09 | | Egypt..... | n/a | n/a |
| 50 | India..... | 1.10 | 25.83 | | Greece..... | n/a | n/a |
| 51 | Brazil..... | 1.09 | 25.58 | | Jordan..... | n/a | n/a |
| 52 | Morocco..... | 1.06 | 24.81 | | Luxembourg..... | n/a | n/a |
| 53 | Mexico..... | 1.05 | 24.55 | | Macedonia, FYR..... | n/a | n/a |
| 54 | Singapore..... | 1.03 | 24.04 | | Montenegro..... | n/a | n/a |
| 55 | Croatia..... | 1.00 | 23.27 | | Qatar..... | n/a | n/a |
| 56 | Korea, Rep..... | 0.97 | 22.51 | | Saudi Arabia..... | n/a | n/a |
| 56 | Slovakia..... | 0.97 | 22.51 | | Trinidad and Tobago..... | n/a | n/a |
| 56 | Spain..... | 0.97 | 22.51 | | United Arab Emirates..... | n/a | n/a |
| 59 | Colombia..... | 0.96 | 22.25 | | Yemen..... | n/a | n/a |
| 59 | Latvia..... | 0.96 | 22.25 | | | | |

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 2006.

3.1.4 Reading, maths, and science

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

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|--------|--------|------|----------------------------|--------|-------|
| 1 | Singapore | 551.62 | 100.00 | 61 | Indonesia | 395.49 | 26.56 |
| 2 | Japan | 528.93 | 89.33 | 62 | Brazil | 395.03 | 26.34 |
| 3 | Estonia | 524.29 | 87.14 | 63 | Peru | 393.60 | 25.67 |
| 4 | Canada | 523.34 | 86.70 | 64 | Lebanon | 376.43 | 17.59 |
| 5 | Finland | 522.72 | 86.41 | 65 | Tunisia | 371.43 | 15.24 |
| 6 | Korea, Rep. | 519.12 | 84.71 | 66 | Macedonia, FYR | 368.91 | 14.06 |
| 7 | China | 514.34 | 82.46 | 67 | Algeria | 361.74 | 10.68 |
| 8 | Slovenia | 509.33 | 80.11 | 68 | Dominican Republic | 339.03 | 0.00 |
| 9 | Ireland | 509.04 | 79.97 | | Armenia | n/a | n/a |
| 10 | Germany | 508.07 | 79.51 | | Azerbaijan | n/a | n/a |
| 11 | Netherlands | 507.93 | 79.45 | | Bahrain | n/a | n/a |
| 12 | Switzerland | 506.32 | 78.69 | | Bangladesh | n/a | n/a |
| 13 | New Zealand | 505.93 | 78.51 | | Bhutan | n/a | n/a |
| 14 | Norway | 504.47 | 77.82 | | Bolivia, Plurinational St. | n/a | n/a |
| 15 | Denmark | 504.28 | 77.73 | | Bosnia and Herzegovina | n/a | n/a |
| 16 | Poland | 503.87 | 77.54 | | Botswana | n/a | n/a |
| 17 | Belgium | 502.50 | 76.89 | | Cambodia | n/a | n/a |
| 18 | Australia | 502.26 | 76.78 | | Ecuador | n/a | n/a |
| 19 | Viet Nam | 501.98 | 76.65 | | Egypt | n/a | n/a |
| 20 | United Kingdom | 499.89 | 75.67 | | El Salvador | n/a | n/a |
| 21 | Portugal | 496.95 | 74.28 | | Ethiopia | n/a | n/a |
| 22 | Sweden | 495.83 | 73.76 | | Gambia | n/a | n/a |
| 23 | France | 495.73 | 73.71 | | Ghana | n/a | n/a |
| 24 | Austria | 492.22 | 72.06 | | Guatemala | n/a | n/a |
| 25 | Russian Federation | 491.77 | 71.85 | | Honduras | n/a | n/a |
| 26 | Spain | 491.40 | 71.67 | | India | n/a | n/a |
| 27 | Czech Republic | 490.80 | 71.39 | | Iran, Islamic Rep. | n/a | n/a |
| 28 | United States of America | 487.60 | 69.89 | | Kenya | n/a | n/a |
| 29 | Latvia | 486.76 | 69.49 | | Kuwait | n/a | n/a |
| 30 | Italy | 485.01 | 68.67 | | Kyrgyzstan | n/a | n/a |
| 31 | Luxembourg | 483.34 | 67.88 | | Lao PDR | n/a | n/a |
| 32 | Iceland | 480.93 | 66.75 | | Lesotho | n/a | n/a |
| 33 | Croatia | 475.43 | 64.16 | | Madagascar | n/a | n/a |
| 34 | Lithuania | 475.40 | 64.15 | | Malawi | n/a | n/a |
| 35 | Hungary | 474.37 | 63.66 | | Mali | n/a | n/a |
| 36 | Israel | 471.73 | 62.42 | | Mauritius | n/a | n/a |
| 37 | Malta | 463.36 | 58.48 | | Mongolia | n/a | n/a |
| 38 | Slovakia | 462.84 | 58.24 | | Morocco | n/a | n/a |
| 39 | Greece | 458.50 | 56.20 | | Mozambique | n/a | n/a |
| 40 | Kazakhstan | 447.81 | 51.17 | | Namibia | n/a | n/a |
| 41 | Chile | 442.73 | 48.78 | | Nepal | n/a | n/a |
| 42 | Malaysia | 439.88 | 47.44 | | Nicaragua | n/a | n/a |
| 43 | Bulgaria | 439.56 | 47.29 | | Oman | n/a | n/a |
| 44 | Cyprus | 437.51 | 46.32 | | Pakistan | n/a | n/a |
| 45 | Romania | 437.49 | 46.31 | | Panama | n/a | n/a |
| 46 | United Arab Emirates | 432.59 | 44.01 | | Paraguay | n/a | n/a |
| 47 | Uruguay | 429.98 | 42.78 | | Philippines | n/a | n/a |
| 48 | Turkey | 424.76 | 40.33 | | Rwanda | n/a | n/a |
| 49 | Trinidad and Tobago | 423.04 | 39.52 | | Saudi Arabia | n/a | n/a |
| 50 | Argentina | 422.19 | 39.12 | | Senegal | n/a | n/a |
| 51 | Moldova, Rep. | 421.30 | 38.70 | | Serbia | n/a | n/a |
| 52 | Montenegro | 418.71 | 37.48 | | South Africa | n/a | n/a |
| 53 | Costa Rica | 415.78 | 36.10 | | Sri Lanka | n/a | n/a |
| 54 | Mexico | 415.67 | 36.05 | | Tanzania, United Rep. | n/a | n/a |
| 55 | Thailand | 415.31 | 35.88 | | Uganda | n/a | n/a |
| 56 | Albania | 415.21 | 35.83 | | Ukraine | n/a | n/a |
| 57 | Colombia | 410.09 | 33.43 | | Venezuela, Bolivarian Rep. | n/a | n/a |
| 58 | Qatar | 407.30 | 32.11 | | Yemen | n/a | n/a |
| 59 | Georgia | 405.42 | 31.23 | | Zimbabwe | n/a | n/a |
| 60 | Jordan | 399.01 | 28.21 | | | | |

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 2006.

3.1.5 University ranking

QS World University Ranking | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | United States of America | 99.10 | 100.00 | 61 | Peru | 21.07 | 21.26 |
| 2 | United Kingdom | 97.83 | 98.72 | 62 | Croatia | 20.40 | 20.59 |
| 3 | Singapore | 94.05 | 94.90 | 63 | Bulgaria | 20.00 | 20.18 |
| 4 | Switzerland | 87.17 | 87.96 | 64 | Latvia | 19.10 | 19.27 |
| 5 | Canada | 85.63 | 86.41 | 65 | Azerbaijan | 18.63 | 18.80 |
| 6 | Australia | 85.33 | 86.10 | 66 | Ecuador | 18.60 | 18.77 |
| 7 | China | 84.43 | 85.20 | 67 | Bangladesh | 18.00 | 18.16 |
| 8 | Japan | 83.03 | 83.78 | 68 | Sri Lanka | 17.20 | 17.36 |
| 9 | Korea, Rep. | 79.97 | 80.70 | 69 | Romania | 16.40 | 16.55 |
| 10 | France | 78.73 | 79.45 | 70 | Kuwait | 15.70 | 15.84 |
| 11 | Germany | 76.03 | 76.72 | 71 | Kenya | 13.80 | 13.93 |
| 12 | Netherlands | 75.80 | 76.49 | 72 | Serbia | 12.80 | 12.92 |
| 13 | Sweden | 71.57 | 72.22 | 73 | Uganda | 8.00 | 8.07 |
| 14 | Denmark | 69.97 | 70.61 | 74 | Tanzania, United Rep. | 7.60 | 7.67 |
| 15 | Belgium | 66.17 | 66.77 | 75 | Ghana | 7.00 | 7.06 |
| 16 | Ireland | 61.30 | 61.86 | 76 | Albania | 0.00 | 0.00 |
| 17 | Finland | 60.77 | 61.32 | 76 | Algeria | 0.00 | 0.00 |
| 18 | New Zealand | 60.20 | 60.75 | 76 | Armenia | 0.00 | 0.00 |
| 19 | India | 57.07 | 57.59 | 76 | Bhutan | 0.00 | 0.00 |
| 20 | Spain | 56.30 | 56.81 | 76 | Bolivia, Plurinational St. | 0.00 | 0.00 |
| 21 | Israel | 56.10 | 56.61 | 76 | Bosnia and Herzegovina | 0.00 | 0.00 |
| 22 | Norway | 55.30 | 55.80 | 76 | Botswana | 0.00 | 0.00 |
| 23 | Italy | 52.90 | 53.38 | 76 | Cambodia | 0.00 | 0.00 |
| 24 | Austria | 52.43 | 52.91 | 76 | Cyprus | 0.00 | 0.00 |
| 25 | Brazil | 52.27 | 52.74 | 76 | Dominican Republic | 0.00 | 0.00 |
| 26 | Russian Federation | 51.53 | 52.00 | 76 | El Salvador | 0.00 | 0.00 |
| 27 | Malaysia | 49.13 | 49.58 | 76 | Ethiopia | 0.00 | 0.00 |
| 28 | Argentina | 48.13 | 48.57 | 76 | Gambia | 0.00 | 0.00 |
| 29 | Saudi Arabia | 48.03 | 48.47 | 76 | Georgia | 0.00 | 0.00 |
| 30 | Chile | 47.20 | 47.63 | 76 | Guatemala | 0.00 | 0.00 |
| 31 | South Africa | 46.60 | 47.02 | 76 | Honduras | 0.00 | 0.00 |
| 32 | Mexico | 44.43 | 44.83 | 76 | Iceland | 0.00 | 0.00 |
| 33 | Colombia | 40.60 | 40.97 | 76 | Kyrgyzstan | 0.00 | 0.00 |
| 34 | Portugal | 38.97 | 39.32 | 76 | Lao PDR | 0.00 | 0.00 |
| 35 | Thailand | 38.17 | 38.52 | 76 | Lesotho | 0.00 | 0.00 |
| 36 | Kazakhstan | 36.07 | 36.40 | 76 | Luxembourg | 0.00 | 0.00 |
| 37 | Czech Republic | 33.97 | 34.28 | 76 | Macedonia, FYR | 0.00 | 0.00 |
| 38 | Turkey | 33.53 | 33.83 | 76 | Madagascar | 0.00 | 0.00 |
| 39 | United Arab Emirates | 32.47 | 32.76 | 76 | Malawi | 0.00 | 0.00 |
| 40 | Indonesia | 32.33 | 32.62 | 76 | Mali | 0.00 | 0.00 |
| 41 | Poland | 31.73 | 32.02 | 76 | Malta | 0.00 | 0.00 |
| 42 | Greece | 31.47 | 31.76 | 76 | Mauritius | 0.00 | 0.00 |
| 43 | Lebanon | 30.80 | 31.08 | 76 | Moldova, Rep. | 0.00 | 0.00 |
| 44 | Qatar | 29.70 | 29.97 | 76 | Mongolia | 0.00 | 0.00 |
| 45 | Estonia | 29.55 | 29.82 | 76 | Montenegro | 0.00 | 0.00 |
| 46 | Ukraine | 29.17 | 29.43 | 76 | Morocco | 0.00 | 0.00 |
| 47 | Iran, Islamic Rep. | 28.65 | 28.91 | 76 | Mozambique | 0.00 | 0.00 |
| 48 | Egypt | 28.50 | 28.76 | 76 | Namibia | 0.00 | 0.00 |
| 49 | Philippines | 27.57 | 27.82 | 76 | Nepal | 0.00 | 0.00 |
| 50 | Oman | 27.40 | 27.65 | 76 | Nicaragua | 0.00 | 0.00 |
| 51 | Slovenia | 25.50 | 25.73 | 76 | Panama | 0.00 | 0.00 |
| 52 | Hungary | 24.77 | 24.99 | 76 | Paraguay | 0.00 | 0.00 |
| 53 | Jordan | 23.80 | 24.02 | 76 | Rwanda | 0.00 | 0.00 |
| 54 | Bahrain | 23.10 | 23.31 | 76 | Senegal | 0.00 | 0.00 |
| 55 | Pakistan | 22.70 | 22.91 | 76 | Trinidad and Tobago | 0.00 | 0.00 |
| 56 | Uruguay | 22.50 | 22.70 | 76 | Tunisia | 0.00 | 0.00 |
| 57 | Slovakia | 22.40 | 22.60 | 76 | Viet Nam | 0.00 | 0.00 |
| 58 | Venezuela, Bolivarian Rep. | 22.10 | 22.30 | 76 | Yemen | 0.00 | 0.00 |
| 59 | Lithuania | 22.07 | 22.27 | 76 | Zimbabwe | 0.00 | 0.00 |
| 60 | Costa Rica | 21.70 | 21.90 | | | | |

SOURCE: Quacquarelli Symonds Ltd (QS), QS World University Ranking 2014/2015, 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 2006.

3.2.1 Quality of management schools

Average answer to the question: In your country, how do you assess the following: Quality of business schools [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1 | Switzerland..... | 6.31 | 100.00 | 61 | Ecuador..... | 4.18 | 43.65 |
| 2 | United Kingdom..... | 6.13 | 95.24 | 62 | Poland..... | 4.17 | 43.39 |
| 3 | Belgium..... | 6.07 | 93.65 | 63 | Lesotho..... | 4.14 | 42.59 |
| 4 | Singapore..... | 5.96 | 90.74 | 64 | Montenegro..... | 4.12 | 42.06 |
| 5 | Qatar..... | 5.95 | 90.48 | 65 | Hungary..... | 4.11 | 41.80 |
| 6 | Netherlands..... | 5.81 | 86.77 | 66 | Bhutan..... | 4.08 | 41.01 |
| 7 | United States of America..... | 5.72 | 84.39 | 66 | Morocco..... | 4.08 | 41.01 |
| 8 | Canada..... | 5.68 | 83.33 | 66 | Russian Federation..... | 4.08 | 41.01 |
| 9 | Lebanon..... | 5.66 | 82.80 | 69 | Thailand..... | 4.06 | 40.48 |
| 10 | Norway..... | 5.57 | 80.42 | 70 | Peru..... | 4.05 | 40.21 |
| 11 | Denmark..... | 5.55 | 79.89 | 70 | Tunisia..... | 4.05 | 40.21 |
| 12 | Ireland..... | 5.54 | 79.63 | 72 | Greece..... | 4.04 | 39.95 |
| 12 | Spain..... | 5.54 | 79.63 | 73 | Madagascar..... | 4.01 | 39.15 |
| 14 | France..... | 5.50 | 78.57 | 74 | Croatia..... | 3.98 | 38.36 |
| 15 | Australia..... | 5.44 | 76.98 | 75 | Pakistan..... | 3.96 | 37.83 |
| 15 | United Arab Emirates..... | 5.44 | 76.98 | 76 | Lao PDR..... | 3.95 | 37.57 |
| 17 | Finland..... | 5.43 | 76.72 | 77 | Dominican Republic..... | 3.92 | 36.77 |
| 18 | Sweden..... | 5.42 | 76.46 | 77 | Panama..... | 3.92 | 36.77 |
| 19 | Iceland..... | 5.41 | 76.19 | 79 | Macedonia, FYR..... | 3.90 | 36.24 |
| 20 | South Africa..... | 5.40 | 75.93 | 80 | Azerbaijan..... | 3.88 | 35.71 |
| 21 | Israel..... | 5.37 | 75.13 | 81 | Iran, Islamic Rep..... | 3.87 | 35.45 |
| 22 | Germany..... | 5.35 | 74.60 | 82 | Mali..... | 3.85 | 34.92 |
| 23 | New Zealand..... | 5.27 | 72.49 | 83 | Kuwait..... | 3.84 | 34.66 |
| 24 | Malaysia..... | 5.26 | 72.22 | 84 | Ukraine..... | 3.83 | 34.39 |
| 25 | Chile..... | 5.22 | 71.16 | 85 | Honduras..... | 3.81 | 33.86 |
| 26 | Italy..... | 5.19 | 70.37 | 86 | Georgia..... | 3.80 | 33.60 |
| 27 | Costa Rica..... | 5.17 | 69.84 | 87 | Brazil..... | 3.79 | 33.33 |
| 28 | Austria..... | 5.06 | 66.93 | 88 | Uganda..... | 3.78 | 33.07 |
| 29 | Estonia..... | 4.92 | 63.23 | 89 | Cyprus..... | 3.77 | 32.80 |
| 30 | Malta..... | 4.90 | 62.70 | 89 | Zimbabwe..... | 3.77 | 32.80 |
| 30 | Trinidad and Tobago..... | 4.90 | 62.70 | 91 | Slovakia..... | 3.76 | 32.54 |
| 32 | Bahrain..... | 4.89 | 62.43 | 92 | Kazakhstan..... | 3.73 | 31.75 |
| 33 | Senegal..... | 4.86 | 61.64 | 92 | Serbia..... | 3.73 | 31.75 |
| 34 | Sri Lanka..... | 4.75 | 58.73 | 94 | Botswana..... | 3.71 | 31.22 |
| 35 | Argentina..... | 4.69 | 57.14 | 95 | Nicaragua..... | 3.70 | 30.95 |
| 36 | Portugal..... | 4.68 | 56.88 | 96 | Bangladesh..... | 3.66 | 29.89 |
| 37 | Philippines..... | 4.67 | 56.61 | 97 | Bulgaria..... | 3.64 | 29.37 |
| 38 | Luxembourg..... | 4.65 | 56.08 | 98 | Turkey..... | 3.63 | 29.10 |
| 39 | India..... | 4.62 | 55.29 | 99 | Nepal..... | 3.60 | 28.31 |
| 40 | Latvia..... | 4.59 | 54.50 | 100 | Armenia..... | 3.55 | 26.98 |
| 41 | Kenya..... | 4.57 | 53.97 | 100 | Namibia..... | 3.55 | 26.98 |
| 41 | Mauritius..... | 4.57 | 53.97 | 102 | Bolivia, Plurinational St..... | 3.54 | 26.72 |
| 43 | Guatemala..... | 4.54 | 53.17 | 103 | El Salvador..... | 3.53 | 26.46 |
| 43 | Indonesia..... | 4.54 | 53.17 | 104 | Oman..... | 3.50 | 25.66 |
| 45 | Venezuela, Bolivarian Rep..... | 4.52 | 52.65 | 105 | Ethiopia..... | 3.45 | 24.34 |
| 46 | Slovenia..... | 4.50 | 52.12 | 106 | Romania..... | 3.42 | 23.54 |
| 47 | Ghana..... | 4.49 | 51.85 | 107 | Viet Nam..... | 3.39 | 22.75 |
| 48 | Saudi Arabia..... | 4.41 | 49.74 | 108 | Bosnia and Herzegovina..... | 3.37 | 22.22 |
| 48 | Uruguay..... | 4.41 | 49.74 | 109 | Moldova, Rep..... | 3.33 | 21.16 |
| 50 | Jordan..... | 4.40 | 49.47 | 110 | Algeria..... | 3.30 | 20.37 |
| 51 | Japan..... | 4.35 | 48.15 | 110 | Tanzania, United Rep..... | 3.30 | 20.37 |
| 52 | Rwanda..... | 4.34 | 47.88 | 112 | Cambodia..... | 3.25 | 19.05 |
| 53 | Albania..... | 4.31 | 47.09 | 113 | Paraguay..... | 3.14 | 16.14 |
| 54 | China..... | 4.29 | 46.56 | 114 | Mongolia..... | 3.06 | 14.02 |
| 55 | Czech Republic..... | 4.25 | 45.50 | 115 | Malawi..... | 2.95 | 11.11 |
| 55 | Korea, Rep..... | 4.25 | 45.50 | 116 | Kyrgyzstan..... | 2.91 | 10.05 |
| 57 | Mexico..... | 4.21 | 44.44 | 117 | Mozambique..... | 2.90 | 9.79 |
| 58 | Colombia..... | 4.20 | 44.18 | 118 | Yemen..... | 2.67 | 3.70 |
| 59 | Gambia..... | 4.19 | 43.92 | 119 | Egypt..... | 2.53 | 0.00 |
| 59 | Lithuania..... | 4.19 | 43.92 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

3.2.2 Prevalence of training in firms

Proportion of firms offering formal training (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|--------------------------|-------|-------|
| 1 | China | 79.20 | 100.00 | 61 | Bhutan | 26.00 | 29.82 |
| 2 | Ireland | 73.20 | 92.08 | 62 | Gambia | 25.60 | 29.29 |
| 3 | Sweden | 70.30 | 88.26 | 62 | Mauritius | 25.60 | 29.29 |
| 4 | Ecuador | 65.90 | 82.45 | 64 | Namibia | 25.40 | 29.02 |
| 5 | Colombia | 65.10 | 81.40 | 65 | Latvia | 25.20 | 28.76 |
| 6 | Argentina | 63.60 | 79.42 | 66 | Albania | 23.80 | 26.91 |
| 7 | Kyrgyzstan | 62.70 | 78.23 | 67 | Montenegro | 23.70 | 26.78 |
| 8 | Mongolia | 60.90 | 75.86 | 68 | Ukraine | 22.60 | 25.33 |
| 9 | Peru | 60.10 | 74.80 | 69 | Cambodia | 22.20 | 24.80 |
| 10 | Philippines | 59.80 | 74.41 | 69 | Viet Nam | 22.20 | 24.80 |
| 11 | Chile | 57.50 | 71.37 | 71 | Mozambique | 22.10 | 24.67 |
| 12 | Bolivia, Plurinational St. | 57.10 | 70.84 | 72 | Bangladesh | 21.90 | 24.41 |
| 13 | Dominican Republic | 57.00 | 70.71 | 73 | Ethiopia | 20.80 | 22.96 |
| 14 | Venezuela, Bolivarian Rep. | 56.00 | 69.39 | 74 | Azerbaijan | 20.20 | 22.16 |
| 15 | Rwanda | 55.40 | 68.60 | 75 | Greece | 20.00 | 21.90 |
| 16 | Czech Republic | 55.10 | 68.21 | 76 | Israel | 18.60 | 20.05 |
| 17 | Paraguay | 54.90 | 67.94 | 77 | Malaysia | 18.50 | 19.92 |
| 18 | Costa Rica | 54.70 | 67.68 | 78 | Sri Lanka | 18.40 | 19.79 |
| 19 | El Salvador | 53.80 | 66.49 | 79 | Thailand | 18.00 | 19.26 |
| 20 | Bosnia and Herzegovina | 52.40 | 64.64 | 80 | Mali | 17.70 | 18.87 |
| 21 | Botswana | 51.90 | 63.98 | 81 | Senegal | 17.40 | 18.47 |
| 21 | Guatemala | 51.90 | 63.98 | 82 | Algeria | 17.30 | 18.34 |
| 23 | Spain | 51.30 | 63.19 | 83 | Armenia | 16.20 | 16.89 |
| 24 | Mexico | 50.80 | 62.53 | 84 | Hungary | 15.80 | 16.36 |
| 25 | Croatia | 49.30 | 60.55 | 85 | Yemen | 14.30 | 14.38 |
| 26 | Uruguay | 48.60 | 59.63 | 86 | Madagascar | 12.70 | 12.27 |
| 27 | Nicaragua | 47.20 | 57.78 | 87 | Panama | 11.00 | 10.03 |
| 28 | Macedonia, FYR | 46.90 | 57.39 | 88 | Georgia | 10.50 | 9.37 |
| 29 | Russian Federation | 46.20 | 56.46 | 89 | Indonesia | 7.70 | 5.67 |
| 30 | Slovakia | 43.50 | 52.90 | 90 | Lao PDR | 6.50 | 4.09 |
| 31 | Bulgaria | 42.70 | 51.85 | 91 | Egypt | 5.20 | 2.37 |
| 32 | Brazil | 42.20 | 51.19 | 92 | Jordan | 3.40 | 0.00 |
| 33 | Lithuania | 42.00 | 50.92 | | Australia | n/a | n/a |
| 34 | Slovenia | 41.50 | 50.26 | | Austria | n/a | n/a |
| 35 | Romania | 40.70 | 49.21 | | Bahrain | n/a | n/a |
| 36 | Kenya | 40.60 | 49.08 | | Belgium | n/a | n/a |
| 37 | Ghana | 40.10 | 48.42 | | Canada | n/a | n/a |
| 38 | Korea, Rep. | 39.50 | 47.63 | | Cyprus | n/a | n/a |
| 39 | Serbia | 37.80 | 45.38 | | Denmark | n/a | n/a |
| 40 | South Africa | 36.80 | 44.06 | | Finland | n/a | n/a |
| 41 | India | 35.90 | 42.88 | | France | n/a | n/a |
| 42 | Honduras | 35.80 | 42.74 | | Iceland | n/a | n/a |
| 43 | Germany | 35.40 | 42.22 | | Iran, Islamic Rep. | n/a | n/a |
| 44 | Estonia | 35.20 | 41.95 | | Italy | n/a | n/a |
| 45 | Uganda | 34.7 | 41.29 | | Japan | n/a | n/a |
| 46 | Poland | 34.60 | 41.16 | | Kuwait | n/a | n/a |
| 47 | Malawi | 32.90 | 38.92 | | Luxembourg | n/a | n/a |
| 48 | Moldova, Rep. | 32.40 | 38.26 | | Malta | n/a | n/a |
| 49 | Pakistan | 32.00 | 37.73 | | Netherlands | n/a | n/a |
| 50 | Nepal | 31.90 | 37.60 | | New Zealand | n/a | n/a |
| 50 | Portugal | 31.90 | 37.60 | | Norway | n/a | n/a |
| 52 | Lesotho | 31.20 | 36.68 | | Oman | n/a | n/a |
| 52 | Zimbabwe | 31.20 | 36.68 | | Qatar | n/a | n/a |
| 54 | Tanzania, United Rep. | 30.70 | 36.02 | | Saudi Arabia | n/a | n/a |
| 55 | Tunisia | 28.90 | 33.64 | | Singapore | n/a | n/a |
| 56 | Turkey | 28.40 | 32.98 | | Switzerland | n/a | n/a |
| 57 | Kazakhstan | 28.30 | 32.85 | | United Arab Emirates | n/a | n/a |
| 58 | Trinidad and Tobago | 28.00 | 32.45 | | United Kingdom | n/a | n/a |
| 59 | Lebanon | 26.60 | 30.61 | | United States of America | n/a | n/a |
| 60 | Morocco | 26.30 | 30.21 | | | | |

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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Switzerland | 5.71 | 100.00 | 61 | Kazakhstan | 3.92 | 39.73 |
| 2 | Norway | 5.55 | 94.61 | 62 | Viet Nam | 3.90 | 39.06 |
| 3 | Singapore | 5.51 | 93.27 | 63 | Albania | 3.88 | 38.38 |
| 4 | Sweden | 5.46 | 91.58 | 64 | Greece | 3.85 | 37.37 |
| 5 | Luxembourg | 5.45 | 91.25 | 64 | Lao PDR | 3.85 | 37.37 |
| 6 | Finland | 5.39 | 89.23 | 64 | Mexico | 3.85 | 37.37 |
| 6 | Netherlands | 5.39 | 89.23 | 67 | Russian Federation | 3.80 | 35.69 |
| 8 | Qatar | 5.37 | 88.55 | 68 | Uruguay | 3.78 | 35.02 |
| 9 | Malaysia | 5.35 | 87.88 | 69 | Kuwait | 3.77 | 34.68 |
| 10 | Japan | 5.31 | 86.53 | 70 | Argentina | 3.76 | 34.34 |
| 11 | Austria | 5.24 | 84.18 | 70 | Azerbaijan | 3.76 | 34.34 |
| 12 | Germany | 5.20 | 82.83 | 72 | Cyprus | 3.74 | 33.67 |
| 13 | Denmark | 5.18 | 82.15 | 72 | Ecuador | 3.74 | 33.67 |
| 14 | Belgium | 5.16 | 81.48 | 72 | Lebanon | 3.74 | 33.67 |
| 15 | United Arab Emirates | 5.15 | 81.14 | 72 | Peru | 3.74 | 33.67 |
| 15 | United States of America | 5.15 | 81.14 | 76 | Gambia | 3.70 | 32.32 |
| 17 | Iceland | 5.08 | 78.79 | 76 | Macedonia, FYR | 3.70 | 32.32 |
| 18 | New Zealand | 4.99 | 75.76 | 78 | Senegal | 3.69 | 31.99 |
| 19 | South Africa | 4.97 | 75.08 | 78 | Zimbabwe | 3.69 | 31.99 |
| 20 | United Kingdom | 4.90 | 72.73 | 80 | Venezuela, Bolivarian Rep. | 3.67 | 31.31 |
| 21 | Australia | 4.88 | 72.05 | 81 | Spain | 3.66 | 30.98 |
| 22 | France | 4.80 | 69.36 | 82 | Ukraine | 3.65 | 30.64 |
| 22 | Ireland | 4.80 | 69.36 | 83 | Madagascar | 3.61 | 29.29 |
| 24 | Bahrain | 4.71 | 66.33 | 83 | Uganda | 3.61 | 29.29 |
| 25 | Estonia | 4.65 | 64.31 | 85 | Mongolia | 3.60 | 28.96 |
| 26 | Canada | 4.64 | 63.97 | 86 | Colombia | 3.57 | 27.95 |
| 26 | Israel | 4.64 | 63.97 | 86 | Ethiopia | 3.57 | 27.95 |
| 28 | India | 4.59 | 62.29 | 88 | Cambodia | 3.55 | 27.27 |
| 29 | Mauritius | 4.56 | 61.28 | 89 | Bulgaria | 3.52 | 26.26 |
| 29 | Philippines | 4.56 | 61.28 | 89 | Romania | 3.52 | 26.26 |
| 31 | Lithuania | 4.54 | 60.61 | 89 | Turkey | 3.52 | 26.26 |
| 32 | Indonesia | 4.52 | 59.93 | 92 | Nicaragua | 3.51 | 25.93 |
| 33 | Czech Republic | 4.49 | 58.92 | 93 | Dominican Republic | 3.50 | 25.59 |
| 34 | Malta | 4.42 | 56.57 | 94 | Lesotho | 3.48 | 24.92 |
| 35 | Korea, Rep. | 4.39 | 55.56 | 94 | Tanzania, United Rep. | 3.48 | 24.92 |
| 36 | Costa Rica | 4.36 | 54.55 | 96 | Armenia | 3.47 | 24.58 |
| 37 | China | 4.35 | 54.21 | 96 | El Salvador | 3.47 | 24.58 |
| 37 | Guatemala | 4.35 | 54.21 | 98 | Mali | 3.46 | 24.24 |
| 39 | Jordan | 4.27 | 51.52 | 99 | Kyrgyzstan | 3.45 | 23.91 |
| 40 | Kenya | 4.26 | 51.18 | 100 | Hungary | 3.43 | 23.23 |
| 41 | Namibia | 4.25 | 50.84 | 100 | Tunisia | 3.43 | 23.23 |
| 42 | Panama | 4.22 | 49.83 | 102 | Italy | 3.40 | 22.22 |
| 43 | Slovenia | 4.20 | 49.16 | 103 | Paraguay | 3.39 | 21.89 |
| 44 | Botswana | 4.19 | 48.82 | 104 | Montenegro | 3.38 | 21.55 |
| 45 | Oman | 4.18 | 48.48 | 104 | Pakistan | 3.38 | 21.55 |
| 46 | Honduras | 4.17 | 48.15 | 106 | Croatia | 3.37 | 21.21 |
| 46 | Sri Lanka | 4.17 | 48.15 | 106 | Iran, Islamic Rep. | 3.37 | 21.21 |
| 48 | Trinidad and Tobago | 4.14 | 47.14 | 108 | Bangladesh | 3.30 | 18.86 |
| 49 | Thailand | 4.13 | 46.80 | 109 | Georgia | 3.29 | 18.52 |
| 50 | Latvia | 4.12 | 46.46 | 110 | Morocco | 3.19 | 15.15 |
| 50 | Rwanda | 4.12 | 46.46 | 110 | Moldova, Rep. | 3.15 | 13.80 |
| 52 | Saudi Arabia | 4.06 | 44.44 | 111 | Nepal | 3.15 | 13.80 |
| 53 | Chile | 4.04 | 43.77 | 111 | Serbia | 3.15 | 13.80 |
| 53 | Portugal | 4.04 | 43.77 | 114 | Bolivia, Plurinational St. | 3.14 | 13.47 |
| 55 | Brazil | 3.99 | 42.09 | 115 | Algeria | 3.11 | 12.46 |
| 56 | Ghana | 3.98 | 41.75 | 116 | Mozambique | 3.10 | 12.12 |
| 56 | Poland | 3.98 | 41.75 | 117 | Bosnia and Herzegovina | 3.08 | 11.45 |
| 58 | Malawi | 3.94 | 40.40 | 118 | Yemen | 2.98 | 8.08 |
| 58 | Slovakia | 3.94 | 40.40 | 119 | Egypt | 2.74 | 0.00 |
| 60 | Bhutan | 3.93 | 40.07 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Sweden | 6.36 | 100.00 | 61 | Azerbaijan | 4.36 | 44.13 |
| 2 | Denmark | 6.14 | 93.85 | 62 | Argentina | 4.35 | 43.85 |
| 2 | Norway | 6.14 | 93.85 | 63 | Brazil | 4.34 | 43.58 |
| 4 | Netherlands | 5.85 | 85.75 | 64 | Malawi | 4.33 | 43.30 |
| 5 | Finland | 5.84 | 85.47 | 65 | Lao PDR | 4.32 | 43.02 |
| 5 | New Zealand | 5.84 | 85.47 | 66 | China | 4.27 | 41.62 |
| 7 | Switzerland | 5.72 | 82.12 | 67 | Uruguay | 4.26 | 41.34 |
| 8 | Ireland | 5.70 | 81.56 | 68 | Ecuador | 4.25 | 41.06 |
| 9 | United States of America | 5.68 | 81.01 | 68 | Macedonia, FYR | 4.25 | 41.06 |
| 10 | Australia | 5.63 | 79.61 | 68 | Uganda | 4.25 | 41.06 |
| 11 | United Kingdom | 5.61 | 79.05 | 71 | Oman | 4.24 | 40.78 |
| 12 | Iceland | 5.58 | 78.21 | 72 | Dominican Republic | 4.15 | 38.27 |
| 13 | Belgium | 5.56 | 77.65 | 72 | Kazakhstan | 4.15 | 38.27 |
| 14 | Luxembourg | 5.51 | 76.26 | 74 | Portugal | 4.14 | 37.99 |
| 15 | Canada | 5.48 | 75.42 | 75 | Poland | 4.12 | 37.43 |
| 16 | Malaysia | 5.46 | 74.86 | 75 | Russian Federation | 4.12 | 37.43 |
| 17 | Singapore | 5.42 | 73.74 | 77 | Lebanon | 4.07 | 36.03 |
| 18 | Austria | 5.41 | 73.46 | 78 | Hungary | 4.04 | 35.20 |
| 18 | Germany | 5.41 | 73.46 | 79 | Viet Nam | 4.03 | 34.92 |
| 20 | Qatar | 5.35 | 71.79 | 80 | El Salvador | 4.00 | 34.08 |
| 21 | Israel | 5.25 | 68.99 | 80 | Georgia | 4.00 | 34.08 |
| 22 | South Africa | 5.24 | 68.72 | 80 | Jordan | 4.00 | 34.08 |
| 22 | United Arab Emirates | 5.24 | 68.72 | 83 | Cyprus | 3.99 | 33.80 |
| 24 | France | 4.97 | 61.17 | 84 | Serbia | 3.98 | 33.52 |
| 25 | Estonia | 4.90 | 59.22 | 85 | Croatia | 3.96 | 32.96 |
| 26 | Czech Republic | 4.89 | 58.94 | 85 | Greece | 3.96 | 32.96 |
| 27 | Japan | 4.85 | 57.82 | 87 | Turkey | 3.95 | 32.68 |
| 28 | Gambia | 4.81 | 56.70 | 88 | Albania | 3.94 | 32.40 |
| 29 | Philippines | 4.76 | 55.31 | 89 | Bulgaria | 3.93 | 32.12 |
| 29 | Rwanda | 4.76 | 55.31 | 90 | Cambodia | 3.88 | 30.73 |
| 31 | Namibia | 4.74 | 54.75 | 91 | Tanzania, United Rep. | 3.86 | 30.17 |
| 32 | Costa Rica | 4.72 | 54.19 | 92 | Ukraine | 3.85 | 29.89 |
| 33 | Panama | 4.70 | 53.63 | 93 | Morocco | 3.82 | 29.05 |
| 34 | Indonesia | 4.69 | 53.35 | 94 | Moldova, Rep. | 3.79 | 28.21 |
| 34 | Lithuania | 4.69 | 53.35 | 95 | Kuwait | 3.77 | 27.65 |
| 36 | Bahrain | 4.67 | 52.79 | 96 | Nicaragua | 3.75 | 27.09 |
| 36 | Sri Lanka | 4.67 | 52.79 | 97 | Kyrgyzstan | 3.73 | 26.54 |
| 38 | Kenya | 4.62 | 51.40 | 98 | Madagascar | 3.72 | 26.26 |
| 39 | Trinidad and Tobago | 4.61 | 51.12 | 99 | Mali | 3.68 | 25.14 |
| 40 | Chile | 4.59 | 50.56 | 100 | Nepal | 3.67 | 24.86 |
| 41 | Malta | 4.58 | 50.28 | 101 | Bolivia, Plurinational St. | 3.66 | 24.58 |
| 42 | Latvia | 4.56 | 49.72 | 101 | Montenegro | 3.66 | 24.58 |
| 42 | Mauritius | 4.56 | 49.72 | 103 | Bosnia and Herzegovina | 3.64 | 24.02 |
| 44 | Guatemala | 4.55 | 49.44 | 104 | Italy | 3.63 | 23.74 |
| 45 | Colombia | 4.51 | 48.32 | 105 | Mozambique | 3.62 | 23.46 |
| 45 | Zimbabwe | 4.51 | 48.32 | 106 | Bangladesh | 3.61 | 23.18 |
| 47 | Bhutan | 4.50 | 48.04 | 106 | Senegal | 3.61 | 23.18 |
| 48 | Botswana | 4.49 | 47.77 | 108 | Paraguay | 3.60 | 22.91 |
| 48 | India | 4.49 | 47.77 | 109 | Armenia | 3.59 | 22.63 |
| 50 | Slovakia | 4.48 | 47.49 | 109 | Pakistan | 3.59 | 22.63 |
| 51 | Honduras | 4.47 | 47.21 | 111 | Tunisia | 3.55 | 21.51 |
| 51 | Peru | 4.47 | 47.21 | 112 | Ethiopia | 3.49 | 19.83 |
| 53 | Thailand | 4.44 | 46.37 | 113 | Lesotho | 3.48 | 19.55 |
| 54 | Saudi Arabia | 4.43 | 46.09 | 114 | Egypt | 3.38 | 16.76 |
| 55 | Mexico | 4.42 | 45.81 | 115 | Iran, Islamic Rep. | 3.36 | 16.20 |
| 56 | Ghana | 4.41 | 45.53 | 116 | Algeria | 3.30 | 14.53 |
| 57 | Slovenia | 4.40 | 45.25 | 117 | Mongolia | 3.19 | 11.45 |
| 57 | Venezuela, Bolivarian Rep. | 4.40 | 45.25 | 118 | Romania | 3.17 | 10.89 |
| 59 | Korea, Rep. | 4.38 | 44.69 | 119 | Yemen | 2.78 | 0.00 |
| 59 | Spain | 4.38 | 44.69 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

3.3.2 Personal rights

Personal rights indicator | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | New Zealand | 98.86 | 100.00 | 61 | Mauritius | 62.27 | 61.20 |
| 2 | Australia | 97.73 | 98.80 | 62 | Bulgaria | 62.02 | 60.94 |
| 2 | Canada | 97.73 | 98.80 | 63 | Moldova, Rep. | 60.84 | 59.69 |
| 2 | Estonia | 97.73 | 98.80 | 63 | Montenegro | 60.84 | 59.69 |
| 2 | Finland | 97.73 | 98.80 | 65 | Paraguay | 58.57 | 57.28 |
| 2 | Luxembourg | 97.73 | 98.80 | 66 | Ukraine | 57.43 | 56.07 |
| 2 | United Kingdom | 97.73 | 98.80 | 67 | Ecuador | 55.16 | 53.66 |
| 8 | Chile | 96.59 | 97.59 | 68 | Nepal | 53.74 | 52.16 |
| 9 | Japan | 95.45 | 96.38 | 68 | Philippines | 53.74 | 52.16 |
| 10 | Cyprus | 93.18 | 93.98 | 70 | Bosnia and Herzegovina | 52.84 | 51.20 |
| 10 | Uruguay | 93.18 | 93.98 | 70 | Guatemala | 52.84 | 51.20 |
| 12 | Slovenia | 90.90 | 91.56 | 72 | Turkey | 52.25 | 50.58 |
| 13 | Denmark | 88.84 | 89.38 | 73 | Mali | 50.53 | 48.75 |
| 14 | Costa Rica | 88.63 | 89.15 | 74 | Mozambique | 50.28 | 48.49 |
| 14 | Italy | 88.63 | 89.15 | 75 | Macedonia, FYR | 49.98 | 48.17 |
| 16 | Austria | 87.70 | 88.17 | 76 | Singapore | 49.07 | 47.21 |
| 16 | Iceland | 87.70 | 88.17 | 77 | Tanzania, United Rep. | 48.84 | 46.96 |
| 16 | Ireland | 87.70 | 88.17 | 78 | Indonesia | 48.60 | 46.71 |
| 16 | Netherlands | 87.70 | 88.17 | 79 | Dominican Republic | 47.77 | 45.83 |
| 16 | Norway | 87.70 | 88.17 | 80 | Bhutan | 47.14 | 45.16 |
| 16 | Sweden | 87.70 | 88.17 | 81 | Kyrgyzstan | 44.56 | 42.42 |
| 16 | Switzerland | 87.70 | 88.17 | 82 | Bolivia, Plurinational St. | 44.36 | 42.21 |
| 23 | Belgium | 85.43 | 85.76 | 83 | Madagascar | 43.37 | 41.16 |
| 24 | Malta | 83.15 | 83.34 | 84 | Nicaragua | 40.54 | 38.16 |
| 24 | Portugal | 83.15 | 83.34 | 85 | Armenia | 39.73 | 37.30 |
| 24 | Spain | 83.15 | 83.34 | 86 | India | 39.43 | 36.98 |
| 27 | United States of America | 82.03 | 82.15 | 87 | Lebanon | 39.37 | 36.92 |
| 28 | Poland | 82.02 | 82.14 | 88 | Cambodia | 38.49 | 35.99 |
| 29 | Namibia | 80.63 | 80.67 | 88 | Uganda | 38.49 | 35.99 |
| 30 | France | 80.60 | 80.64 | 90 | Israel | 37.76 | 35.21 |
| 31 | Malawi | 79.45 | 79.42 | 91 | Pakistan | 35.43 | 32.74 |
| 32 | Germany | 79.11 | 79.06 | 92 | Kuwait | 35.39 | 32.70 |
| 33 | Slovakia | 78.61 | 78.53 | 93 | Oman | 35.29 | 32.59 |
| 34 | Botswana | 76.25 | 76.03 | 94 | Bangladesh | 33.15 | 30.33 |
| 35 | Czech Republic | 75.70 | 75.44 | 95 | Malaysia | 32.52 | 29.66 |
| 36 | Croatia | 75.20 | 74.91 | 96 | Kenya | 32.03 | 29.14 |
| 37 | South Africa | 75.15 | 74.86 | 97 | Thailand | 31.87 | 28.97 |
| 37 | Trinidad and Tobago | 75.15 | 74.86 | 98 | Morocco | 30.49 | 27.51 |
| 39 | Mongolia | 74.06 | 73.70 | 99 | Gambia | 30.21 | 27.21 |
| 40 | Ghana | 73.77 | 73.40 | 100 | Kazakhstan | 29.96 | 26.94 |
| 41 | Lithuania | 73.43 | 73.04 | 101 | Sri Lanka | 29.11 | 26.04 |
| 42 | El Salvador | 71.74 | 71.24 | 102 | Rwanda | 28.52 | 25.42 |
| 43 | Mexico | 71.70 | 71.20 | 103 | Bahrain | 28.14 | 25.01 |
| 44 | Georgia | 70.87 | 70.32 | 104 | Venezuela, Bolivarian Rep. | 27.37 | 24.20 |
| 45 | Panama | 70.61 | 70.05 | 105 | United Arab Emirates | 25.62 | 22.34 |
| 46 | Serbia | 70.32 | 69.74 | 106 | Jordan | 21.93 | 18.43 |
| 47 | Tunisia | 67.74 | 67.00 | 107 | Qatar | 18.23 | 14.51 |
| 48 | Argentina | 67.20 | 66.43 | 108 | Ethiopia | 16.49 | 12.66 |
| 49 | Lesotho | 67.16 | 66.39 | 109 | Azerbaijan | 14.21 | 10.24 |
| 50 | Latvia | 66.57 | 65.76 | 110 | Zimbabwe | 14.01 | 10.03 |
| 51 | Korea, Rep. | 66.28 | 65.45 | 111 | Algeria | 13.97 | 9.99 |
| 52 | Brazil | 65.43 | 64.55 | 112 | Lao PDR | 13.07 | 9.03 |
| 52 | Hungary | 65.43 | 64.55 | 113 | Egypt | 12.83 | 8.78 |
| 54 | Greece | 64.29 | 63.34 | 114 | Saudi Arabia | 9.10 | 4.82 |
| 54 | Peru | 64.29 | 63.34 | 115 | Viet Nam | 8.24 | 3.91 |
| 54 | Senegal | 64.29 | 63.34 | 116 | Russian Federation | 8.00 | 3.66 |
| 57 | Honduras | 63.70 | 62.72 | 117 | Yemen | 6.82 | 2.41 |
| 58 | Albania | 63.46 | 62.46 | 118 | Iran, Islamic Rep. | 5.73 | 1.25 |
| 59 | Romania | 63.16 | 62.15 | 119 | China | 4.55 | 0.00 |
| 60 | Colombia | 63.12 | 62.10 | | | | |

SOURCE: Social Progress Imperative, The Social Progress Index 2016 (<http://www.socialprogressimperative.org/publication/2016-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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Iceland | 6.60 | 100.00 | 61 | Cambodia | 5.59 | 69.39 |
| 2 | Netherlands | 6.58 | 99.39 | 61 | Mongolia | 5.59 | 69.39 |
| 3 | Sweden | 6.56 | 98.79 | 61 | Montenegro | 5.59 | 69.39 |
| 4 | United Arab Emirates | 6.55 | 98.48 | 61 | Namibia | 5.59 | 69.39 |
| 5 | Norway | 6.53 | 97.88 | 61 | Tunisia | 5.59 | 69.39 |
| 5 | United States of America | 6.53 | 97.88 | 66 | Honduras | 5.56 | 68.48 |
| 7 | United Kingdom | 6.48 | 96.36 | 66 | Morocco | 5.56 | 68.48 |
| 8 | Israel | 6.44 | 95.15 | 66 | Romania | 5.56 | 68.48 |
| 9 | Singapore | 6.37 | 93.03 | 66 | Spain | 5.56 | 68.48 |
| 10 | Ireland | 6.34 | 92.12 | 70 | Lebanon | 5.55 | 68.18 |
| 11 | Finland | 6.31 | 91.21 | 71 | Mauritius | 5.54 | 67.88 |
| 12 | Thailand | 6.29 | 90.61 | 72 | Russian Federation | 5.52 | 67.27 |
| 13 | Qatar | 6.28 | 90.30 | 72 | Venezuela, Bolivarian Rep. | 5.52 | 67.27 |
| 14 | Azerbaijan | 6.25 | 89.39 | 74 | Slovakia | 5.49 | 66.36 |
| 15 | Denmark | 6.24 | 89.09 | 75 | Oman | 5.47 | 65.76 |
| 16 | Canada | 6.22 | 88.48 | 76 | Colombia | 5.46 | 65.45 |
| 17 | Bahrain | 6.21 | 88.18 | 77 | Mexico | 5.45 | 65.15 |
| 18 | Lithuania | 6.18 | 87.27 | 78 | Sri Lanka | 5.43 | 64.55 |
| 19 | Estonia | 6.17 | 86.97 | 79 | Ukraine | 5.41 | 63.94 |
| 19 | Luxembourg | 6.17 | 86.97 | 80 | Serbia | 5.40 | 63.64 |
| 21 | New Zealand | 6.11 | 85.15 | 81 | Moldova, Rep. | 5.38 | 63.03 |
| 22 | Malta | 6.09 | 84.55 | 82 | El Salvador | 5.35 | 62.12 |
| 23 | Malaysia | 6.08 | 84.24 | 83 | Bosnia and Herzegovina | 5.33 | 61.52 |
| 23 | Philippines | 6.08 | 84.24 | 83 | Ghana | 5.33 | 61.52 |
| 25 | Belgium | 6.05 | 83.33 | 85 | Poland | 5.31 | 60.91 |
| 25 | Kuwait | 6.05 | 83.33 | 86 | Cyprus | 5.30 | 60.61 |
| 27 | Panama | 6.03 | 82.73 | 87 | Croatia | 5.25 | 59.09 |
| 28 | Australia | 6.00 | 81.82 | 88 | Kazakhstan | 5.23 | 58.48 |
| 29 | Saudi Arabia | 5.99 | 81.52 | 89 | Greece | 5.19 | 57.27 |
| 30 | Jordan | 5.98 | 81.21 | 90 | Botswana | 5.18 | 56.97 |
| 31 | Brazil | 5.96 | 80.61 | 91 | Senegal | 5.17 | 56.67 |
| 31 | Czech Republic | 5.96 | 80.61 | 92 | Rwanda | 5.12 | 55.15 |
| 33 | Switzerland | 5.93 | 79.70 | 93 | Paraguay | 5.11 | 54.85 |
| 34 | Japan | 5.92 | 79.39 | 94 | Gambia | 5.09 | 54.24 |
| 35 | Costa Rica | 5.91 | 79.09 | 95 | Ecuador | 5.06 | 53.33 |
| 36 | Korea, Rep. | 5.89 | 78.48 | 96 | Peru | 5.03 | 52.42 |
| 36 | Macedonia, FYR | 5.89 | 78.48 | 97 | Uganda | 5.01 | 51.82 |
| 38 | Chile | 5.88 | 78.18 | 98 | Bhutan | 5.00 | 51.52 |
| 38 | Georgia | 5.88 | 78.18 | 99 | Zimbabwe | 4.88 | 47.88 |
| 38 | Indonesia | 5.88 | 78.18 | 100 | Bangladesh | 4.85 | 46.97 |
| 38 | Kenya | 5.88 | 78.18 | 100 | Lao PDR | 4.85 | 46.97 |
| 42 | France | 5.87 | 77.88 | 102 | Yemen | 4.84 | 46.67 |
| 43 | Latvia | 5.86 | 77.58 | 103 | Algeria | 4.83 | 46.36 |
| 44 | Italy | 5.85 | 77.27 | 104 | Bolivia, Plurinational St. | 4.81 | 45.76 |
| 45 | Albania | 5.80 | 75.76 | 105 | Nepal | 4.80 | 45.45 |
| 45 | Portugal | 5.80 | 75.76 | 106 | China | 4.79 | 45.15 |
| 45 | Turkey | 5.80 | 75.76 | 107 | Mozambique | 4.78 | 44.85 |
| 48 | Trinidad and Tobago | 5.79 | 75.45 | 108 | Madagascar | 4.77 | 44.55 |
| 49 | Egypt | 5.77 | 74.85 | 109 | Tanzania, United Rep. | 4.76 | 44.24 |
| 50 | Bulgaria | 5.74 | 73.94 | 110 | India | 4.74 | 43.64 |
| 50 | South Africa | 5.74 | 73.94 | 111 | Hungary | 4.71 | 42.73 |
| 52 | Guatemala | 5.72 | 73.33 | 112 | Iran, Islamic Rep. | 4.55 | 37.88 |
| 52 | Viet Nam | 5.72 | 73.33 | 113 | Nicaragua | 4.53 | 37.27 |
| 54 | Germany | 5.71 | 73.03 | 114 | Kyrgyzstan | 4.50 | 36.36 |
| 55 | Uruguay | 5.68 | 72.12 | 115 | Malawi | 4.37 | 32.42 |
| 56 | Slovenia | 5.66 | 71.52 | 116 | Pakistan | 4.26 | 29.09 |
| 57 | Austria | 5.65 | 71.21 | 117 | Mali | 4.21 | 27.58 |
| 57 | Dominican Republic | 5.65 | 71.21 | 118 | Ethiopia | 4.09 | 23.94 |
| 59 | Armenia | 5.63 | 70.61 | 119 | Lesotho | 3.30 | 0.00 |
| 60 | Argentina | 5.62 | 70.30 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

3.3.4 Use of virtual professional networks

LinkedIn users (per 1,000 labour force) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|--------|--------|------|----------------------------|--------|-------|
| 1 | United States of America | 693.18 | 100.00 | 61 | Tunisia | 110.90 | 15.47 |
| 2 | Iceland | 642.66 | 92.67 | 62 | Slovakia | 109.86 | 15.32 |
| 3 | Netherlands | 610.45 | 87.99 | 63 | Albania | 107.81 | 15.02 |
| 4 | Denmark | 594.96 | 85.74 | 64 | Serbia | 99.39 | 13.80 |
| 5 | Malta | 568.69 | 81.93 | 65 | Germany | 95.47 | 13.23 |
| 6 | Ireland | 560.75 | 80.78 | 66 | Dominican Republic | 91.98 | 12.73 |
| 7 | Canada | 553.15 | 79.67 | 67 | El Salvador | 89.06 | 12.30 |
| 8 | Luxembourg | 532.06 | 76.61 | 68 | Poland | 83.13 | 11.44 |
| 9 | Australia | 530.70 | 76.41 | 69 | Bosnia and Herzegovina | 75.22 | 10.29 |
| 10 | United Kingdom | 529.16 | 76.19 | 70 | Morocco | 73.55 | 10.05 |
| 11 | New Zealand | 521.20 | 75.03 | 71 | Bhutan | 68.95 | 9.38 |
| 12 | Singapore | 472.48 | 67.96 | 72 | Nicaragua | 68.73 | 9.35 |
| 13 | Norway | 461.27 | 66.33 | 73 | Guatemala | 68.63 | 9.34 |
| 14 | Belgium | 459.02 | 66.01 | 74 | Georgia | 64.20 | 8.69 |
| 15 | Sweden | 421.78 | 60.60 | 75 | Bolivia, Plurinational St. | 62.48 | 8.44 |
| 16 | Portugal | 353.67 | 50.71 | 76 | Russian Federation | 61.90 | 8.36 |
| 17 | Trinidad and Tobago | 329.61 | 47.22 | 77 | Philippines | 59.95 | 8.08 |
| 18 | Chile | 329.40 | 47.19 | 78 | Sri Lanka | 59.83 | 8.06 |
| 19 | Israel | 328.19 | 47.02 | 79 | Paraguay | 59.09 | 7.95 |
| 20 | Switzerland | 325.83 | 46.67 | 80 | Honduras | 59.04 | 7.94 |
| 21 | United Arab Emirates | 311.24 | 44.56 | 81 | Armenia | 58.29 | 7.84 |
| 22 | France | 307.29 | 43.98 | 82 | Ukraine | 57.65 | 7.74 |
| 23 | Italy | 301.16 | 43.09 | 83 | India | 57.22 | 7.68 |
| 24 | Spain | 290.48 | 41.54 | 84 | Kenya | 56.10 | 7.52 |
| 25 | Cyprus | 259.67 | 37.07 | 85 | Algeria | 52.63 | 7.01 |
| 26 | Finland | 256.77 | 36.65 | 86 | Mongolia | 51.85 | 6.90 |
| 27 | Uruguay | 239.88 | 34.20 | 87 | Ghana | 50.07 | 6.64 |
| 28 | Qatar | 230.78 | 32.88 | 88 | Egypt | 49.35 | 6.54 |
| 29 | Argentina | 216.56 | 30.81 | 89 | Kazakhstan | 45.81 | 6.02 |
| 30 | Bahrain | 215.28 | 30.63 | 90 | Senegal | 37.68 | 4.84 |
| 31 | Costa Rica | 215.02 | 30.59 | 91 | Pakistan | 35.04 | 4.46 |
| 32 | Mauritius | 208.28 | 29.61 | 92 | Zimbabwe | 35.02 | 4.46 |
| 33 | Slovenia | 198.42 | 28.18 | 93 | Gambia | 34.25 | 4.35 |
| 34 | Brazil | 189.47 | 26.88 | 94 | Indonesia | 32.02 | 4.02 |
| 35 | Croatia | 188.98 | 26.81 | 95 | Azerbaijan | 28.56 | 3.52 |
| 36 | South Africa | 187.34 | 26.57 | 96 | Lesotho | 28.46 | 3.51 |
| 37 | Lebanon | 186.09 | 26.39 | 97 | Thailand | 24.80 | 2.97 |
| 38 | Latvia | 184.67 | 26.18 | 98 | Uganda | 21.64 | 2.52 |
| 39 | Estonia | 184.08 | 26.10 | 99 | Japan | 20.91 | 2.41 |
| 40 | Panama | 180.82 | 25.62 | 100 | Cambodia | 17.96 | 1.98 |
| 41 | Greece | 180.18 | 25.53 | 101 | Nepal | 17.50 | 1.91 |
| 42 | Colombia | 171.63 | 24.29 | 102 | Kyrgyzstan | 17.23 | 1.88 |
| 43 | Jordan | 167.37 | 23.67 | 103 | Viet Nam | 16.03 | 1.70 |
| 44 | Kuwait | 161.09 | 22.76 | 104 | Rwanda | 15.48 | 1.62 |
| 45 | Czech Republic | 155.29 | 21.92 | 105 | Peru | 14.78 | 1.52 |
| 46 | Malaysia | 149.17 | 21.03 | 106 | Mali | 13.05 | 1.27 |
| 47 | Romania | 147.51 | 20.79 | 107 | Mozambique | 11.95 | 1.11 |
| 48 | Ecuador | 144.61 | 20.37 | 108 | Yemen | 11.20 | 1.00 |
| 49 | Lithuania | 139.38 | 19.61 | 109 | Malawi | 10.81 | 0.94 |
| 50 | Austria | 137.01 | 19.26 | 110 | Bangladesh | 10.40 | 0.88 |
| 51 | Montenegro | 134.99 | 18.97 | 111 | China | 9.05 | 0.69 |
| 52 | Turkey | 133.88 | 18.81 | 112 | Madagascar | 6.56 | 0.33 |
| 53 | Venezuela, Bolivarian Rep. | 132.67 | 18.63 | 113 | Ethiopia | 4.31 | 0.00 |
| 54 | Mexico | 128.64 | 18.05 | | Iran, Islamic Rep. | n/a | n/a |
| 55 | Bulgaria | 127.62 | 17.90 | | Korea, Rep. | n/a | n/a |
| 56 | Saudi Arabia | 127.40 | 17.87 | | Lao PDR | n/a | n/a |
| 57 | Botswana | 122.14 | 17.10 | | Macedonia, FYR | n/a | n/a |
| 58 | Oman | 120.71 | 16.90 | | Moldova, Rep. | n/a | n/a |
| 59 | Hungary | 119.99 | 16.79 | | Tanzania, United Rep. | n/a | n/a |
| 60 | Namibia | 117.25 | 16.39 | | | | |

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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1 | Sweden..... | 5.92 | 100.00 | 61 | Ghana..... | 4.19 | 38.49 |
| 2 | Norway..... | 5.81 | 95.86 | 62 | Bhutan..... | 4.17 | 37.83 |
| 3 | Switzerland..... | 5.68 | 91.49 | 63 | Gambia..... | 4.16 | 37.51 |
| 4 | United States of America..... | 5.64 | 89.87 | 64 | Cambodia..... | 4.15 | 37.18 |
| 5 | Denmark..... | 5.54 | 86.47 | 65 | Bulgaria..... | 4.15 | 36.98 |
| 6 | Finland..... | 5.54 | 86.23 | 66 | Uruguay..... | 4.14 | 36.70 |
| 7 | Germany..... | 5.45 | 83.18 | 67 | Mexico..... | 4.14 | 36.62 |
| 8 | New Zealand..... | 5.41 | 81.77 | 68 | Namibia..... | 4.13 | 36.56 |
| 9 | Netherlands..... | 5.38 | 80.77 | 69 | Peru..... | 4.13 | 36.48 |
| 10 | Singapore..... | 5.38 | 80.72 | 70 | Jordan..... | 4.13 | 36.34 |
| 11 | Malaysia..... | 5.37 | 80.50 | 71 | Colombia..... | 4.12 | 35.93 |
| 12 | Israel..... | 5.37 | 80.42 | 72 | Oman..... | 4.10 | 35.18 |
| 13 | Austria..... | 5.37 | 80.18 | 73 | Argentina..... | 4.09 | 35.05 |
| 14 | Qatar..... | 5.35 | 79.47 | 74 | Slovakia..... | 4.05 | 33.60 |
| 15 | Iceland..... | 5.34 | 79.45 | 75 | Montenegro..... | 4.04 | 33.28 |
| 16 | Japan..... | 5.29 | 77.43 | 76 | Russian Federation..... | 4.03 | 32.76 |
| 17 | Luxembourg..... | 5.24 | 75.70 | 77 | Portugal..... | 4.03 | 32.68 |
| 18 | United Kingdom..... | 5.22 | 75.03 | 78 | Mali..... | 4.02 | 32.62 |
| 19 | Ireland..... | 5.17 | 73.13 | 79 | Zimbabwe..... | 4.01 | 32.20 |
| 20 | Australia..... | 5.10 | 70.85 | 80 | Madagascar..... | 4.00 | 31.84 |
| 21 | United Arab Emirates..... | 5.06 | 69.24 | 81 | Dominican Republic..... | 3.98 | 31.01 |
| 22 | Belgium..... | 5.02 | 68.03 | 82 | Ecuador..... | 3.96 | 30.34 |
| 23 | Canada..... | 5.00 | 67.33 | 83 | Venezuela, Bolivarian Rep..... | 3.94 | 29.64 |
| 24 | Estonia..... | 4.95 | 65.38 | 84 | Chile..... | 3.94 | 29.63 |
| 25 | South Africa..... | 4.86 | 62.28 | 85 | Moldova, Rep..... | 3.93 | 29.32 |
| 26 | France..... | 4.72 | 57.29 | 86 | Brazil..... | 3.92 | 28.90 |
| 27 | Indonesia..... | 4.69 | 56.16 | 87 | Viet Nam..... | 3.88 | 27.65 |
| 28 | Lithuania..... | 4.68 | 55.88 | 88 | Malawi..... | 3.88 | 27.46 |
| 29 | Mongolia..... | 4.64 | 54.37 | 89 | Morocco..... | 3.87 | 27.32 |
| 30 | Albania..... | 4.63 | 54.21 | 90 | Spain..... | 3.87 | 27.28 |
| 31 | Czech Republic..... | 4.62 | 53.87 | 91 | Romania..... | 3.87 | 27.28 |
| 32 | Korea, Rep..... | 4.61 | 53.25 | 92 | Turkey..... | 3.86 | 26.78 |
| 33 | Philippines..... | 4.60 | 52.96 | 93 | Poland..... | 3.86 | 26.66 |
| 34 | China..... | 4.60 | 52.93 | 94 | Greece..... | 3.85 | 26.65 |
| 35 | Bahrain..... | 4.55 | 51.38 | 95 | Kyrgyzstan..... | 3.85 | 26.54 |
| 36 | Guatemala..... | 4.54 | 51.09 | 96 | Croatia..... | 3.84 | 25.95 |
| 37 | Kazakhstan..... | 4.54 | 50.85 | 97 | Pakistan..... | 3.83 | 25.59 |
| 38 | India..... | 4.51 | 49.78 | 98 | Italy..... | 3.81 | 25.19 |
| 39 | Rwanda..... | 4.48 | 48.95 | 99 | Trinidad and Tobago..... | 3.79 | 24.37 |
| 40 | Kenya..... | 4.45 | 47.87 | 100 | El Salvador..... | 3.79 | 24.27 |
| 41 | Macedonia, FYR..... | 4.45 | 47.72 | 101 | Bosnia and Herzegovina..... | 3.78 | 24.11 |
| 42 | Panama..... | 4.39 | 45.72 | 102 | Kuwait..... | 3.78 | 24.06 |
| 43 | Azerbaijan..... | 4.39 | 45.49 | 103 | Egypt..... | 3.77 | 23.66 |
| 44 | Thailand..... | 4.38 | 45.10 | 104 | Cyprus..... | 3.76 | 23.15 |
| 45 | Slovenia..... | 4.35 | 44.06 | 105 | Tanzania, United Rep..... | 3.72 | 21.78 |
| 46 | Uganda..... | 4.33 | 43.35 | 106 | Paraguay..... | 3.68 | 20.49 |
| 47 | Mauritius..... | 4.32 | 43.05 | 107 | Iran, Islamic Rep..... | 3.66 | 19.85 |
| 48 | Sri Lanka..... | 4.31 | 42.80 | 108 | Nicaragua..... | 3.66 | 19.63 |
| 49 | Honduras..... | 4.30 | 42.41 | 109 | Serbia..... | 3.65 | 19.36 |
| 50 | Armenia..... | 4.29 | 42.15 | 110 | Bangladesh..... | 3.62 | 18.22 |
| 51 | Senegal..... | 4.27 | 41.53 | 111 | Nepal..... | 3.62 | 18.16 |
| 52 | Ukraine..... | 4.27 | 41.32 | 112 | Mozambique..... | 3.59 | 17.13 |
| 53 | Malta..... | 4.27 | 41.22 | 113 | Bolivia, Plurinational St..... | 3.55 | 15.89 |
| 54 | Lao PDR..... | 4.27 | 41.18 | 114 | Tunisia..... | 3.51 | 14.30 |
| 55 | Saudi Arabia..... | 4.25 | 40.77 | 115 | Hungary..... | 3.47 | 12.99 |
| 56 | Latvia..... | 4.24 | 40.35 | 116 | Algeria..... | 3.44 | 11.83 |
| 57 | Georgia..... | 4.22 | 39.62 | 117 | Ethiopia..... | 3.41 | 10.72 |
| 58 | Costa Rica..... | 4.22 | 39.46 | 118 | Yemen..... | 3.14 | 1.41 |
| 59 | Botswana..... | 4.21 | 39.26 | 119 | Lesotho..... | 3.10 | 0.00 |
| 60 | Lebanon..... | 4.20 | 39.03 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|------------------------|-------|-------|
| 1 | Malaysia | 5.13 | 100.00 | 61 | Mauritius | 3.53 | 68.80 |
| 2 | Germany | 5.10 | 99.42 | 62 | Oman | 3.52 | 68.56 |
| 3 | Finland | 5.05 | 98.42 | 63 | Kazakhstan | 3.51 | 68.35 |
| 4 | Qatar | 5.02 | 97.80 | 64 | Bulgaria | 3.50 | 68.33 |
| 5 | United States of America | 5.01 | 97.62 | 65 | Czech Republic | 3.49 | 68.06 |
| 6 | Netherlands | 4.89 | 95.35 | 66 | Uruguay | 3.46 | 67.44 |
| 7 | Switzerland | 4.80 | 93.69 | 67 | Peru | 3.45 | 67.23 |
| 8 | Sweden | 4.77 | 93.08 | 68 | Namibia | 3.45 | 67.19 |
| 9 | United Arab Emirates | 4.74 | 92.34 | 69 | Mali | 3.45 | 67.18 |
| 10 | United Kingdom | 4.73 | 92.17 | 70 | Botswana | 3.44 | 67.00 |
| 11 | Israel | 4.67 | 91.08 | 71 | Macedonia, FYR | 3.43 | 66.82 |
| 12 | Norway | 4.63 | 90.34 | 72 | Bhutan | 3.42 | 66.75 |
| 13 | Singapore | 4.61 | 89.92 | 73 | Cambodia | 3.41 | 66.49 |
| 14 | Iceland | 4.55 | 88.72 | 74 | Uganda | 3.41 | 66.42 |
| 15 | New Zealand | 4.53 | 88.25 | 75 | Thailand | 3.37 | 65.72 |
| 16 | China | 4.48 | 87.35 | 76 | Italy | 3.36 | 65.60 |
| 17 | Luxembourg | 4.44 | 86.50 | 77 | Slovenia | 3.35 | 65.39 |
| 18 | Ireland | 4.42 | 86.12 | 78 | Senegal | 3.35 | 65.28 |
| 19 | Belgium | 4.39 | 85.55 | 79 | Saudi Arabia | 3.34 | 65.14 |
| 20 | Austria | 4.31 | 84.13 | 80 | Viet Nam | 3.33 | 64.86 |
| 21 | Indonesia | 4.25 | 82.81 | 81 | Malta | 3.30 | 64.29 |
| 22 | India | 4.22 | 82.24 | 82 | Greece | 3.26 | 63.55 |
| 23 | Azerbaijan | 4.17 | 81.33 | 83 | Armenia | 3.24 | 63.17 |
| 24 | Denmark | 4.16 | 81.02 | 84 | Brazil | 3.24 | 63.17 |
| 25 | Canada | 4.13 | 80.56 | 85 | Montenegro | 3.24 | 63.09 |
| 26 | Hungary | 4.06 | 79.16 | 86 | Georgia | 3.23 | 62.93 |
| 27 | Korea, Rep. | 4.01 | 78.19 | 87 | Kuwait | 3.16 | 61.52 |
| 28 | Japan | 3.99 | 77.83 | 88 | Turkey | 3.15 | 61.38 |
| 29 | Estonia | 3.99 | 77.77 | 89 | Madagascar | 3.13 | 61.11 |
| 30 | Costa Rica | 3.96 | 77.24 | 90 | Lebanon | 3.12 | 60.80 |
| 31 | Panama | 3.96 | 77.17 | 91 | Albania | 3.08 | 60.14 |
| 32 | Kenya | 3.95 | 77.09 | 92 | Gambia | 3.08 | 60.12 |
| 33 | Bolivia, Plurinational St. | 3.95 | 77.02 | 93 | Cyprus | 3.08 | 59.99 |
| 34 | Mexico | 3.85 | 75.14 | 94 | Morocco | 3.05 | 59.46 |
| 35 | Venezuela, Bolivarian Rep. | 3.85 | 75.08 | 95 | Latvia | 3.05 | 59.41 |
| 36 | France | 3.85 | 74.99 | 96 | Serbia | 3.03 | 59.09 |
| 37 | Lao PDR | 3.84 | 74.89 | 97 | Mozambique | 3.02 | 58.88 |
| 38 | Jordan | 3.83 | 74.71 | 98 | Honduras | 2.99 | 58.27 |
| 39 | Argentina | 3.78 | 73.68 | 99 | Malawi | 2.96 | 57.77 |
| 40 | Chile | 3.78 | 73.64 | 100 | Poland | 2.96 | 57.69 |
| 41 | El Salvador | 3.76 | 73.31 | 101 | Bosnia and Herzegovina | 2.94 | 57.23 |
| 42 | Bahrain | 3.74 | 72.95 | 102 | Ecuador | 2.90 | 56.59 |
| 43 | South Africa | 3.73 | 72.76 | 103 | Kyrgyzstan | 2.90 | 56.52 |
| 44 | Spain | 3.72 | 72.53 | 103 | Romania | 2.90 | 56.52 |
| 45 | Ethiopia | 3.71 | 72.29 | 105 | Lesotho | 2.84 | 55.44 |
| 46 | Ukraine | 3.69 | 71.93 | 106 | Paraguay | 2.83 | 55.20 |
| 47 | Russian Federation | 3.68 | 71.72 | 107 | Croatia | 2.83 | 55.17 |
| 48 | Dominican Republic | 3.68 | 71.66 | 108 | Iran, Islamic Rep. | 2.82 | 54.99 |
| 49 | Colombia | 3.65 | 71.10 | 109 | Bangladesh | 2.79 | 54.44 |
| 50 | Pakistan | 3.62 | 70.65 | 110 | Algeria | 2.75 | 53.71 |
| 51 | Rwanda | 3.62 | 70.53 | 111 | Nepal | 2.71 | 52.89 |
| 52 | Sri Lanka | 3.61 | 70.43 | 112 | Zimbabwe | 2.60 | 50.62 |
| 53 | Slovakia | 3.61 | 70.39 | 113 | Moldova, Rep. | 2.58 | 50.23 |
| 54 | Tanzania, United Rep. | 3.61 | 70.36 | 114 | Tunisia | 2.55 | 49.73 |
| 55 | Lithuania | 3.59 | 70.06 | 115 | Trinidad and Tobago | 2.52 | 49.09 |
| 56 | Portugal | 3.58 | 69.85 | 116 | Mongolia | 2.49 | 48.62 |
| 57 | Australia | 3.58 | 69.85 | 117 | Yemen | 2.38 | 46.46 |
| 58 | Guatemala | 3.57 | 69.67 | 118 | Egypt | 0.00 | 0.00 |
| 59 | Philippines | 3.56 | 69.38 | 118 | Nicaragua | 0.00 | 0.00 |
| 60 | Ghana | 3.53 | 68.87 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

Pillar 4

Retain

4.1.1 Pension system

Workforce contributing to pension system (%) | 2012

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|--------|--------|------|----------------------------|-------|-------|
| 1 | Luxembourg | 100.00 | 100.00 | 61 | Iran, Islamic Rep. | 34.00 | 32.65 |
| 2 | Lithuania | 99.00 | 98.98 | 61 | Venezuela, Bolivarian Rep. | 34.00 | 32.65 |
| 3 | Czech Republic | 95.00 | 94.90 | 63 | Mongolia | 33.00 | 31.63 |
| 3 | Japan | 95.00 | 94.90 | 64 | Armenia | 32.00 | 30.61 |
| 3 | Switzerland | 95.00 | 94.90 | 65 | Colombia | 31.00 | 29.59 |
| 6 | Austria | 94.00 | 93.88 | 66 | Georgia | 29.00 | 27.55 |
| 6 | Estonia | 94.00 | 93.88 | 67 | China | 27.00 | 25.51 |
| 8 | Denmark | 93.00 | 92.86 | 67 | Mexico | 27.00 | 25.51 |
| 8 | Latvia | 93.00 | 92.86 | 69 | Dominican Republic | 26.00 | 24.49 |
| 8 | Norway | 93.00 | 92.86 | 69 | Ecuador | 26.00 | 24.49 |
| 8 | United Kingdom | 93.00 | 92.86 | 71 | Philippines | 25.00 | 23.47 |
| 12 | Hungary | 92.00 | 91.84 | 72 | Morocco | 24.00 | 22.45 |
| 12 | Portugal | 92.00 | 91.84 | 72 | Sri Lanka | 24.00 | 22.45 |
| 12 | United States of America | 92.00 | 91.84 | 74 | El Salvador | 23.00 | 21.43 |
| 15 | Australia | 91.00 | 90.82 | 74 | Thailand | 23.00 | 21.43 |
| 15 | Belgium | 91.00 | 90.82 | 76 | Nicaragua | 22.00 | 20.41 |
| 15 | Netherlands | 91.00 | 90.82 | 76 | Peru | 22.00 | 20.41 |
| 18 | Finland | 90.00 | 89.80 | 78 | Bahrain | 20.00 | 18.37 |
| 18 | Italy | 90.00 | 89.80 | 78 | Guatemala | 20.00 | 18.37 |
| 20 | Israel | 89.10 | 88.88 | 78 | Zimbabwe | 20.00 | 18.37 |
| 21 | Ireland | 89.00 | 88.78 | 81 | Viet Nam | 19.00 | 17.35 |
| 21 | Sweden | 89.00 | 88.78 | 82 | Honduras | 17.00 | 15.31 |
| 23 | France | 87.00 | 86.73 | 83 | Bhutan | 14.00 | 12.24 |
| 23 | Germany | 87.00 | 86.73 | 84 | Bolivia, Plurinational St. | 12.00 | 10.20 |
| 23 | Iceland | 87.00 | 86.73 | 84 | Paraguay | 12.00 | 10.20 |
| 23 | Slovenia | 87.00 | 86.73 | 86 | India | 10.00 | 8.16 |
| 27 | Greece | 86.00 | 85.71 | 86 | Namibia | 10.00 | 8.16 |
| 28 | Croatia | 83.00 | 82.65 | 86 | Uganda | 10.00 | 8.16 |
| 29 | Poland | 81.00 | 80.61 | 86 | Yemen | 10.00 | 8.16 |
| 30 | Bulgaria | 79.00 | 78.57 | 90 | Botswana | 9.00 | 7.14 |
| 30 | Slovakia | 79.00 | 78.57 | 91 | Ghana | 8.00 | 6.12 |
| 32 | Uruguay | 78.00 | 77.55 | 91 | Kenya | 8.00 | 6.12 |
| 33 | Bosnia and Herzegovina | 71.00 | 70.41 | 93 | Indonesia | 7.00 | 5.10 |
| 33 | Trinidad and Tobago | 71.00 | 70.41 | 93 | Mali | 7.00 | 5.10 |
| 35 | Spain | 69.00 | 68.37 | 95 | South Africa | 6.00 | 4.08 |
| 36 | Romania | 68.00 | 67.35 | 96 | Madagascar | 5.30 | 3.37 |
| 37 | Canada | 67.00 | 66.33 | 97 | Rwanda | 5.00 | 3.06 |
| 37 | Russian Federation | 67.00 | 66.33 | 97 | Senegal | 5.00 | 3.06 |
| 39 | Ukraine | 65.00 | 64.29 | 99 | Qatar | 4.40 | 2.45 |
| 40 | Kazakhstan | 63.00 | 62.24 | 100 | Lesotho | 4.00 | 2.04 |
| 41 | Singapore | 62.00 | 61.22 | 100 | Pakistan | 4.00 | 2.04 |
| 42 | Chile | 60.00 | 59.18 | 100 | Tanzania, United Rep. | 4.00 | 2.04 |
| 43 | Moldova, Rep. | 59.00 | 58.16 | 103 | Bangladesh | 3.00 | 1.02 |
| 43 | Turkey | 59.00 | 58.16 | 103 | Gambia | 3.00 | 1.02 |
| 45 | Costa Rica | 56 | 55.10 | 103 | Nepal | 3.00 | 1.02 |
| 46 | Brazil | 55.00 | 54.08 | 106 | Mozambique | 2.00 | 0.00 |
| 46 | Egypt | 55.00 | 54.08 | | Cambodia | n/a | n/a |
| 48 | Macedonia, FYR | 53.00 | 52.04 | | Cyprus | n/a | n/a |
| 48 | Mauritius | 53.00 | 52.04 | | Ethiopia | n/a | n/a |
| 50 | Korea, Rep. | 49.00 | 47.96 | | Kuwait | n/a | n/a |
| 50 | Malaysia | 49.00 | 47.96 | | Lao PDR | n/a | n/a |
| 50 | Tunisia | 49.00 | 47.96 | | Malawi | n/a | n/a |
| 53 | Serbia | 45.00 | 43.88 | | Malta | n/a | n/a |
| 54 | Argentina | 42.00 | 40.82 | | Montenegro | n/a | n/a |
| 55 | Kyrgyzstan | 40.00 | 38.78 | | New Zealand | n/a | n/a |
| 56 | Albania | 38.00 | 36.73 | | Oman | n/a | n/a |
| 56 | Jordan | 38.00 | 36.73 | | Panama | n/a | n/a |
| 58 | Algeria | 37.00 | 35.71 | | Saudi Arabia | n/a | n/a |
| 59 | Azerbaijan | 35.00 | 33.67 | | United Arab Emirates | n/a | n/a |
| 59 | Lebanon | 35.00 | 33.67 | | | | |

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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Norway | 6.32 | 100.00 | 61 | Korea, Rep. | 3.58 | 36.12 |
| 2 | France | 6.21 | 97.46 | 62 | Tanzania, United Rep. | 3.55 | 35.55 |
| 3 | Luxembourg | 6.12 | 95.30 | 63 | Lithuania | 3.54 | 35.35 |
| 4 | Finland | 6.10 | 94.83 | 64 | Romania | 3.54 | 35.24 |
| 5 | Switzerland | 6.09 | 94.77 | 65 | Lesotho | 3.54 | 35.19 |
| 6 | Belgium | 6.05 | 93.76 | 66 | Ecuador | 3.53 | 35.13 |
| 7 | Austria | 6.01 | 92.77 | 67 | Botswana | 3.53 | 35.05 |
| 8 | Denmark | 6.01 | 92.76 | 68 | India | 3.50 | 34.42 |
| 9 | Sweden | 5.88 | 89.76 | 69 | Trinidad and Tobago | 3.49 | 34.18 |
| 10 | Netherlands | 5.87 | 89.54 | 70 | Argentina | 3.48 | 33.80 |
| 11 | New Zealand | 5.70 | 85.65 | 71 | Russian Federation | 3.47 | 33.71 |
| 12 | Germany | 5.59 | 82.93 | 72 | Algeria | 3.46 | 33.39 |
| 13 | Ireland | 5.58 | 82.71 | 73 | Brazil | 3.44 | 33.06 |
| 14 | Australia | 5.57 | 82.48 | 74 | Mongolia | 3.36 | 31.05 |
| 15 | Spain | 5.55 | 82.15 | 75 | Kenya | 3.33 | 30.47 |
| 16 | Iceland | 5.54 | 81.90 | 76 | Mali | 3.30 | 29.66 |
| 17 | Qatar | 5.45 | 79.84 | 77 | Ghana | 3.27 | 28.97 |
| 18 | Canada | 5.45 | 79.73 | 78 | Senegal | 3.24 | 28.20 |
| 19 | United Kingdom | 5.33 | 77.00 | 79 | Ukraine | 3.23 | 28.09 |
| 20 | Malaysia | 5.13 | 72.28 | 80 | Greece | 3.19 | 27.21 |
| 21 | Japan | 5.05 | 70.50 | 81 | Morocco | 3.19 | 27.13 |
| 22 | Uruguay | 4.92 | 67.43 | 82 | Bulgaria | 3.14 | 26.04 |
| 23 | Bahrain | 4.87 | 66.18 | 83 | Philippines | 3.13 | 25.80 |
| 24 | United States of America | 4.80 | 64.73 | 84 | Mexico | 3.12 | 25.54 |
| 25 | Saudi Arabia | 4.78 | 64.16 | 85 | Montenegro | 3.10 | 24.95 |
| 26 | Czech Republic | 4.74 | 63.31 | 86 | Pakistan | 3.09 | 24.70 |
| 27 | Malta | 4.72 | 62.72 | 87 | Mozambique | 3.06 | 24.02 |
| 28 | United Arab Emirates | 4.62 | 60.38 | 88 | Colombia | 3.05 | 23.96 |
| 29 | Portugal | 4.59 | 59.65 | 89 | Tunisia | 2.99 | 22.46 |
| 30 | Oman | 4.47 | 56.89 | 90 | Guatemala | 2.97 | 22.02 |
| 31 | Israel | 4.47 | 56.84 | 91 | Peru | 2.97 | 21.99 |
| 32 | Slovenia | 4.37 | 54.62 | 92 | Kyrgyzstan | 2.95 | 21.51 |
| 33 | China | 4.36 | 54.41 | 93 | Uganda | 2.93 | 21.12 |
| 34 | Rwanda | 4.29 | 52.81 | 94 | Croatia | 2.93 | 21.02 |
| 35 | Kuwait | 4.28 | 52.44 | 95 | Sri Lanka | 2.89 | 20.09 |
| 36 | Singapore | 4.27 | 52.29 | 96 | Cambodia | 2.86 | 19.40 |
| 37 | Jordan | 4.13 | 48.96 | 97 | Serbia | 2.85 | 19.30 |
| 38 | Indonesia | 4.08 | 47.76 | 98 | Poland | 2.84 | 18.93 |
| 39 | Turkey | 4.07 | 47.68 | 99 | Armenia | 2.78 | 17.48 |
| 40 | Estonia | 4.02 | 46.42 | 100 | Dominican Republic | 2.77 | 17.29 |
| 41 | Italy | 4.01 | 46.17 | 101 | Paraguay | 2.75 | 16.84 |
| 42 | Mauritius | 3.90 | 43.58 | 102 | Honduras | 2.73 | 16.34 |
| 43 | Bhutan | 3.87 | 42.86 | 103 | Hungary | 2.72 | 16.08 |
| 44 | Cyprus | 3.86 | 42.61 | 104 | Albania | 2.71 | 16.05 |
| 45 | Thailand | 3.85 | 42.58 | 105 | El Salvador | 2.70 | 15.72 |
| 46 | Chile | 3.85 | 42.58 | 106 | Malawi | 2.64 | 14.33 |
| 47 | Latvia | 3.83 | 42.12 | 107 | Georgia | 2.64 | 14.28 |
| 48 | Azerbaijan | 3.82 | 41.88 | 108 | Bolivia, Plurinational St. | 2.61 | 13.68 |
| 49 | Panama | 3.82 | 41.86 | 109 | Moldova, Rep. | 2.60 | 13.45 |
| 50 | Costa Rica | 3.82 | 41.70 | 110 | Lebanon | 2.49 | 10.84 |
| 51 | South Africa | 3.77 | 40.56 | 111 | Bosnia and Herzegovina | 2.49 | 10.84 |
| 52 | Namibia | 3.76 | 40.29 | 112 | Egypt | 2.45 | 9.96 |
| 53 | Gambia | 3.73 | 39.67 | 113 | Yemen | 2.44 | 9.57 |
| 54 | Slovakia | 3.72 | 39.46 | 114 | Nicaragua | 2.37 | 7.95 |
| 55 | Lao PDR | 3.68 | 38.57 | 115 | Nepal | 2.34 | 7.30 |
| 56 | Kazakhstan | 3.67 | 38.29 | 116 | Madagascar | 2.21 | 4.40 |
| 57 | Macedonia, FYR | 3.66 | 38.10 | 117 | Venezuela, Bolivarian Rep. | 2.12 | 2.19 |
| 58 | Viet Nam | 3.65 | 37.88 | 118 | Bangladesh | 2.10 | 1.71 |
| 59 | Ethiopia | 3.64 | 37.50 | 119 | Zimbabwe | 2.03 | 0.00 |
| 60 | Iran, Islamic Rep. | 3.59 | 36.39 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Switzerland | 6.07 | 100.00 | 61 | South Africa | 3.53 | 42.14 |
| 2 | United States of America | 5.64 | 90.21 | 62 | Honduras | 3.49 | 41.23 |
| 3 | United Arab Emirates | 5.60 | 89.29 | 62 | Uruguay | 3.49 | 41.23 |
| 4 | Norway | 5.55 | 88.15 | 64 | Colombia | 3.47 | 40.77 |
| 5 | Qatar | 5.54 | 87.93 | 64 | Tanzania, United Rep. | 3.47 | 40.77 |
| 6 | Singapore | 5.48 | 86.56 | 66 | Mali | 3.46 | 40.55 |
| 7 | United Kingdom | 5.41 | 84.97 | 67 | Cyprus | 3.45 | 40.32 |
| 8 | Malaysia | 5.27 | 81.78 | 68 | Mozambique | 3.42 | 39.64 |
| 9 | Netherlands | 5.25 | 81.32 | 69 | Pakistan | 3.41 | 39.41 |
| 10 | Finland | 5.17 | 79.50 | 70 | Dominican Republic | 3.40 | 39.18 |
| 11 | Luxembourg | 5.08 | 77.45 | 71 | Russian Federation | 3.32 | 37.36 |
| 12 | Sweden | 5.00 | 75.63 | 72 | Kuwait | 3.30 | 36.90 |
| 13 | Iceland | 4.92 | 73.80 | 72 | Spain | 3.30 | 36.90 |
| 14 | Chile | 4.91 | 73.58 | 74 | Estonia | 3.29 | 36.67 |
| 15 | Canada | 4.85 | 72.21 | 75 | France | 3.26 | 35.99 |
| 16 | Germany | 4.84 | 71.98 | 75 | Senegal | 3.26 | 35.99 |
| 17 | Ireland | 4.74 | 69.70 | 77 | Viet Nam | 3.24 | 35.54 |
| 18 | Saudi Arabia | 4.73 | 69.48 | 78 | Malawi | 3.23 | 35.31 |
| 19 | Rwanda | 4.72 | 69.25 | 78 | Turkey | 3.23 | 35.31 |
| 20 | Panama | 4.70 | 68.79 | 80 | Lesotho | 3.21 | 34.85 |
| 21 | Denmark | 4.69 | 68.56 | 81 | Morocco | 3.20 | 34.62 |
| 22 | Belgium | 4.61 | 66.74 | 82 | Ecuador | 3.18 | 34.17 |
| 23 | Austria | 4.57 | 65.83 | 83 | Slovenia | 3.13 | 33.03 |
| 24 | Israel | 4.52 | 64.69 | 84 | Uganda | 3.12 | 32.80 |
| 25 | Australia | 4.51 | 64.46 | 85 | Bangladesh | 3.01 | 30.30 |
| 26 | Costa Rica | 4.48 | 63.78 | 86 | Georgia | 2.98 | 29.61 |
| 27 | Bahrain | 4.43 | 62.64 | 86 | Poland | 2.98 | 29.61 |
| 28 | Korea, Rep. | 4.42 | 62.41 | 88 | Montenegro | 2.96 | 29.16 |
| 29 | Malta | 4.37 | 61.28 | 89 | Egypt | 2.94 | 28.70 |
| 30 | New Zealand | 4.36 | 61.05 | 89 | Nicaragua | 2.94 | 28.70 |
| 31 | India | 4.32 | 60.14 | 91 | Madagascar | 2.93 | 28.47 |
| 32 | China | 4.21 | 57.63 | 92 | Lithuania | 2.89 | 27.56 |
| 33 | Indonesia | 4.17 | 56.72 | 93 | Italy | 2.85 | 26.65 |
| 33 | Oman | 4.17 | 56.72 | 94 | Lebanon | 2.82 | 25.97 |
| 35 | Azerbaijan | 4.12 | 55.58 | 95 | Armenia | 2.79 | 25.28 |
| 36 | Japan | 4.07 | 54.44 | 95 | Tunisia | 2.79 | 25.28 |
| 37 | Guatemala | 3.99 | 52.62 | 97 | Nepal | 2.72 | 23.69 |
| 38 | Bhutan | 3.96 | 51.94 | 98 | Bolivia, Plurinational St. | 2.71 | 23.46 |
| 39 | Thailand | 3.91 | 50.80 | 99 | Macedonia, FYR | 2.68 | 22.78 |
| 40 | Lao PDR | 3.89 | 50.34 | 100 | Algeria | 2.67 | 22.55 |
| 41 | Brazil | 3.81 | 48.52 | 101 | Albania | 2.66 | 22.32 |
| 41 | Peru | 3.81 | 48.52 | 102 | Latvia | 2.63 | 21.64 |
| 43 | Ghana | 3.80 | 48.29 | 103 | El Salvador | 2.62 | 21.41 |
| 43 | Mauritius | 3.80 | 48.29 | 103 | Iran, Islamic Rep. | 2.62 | 21.41 |
| 45 | Namibia | 3.77 | 47.61 | 105 | Slovakia | 2.61 | 21.18 |
| 45 | Sri Lanka | 3.77 | 47.61 | 106 | Greece | 2.59 | 20.73 |
| 47 | Kenya | 3.74 | 46.92 | 107 | Bulgaria | 2.55 | 19.82 |
| 48 | Philippines | 3.73 | 46.70 | 108 | Kyrgyzstan | 2.53 | 19.36 |
| 49 | Jordan | 3.69 | 45.79 | 109 | Ukraine | 2.52 | 19.13 |
| 50 | Cambodia | 3.68 | 45.56 | 110 | Mongolia | 2.51 | 18.91 |
| 51 | Argentina | 3.67 | 45.33 | 111 | Zimbabwe | 2.43 | 17.08 |
| 52 | Botswana | 3.65 | 44.87 | 112 | Hungary | 2.39 | 16.17 |
| 52 | Czech Republic | 3.65 | 44.87 | 113 | Croatia | 2.15 | 10.71 |
| 54 | Trinidad and Tobago | 3.62 | 44.19 | 114 | Romania | 2.07 | 8.88 |
| 55 | Kazakhstan | 3.57 | 43.05 | 115 | Bosnia and Herzegovina | 1.94 | 5.92 |
| 56 | Ethiopia | 3.56 | 42.82 | 116 | Yemen | 1.92 | 5.47 |
| 57 | Paraguay | 3.55 | 42.60 | 117 | Moldova, Rep. | 1.88 | 4.56 |
| 58 | Gambia | 3.54 | 42.37 | 118 | Serbia | 1.68 | 0.00 |
| 58 | Mexico | 3.54 | 42.37 | 118 | Venezuela, Bolivarian Rep. | 1.68 | 0.00 |
| 58 | Portugal | 3.54 | 42.37 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

4.2.1 Environmental performance

Environmental Performance Index | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Finland | 90.68 | 100.00 | 61 | Philippines | 73.70 | 68.31 |
| 2 | Iceland | 90.51 | 99.68 | 62 | Mexico | 73.59 | 68.10 |
| 3 | Sweden | 90.43 | 99.53 | 63 | Kazakhstan | 73.29 | 67.54 |
| 4 | Denmark | 89.21 | 97.26 | 64 | Kyrgyzstan | 73.13 | 67.25 |
| 5 | Slovenia | 88.98 | 96.83 | 65 | Peru | 72.95 | 66.91 |
| 6 | Spain | 88.91 | 96.70 | 66 | Jordan | 72.24 | 65.58 |
| 7 | Portugal | 88.63 | 96.17 | 67 | Bolivia, Plurinational St. | 71.09 | 63.44 |
| 8 | Estonia | 88.59 | 96.10 | 68 | Mauritius | 70.85 | 62.99 |
| 9 | Malta | 88.48 | 95.89 | 69 | Namibia | 70.84 | 62.97 |
| 10 | France | 88.20 | 95.37 | 70 | Botswana | 70.72 | 62.75 |
| 11 | New Zealand | 88.00 | 95.00 | 71 | Korea, Rep. | 70.61 | 62.54 |
| 12 | United Kingdom | 87.38 | 93.84 | 72 | South Africa | 70.52 | 62.37 |
| 13 | Australia | 87.22 | 93.54 | 73 | Paraguay | 70.36 | 62.08 |
| 14 | Singapore | 87.04 | 93.21 | 74 | Algeria | 70.28 | 61.93 |
| 15 | Croatia | 86.98 | 93.09 | 75 | Bahrain | 70.07 | 61.53 |
| 16 | Switzerland | 86.93 | 93.00 | 76 | Qatar | 69.94 | 61.29 |
| 17 | Norway | 86.90 | 92.95 | 77 | Guatemala | 69.64 | 60.73 |
| 18 | Austria | 86.64 | 92.46 | 77 | Honduras | 69.64 | 60.73 |
| 19 | Ireland | 86.60 | 92.39 | 79 | Thailand | 69.54 | 60.54 |
| 20 | Luxembourg | 86.58 | 92.35 | 80 | United Arab Emirates | 69.35 | 60.19 |
| 21 | Greece | 85.81 | 90.91 | 81 | Lebanon | 69.14 | 59.80 |
| 22 | Latvia | 85.71 | 90.72 | 82 | Saudi Arabia | 68.63 | 58.85 |
| 23 | Lithuania | 85.49 | 90.31 | 83 | El Salvador | 68.07 | 57.80 |
| 24 | Slovakia | 85.42 | 90.18 | 84 | Turkey | 67.68 | 57.07 |
| 25 | Canada | 85.06 | 89.51 | 85 | Ecuador | 66.58 | 55.02 |
| 26 | United States of America | 84.72 | 88.88 | 86 | Egypt | 66.45 | 54.78 |
| 27 | Czech Republic | 84.67 | 88.78 | 87 | Iran, Islamic Rep. | 66.32 | 54.54 |
| 28 | Hungary | 84.60 | 88.65 | 88 | Indonesia | 65.85 | 53.66 |
| 29 | Italy | 84.48 | 88.43 | 89 | Sri Lanka | 65.55 | 53.10 |
| 30 | Germany | 84.26 | 88.02 | 90 | China | 65.10 | 52.26 |
| 31 | Azerbaijan | 83.78 | 87.12 | 91 | Bhutan | 64.99 | 52.05 |
| 32 | Russian Federation | 83.52 | 86.64 | 92 | Georgia | 64.96 | 52.00 |
| 33 | Bulgaria | 83.40 | 86.41 | 93 | Kuwait | 64.41 | 50.97 |
| 34 | Romania | 83.24 | 86.11 | 94 | Mongolia | 64.39 | 50.93 |
| 35 | Netherlands | 82.03 | 83.86 | 95 | Nicaragua | 64.19 | 50.56 |
| 36 | Armenia | 81.60 | 83.05 | 96 | Senegal | 63.73 | 49.70 |
| 37 | Poland | 81.26 | 82.42 | 97 | Bosnia and Herzegovina | 63.28 | 48.86 |
| 38 | Japan | 80.59 | 81.17 | 98 | Kenya | 62.49 | 47.39 |
| 39 | Cyprus | 80.24 | 80.52 | 99 | Oman | 60.13 | 42.98 |
| 40 | Belgium | 80.15 | 80.35 | 100 | Zimbabwe | 59.25 | 41.34 |
| 41 | Costa Rica | 80.03 | 80.12 | 101 | Ghana | 58.89 | 40.67 |
| 42 | Argentina | 79.84 | 79.77 | 102 | Viet Nam | 58.50 | 39.94 |
| 43 | Ukraine | 79.69 | 79.49 | 103 | Tanzania, United Rep. | 58.34 | 39.64 |
| 44 | Brazil | 78.90 | 78.01 | 104 | Uganda | 57.56 | 38.19 |
| 45 | Montenegro | 78.89 | 78.00 | 105 | India | 53.58 | 30.76 |
| 46 | Serbia | 78.67 | 77.58 | 106 | Gambia | 52.09 | 27.98 |
| 47 | Israel | 78.14 | 76.60 | 107 | Pakistan | 51.42 | 26.73 |
| 48 | Macedonia, FYR | 78.02 | 76.37 | 108 | Cambodia | 51.24 | 26.39 |
| 49 | Panama | 78.00 | 76.33 | 109 | Rwanda | 50.34 | 24.71 |
| 50 | Chile | 77.67 | 75.72 | 110 | Lao PDR | 50.29 | 24.62 |
| 51 | Tunisia | 77.28 | 74.99 | 111 | Nepal | 50.21 | 24.47 |
| 52 | Moldova, Rep. | 76.69 | 73.89 | 112 | Yemen | 49.79 | 23.68 |
| 53 | Venezuela, Bolivarian Rep. | 76.23 | 73.03 | 113 | Malawi | 49.69 | 23.50 |
| 54 | Colombia | 75.93 | 72.47 | 114 | Lesotho | 47.17 | 18.79 |
| 55 | Dominican Republic | 75.32 | 71.33 | 115 | Ethiopia | 45.83 | 16.29 |
| 56 | Albania | 74.38 | 69.58 | 116 | Mozambique | 41.82 | 8.81 |
| 57 | Trinidad and Tobago | 74.34 | 69.50 | 117 | Bangladesh | 41.77 | 8.72 |
| 58 | Malaysia | 74.23 | 69.30 | 118 | Mali | 41.48 | 8.17 |
| 59 | Morocco | 74.18 | 69.20 | 119 | Madagascar | 37.10 | 0.00 |
| 60 | Uruguay | 73.98 | 68.83 | | | | |

SOURCE: The 2016 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 2006.

4.2.2 Personal safety

Personal safety indicator | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Czech Republic | 95.68 | 100.00 | 61 | Armenia | 72.52 | 65.38 |
| 2 | Sweden | 94.04 | 97.55 | 62 | Senegal | 72.19 | 64.89 |
| 3 | Switzerland | 93.92 | 97.37 | 63 | Italy | 72.10 | 64.75 |
| 4 | Denmark | 93.85 | 97.26 | 64 | Saudi Arabia | 72.07 | 64.71 |
| 5 | Norway | 93.69 | 97.03 | 65 | Bahrain | 71.79 | 64.29 |
| 6 | Iceland | 93.59 | 96.88 | 66 | Panama | 70.91 | 62.97 |
| 7 | Japan | 93.56 | 96.83 | 67 | Bangladesh | 70.34 | 62.12 |
| 8 | Austria | 93.20 | 96.29 | 68 | Indonesia | 70.09 | 61.75 |
| 9 | Finland | 93.13 | 96.19 | 69 | Algeria | 69.71 | 61.18 |
| 10 | Australia | 93.10 | 96.14 | 70 | Jordan | 69.62 | 61.05 |
| 11 | Slovenia | 92.89 | 95.83 | 71 | Ghana | 69.58 | 60.99 |
| 12 | Canada | 92.79 | 95.68 | 72 | Sri Lanka | 69.01 | 60.13 |
| 13 | Korea, Rep. | 90.87 | 92.81 | 73 | Kazakhstan | 68.85 | 59.90 |
| 14 | Netherlands | 90.00 | 91.51 | 74 | Ethiopia | 68.41 | 59.24 |
| 15 | Germany | 89.70 | 91.06 | 75 | Argentina | 67.75 | 58.25 |
| 16 | Ireland | 89.65 | 90.99 | 76 | Bolivia, Plurinational St. | 67.73 | 58.22 |
| 17 | Singapore | 89.21 | 90.33 | 77 | Nicaragua | 67.08 | 57.25 |
| 18 | New Zealand | 89.01 | 90.03 | 78 | Malawi | 66.50 | 56.38 |
| 19 | Slovakia | 88.69 | 89.55 | 79 | Tunisia | 66.22 | 55.96 |
| 20 | Portugal | 88.58 | 89.39 | 80 | Namibia | 65.99 | 55.62 |
| 21 | Belgium | 88.57 | 89.37 | 81 | Paraguay | 65.89 | 55.47 |
| 22 | Poland | 87.59 | 87.91 | 82 | Madagascar | 65.52 | 54.92 |
| 23 | Bhutan | 85.73 | 85.13 | 83 | Mali | 64.66 | 53.63 |
| 24 | United Kingdom | 85.39 | 84.62 | 84 | Kyrgyzstan | 64.47 | 53.35 |
| 25 | Spain | 85.20 | 84.33 | 85 | China | 64.35 | 53.17 |
| 26 | Kuwait | 84.62 | 83.47 | 86 | Peru | 64.15 | 52.87 |
| 27 | Cyprus | 84.56 | 83.38 | 87 | Ecuador | 63.99 | 52.63 |
| 28 | France | 84.55 | 83.36 | 88 | Iran, Islamic Rep. | 63.35 | 51.67 |
| 29 | Qatar | 84.13 | 82.74 | 89 | Rwanda | 63.12 | 51.33 |
| 30 | United States of America | 83.31 | 81.51 | 90 | Uganda | 63.10 | 51.30 |
| 31 | Croatia | 83.16 | 81.29 | 91 | Turkey | 62.92 | 51.03 |
| 32 | Estonia | 83.09 | 81.18 | 92 | Egypt | 62.67 | 50.66 |
| 33 | Mauritius | 82.77 | 80.70 | 93 | Tanzania, United Rep. | 61.84 | 49.42 |
| 34 | Georgia | 82.49 | 80.28 | 94 | Ukraine | 61.05 | 48.24 |
| 35 | Latvia | 82.22 | 79.88 | 95 | India | 60.53 | 47.46 |
| 36 | Greece | 81.17 | 78.31 | 96 | Cambodia | 60.39 | 47.25 |
| 37 | Lithuania | 81.09 | 78.19 | 97 | Thailand | 59.67 | 46.17 |
| 38 | Serbia | 79.97 | 76.52 | 98 | Mozambique | 58.83 | 44.92 |
| 39 | Hungary | 79.63 | 76.01 | 99 | Gambia | 58.78 | 44.84 |
| 40 | Romania | 79.60 | 75.96 | 100 | Lesotho | 58.76 | 44.81 |
| 41 | United Arab Emirates | 79.37 | 75.62 | 101 | Russian Federation | 58.15 | 43.90 |
| 42 | Chile | 77.87 | 73.38 | 102 | Yemen | 57.80 | 43.38 |
| 43 | Moldova, Rep. | 77.31 | 72.54 | 103 | Philippines | 57.10 | 42.33 |
| 44 | Nepal | 77.18 | 72.35 | 104 | Lebanon | 56.95 | 42.11 |
| 45 | Bosnia and Herzegovina | 76.56 | 71.42 | 105 | Dominican Republic | 54.50 | 38.45 |
| 46 | Lao PDR | 76.07 | 70.69 | 106 | Trinidad and Tobago | 53.34 | 36.71 |
| 47 | Costa Rica | 75.88 | 70.40 | 107 | Pakistan | 52.64 | 35.67 |
| 48 | Bulgaria | 75.87 | 70.39 | 108 | Zimbabwe | 52.26 | 35.10 |
| 49 | Macedonia, FYR | 75.61 | 70.00 | 109 | Kenya | 51.39 | 33.80 |
| 50 | Azerbaijan | 75.31 | 69.55 | 110 | Mexico | 49.91 | 31.58 |
| 51 | Viet Nam | 75.23 | 69.43 | 111 | Colombia | 48.62 | 29.66 |
| 52 | Malaysia | 75.02 | 69.12 | 112 | Brazil | 47.81 | 28.45 |
| 53 | Oman | 75.01 | 69.10 | 113 | Guatemala | 45.70 | 25.29 |
| 54 | Botswana | 75.00 | 69.09 | 114 | South Africa | 41.84 | 19.52 |
| 55 | Montenegro | 74.59 | 68.48 | 115 | El Salvador | 39.90 | 16.62 |
| 56 | Mongolia | 74.52 | 68.37 | 116 | Venezuela, Bolivarian Rep. | 30.45 | 2.50 |
| 57 | Israel | 74.10 | 67.74 | 117 | Honduras | 28.78 | 0.00 |
| 58 | Uruguay | 74.01 | 67.61 | | Luxembourg | n/a | n/a |
| 59 | Albania | 72.80 | 65.80 | | Malta | n/a | n/a |
| 60 | Morocco | 72.69 | 65.64 | | | | |

SOURCE: Social Progress Imperative, The Social Progress Index 2016 (<http://www.socialprogressimperative.org/publication/2016-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 2006.

4.2.3 Physician density

Physicians (per 1,000 people) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Greece | 6.26 | 100.00 | 61 | Brazil | 1.85 | 29.33 |
| 2 | Austria | 5.15 | 82.21 | 61 | Kyrgyzstan | 1.85 | 29.33 |
| 3 | Georgia | 4.78 | 76.28 | 63 | Turkey | 1.75 | 27.72 |
| 4 | Portugal | 4.43 | 70.67 | 64 | Ecuador | 1.67 | 26.44 |
| 5 | Norway | 4.42 | 70.51 | 65 | Tunisia | 1.65 | 26.12 |
| 6 | Lithuania | 4.33 | 69.07 | 66 | Panama | 1.59 | 25.16 |
| 7 | Germany | 4.13 | 65.87 | 67 | Colombia | 1.57 | 24.84 |
| 8 | Sweden | 4.11 | 65.54 | 68 | United Arab Emirates | 1.56 | 24.68 |
| 8 | Switzerland | 4.11 | 65.54 | 69 | Oman | 1.54 | 24.36 |
| 10 | Bulgaria | 4.00 | 63.78 | 70 | China | 1.49 | 23.56 |
| 11 | Italy | 3.95 | 62.98 | 70 | Dominican Republic | 1.49 | 23.56 |
| 12 | Uruguay | 3.94 | 62.82 | 70 | Iran, Islamic Rep. | 1.49 | 23.56 |
| 13 | Malta | 3.91 | 62.34 | 73 | Albania | 1.29 | 20.35 |
| 14 | Spain | 3.82 | 60.90 | 73 | Paraguay | 1.29 | 20.35 |
| 15 | Iceland | 3.79 | 60.42 | 75 | Malaysia | 1.28 | 20.19 |
| 16 | Argentina | 3.76 | 59.94 | 76 | Algeria | 1.19 | 18.75 |
| 17 | Czech Republic | 3.68 | 58.65 | 77 | Trinidad and Tobago | 1.18 | 18.59 |
| 18 | Denmark | 3.65 | 58.17 | 77 | Viet Nam | 1.18 | 18.59 |
| 19 | Israel | 3.62 | 57.69 | 79 | Costa Rica | 1.15 | 18.11 |
| 20 | Azerbaijan | 3.40 | 54.17 | 80 | Peru | 1.12 | 17.63 |
| 21 | Slovakia | 3.39 | 54.01 | 81 | Chile | 1.03 | 16.19 |
| 22 | Australia | 3.37 | 53.69 | 82 | Bahrain | 0.94 | 14.74 |
| 23 | Netherlands | 3.35 | 53.37 | 83 | Nicaragua | 0.91 | 14.26 |
| 24 | Estonia | 3.32 | 52.88 | 84 | Guatemala | 0.90 | 14.10 |
| 24 | Hungary | 3.32 | 52.88 | 85 | Egypt | 0.81 | 12.66 |
| 26 | Russian Federation | 3.31 | 52.72 | 85 | Pakistan | 0.81 | 12.66 |
| 27 | Kazakhstan | 3.27 | 52.08 | 87 | South Africa | 0.77 | 12.02 |
| 28 | France | 3.23 | 51.44 | 88 | India | 0.73 | 11.38 |
| 29 | Latvia | 3.22 | 51.28 | 88 | Sri Lanka | 0.73 | 11.38 |
| 30 | Croatia | 3.13 | 49.84 | 90 | Morocco | 0.62 | 9.62 |
| 31 | Finland | 3.01 | 47.92 | 91 | Bolivia, Plurinational St. | 0.47 | 7.21 |
| 32 | Ukraine | 3.00 | 47.76 | 92 | Bangladesh | 0.39 | 5.93 |
| 33 | Belgium | 2.97 | 47.28 | 92 | Thailand | 0.39 | 5.93 |
| 34 | Luxembourg | 2.92 | 46.47 | 94 | Botswana | 0.38 | 5.77 |
| 35 | Mongolia | 2.88 | 45.83 | 95 | Namibia | 0.37 | 5.61 |
| 36 | New Zealand | 2.85 | 45.35 | 96 | Yemen | 0.31 | 4.65 |
| 37 | United Kingdom | 2.81 | 44.71 | 97 | Bhutan | 0.26 | 3.85 |
| 38 | Armenia | 2.80 | 44.55 | 98 | Indonesia | 0.20 | 2.88 |
| 38 | Macedonia, FYR | 2.80 | 44.55 | 98 | Kenya | 0.20 | 2.88 |
| 40 | Ireland | 2.79 | 44.39 | 100 | Lao PDR | 0.18 | 2.56 |
| 41 | Slovenia | 2.77 | 44.07 | 101 | Cambodia | 0.17 | 2.40 |
| 42 | Romania | 2.67 | 42.47 | 102 | Madagascar | 0.14 | 1.92 |
| 43 | Jordan | 2.65 | 42.15 | 103 | Gambia | 0.11 | 1.44 |
| 44 | Saudi Arabia | 2.57 | 40.87 | 104 | Ghana | 0.10 | 1.28 |
| 45 | United States of America | 2.55 | 40.54 | 105 | Mali | 0.09 | 1.12 |
| 46 | Moldova, Rep. | 2.54 | 40.38 | 106 | Zimbabwe | 0.07 | 0.80 |
| 47 | Cyprus | 2.50 | 39.74 | 107 | Mozambique | 0.06 | 0.64 |
| 48 | Canada | 2.48 | 39.42 | 107 | Rwanda | 0.06 | 0.64 |
| 49 | Serbia | 2.46 | 39.10 | 107 | Senegal | 0.06 | 0.64 |
| 50 | Lebanon | 2.38 | 37.82 | 110 | Ethiopia | 0.03 | 0.16 |
| 51 | Montenegro | 2.34 | 37.18 | 110 | Tanzania, United Rep. | 0.03 | 0.16 |
| 52 | Japan | 2.30 | 36.54 | 112 | Malawi | 0.02 | 0.00 |
| 53 | Poland | 2.27 | 36.06 | | Honduras | n/a | n/a |
| 54 | Korea, Rep. | 2.23 | 35.42 | | Lesotho | n/a | n/a |
| 55 | Mexico | 2.07 | 32.85 | | Mauritius | n/a | n/a |
| 56 | Qatar | 1.96 | 31.09 | | Nepal | n/a | n/a |
| 57 | Kuwait | 1.95 | 30.93 | | Philippines | n/a | n/a |
| 58 | El Salvador | 1.92 | 30.45 | | Uganda | n/a | n/a |
| 59 | Singapore | 1.91 | 30.29 | | Venezuela, Bolivarian Rep. | n/a | n/a |
| 60 | Bosnia and Herzegovina | 1.89 | 29.97 | | | | |

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 2006.

4.2.4 Sanitation

Population with access to improved sanitation facilities (%) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|--------|--------|------|----------------------------|-------|-------|
| 1 | Australia | 100.00 | 100.00 | 61 | Trinidad and Tobago | 91.50 | 90.34 |
| 1 | Austria | 100.00 | 100.00 | 62 | Macedonia, FYR | 90.90 | 89.66 |
| 1 | Cyprus | 100.00 | 100.00 | 63 | Ireland | 90.50 | 89.20 |
| 1 | Israel | 100.00 | 100.00 | 64 | Iran, Islamic Rep. | 90.00 | 88.64 |
| 1 | Japan | 100.00 | 100.00 | 65 | Armenia | 89.50 | 88.07 |
| 1 | Korea, Rep. | 100.00 | 100.00 | 66 | Azerbaijan | 89.30 | 87.84 |
| 1 | Kuwait | 100.00 | 100.00 | 67 | Paraguay | 88.60 | 87.05 |
| 1 | Malta | 100.00 | 100.00 | 68 | Latvia | 87.80 | 86.14 |
| 1 | Saudi Arabia | 100.00 | 100.00 | 69 | Algeria | 87.60 | 85.91 |
| 1 | Singapore | 100.00 | 100.00 | 70 | Georgia | 86.30 | 84.43 |
| 1 | United States of America | 100.00 | 100.00 | 71 | Bulgaria | 86.00 | 84.09 |
| 12 | Spain | 99.90 | 99.89 | 72 | Mexico | 85.20 | 83.18 |
| 12 | Switzerland | 99.90 | 99.89 | 73 | Ecuador | 84.70 | 82.61 |
| 14 | Canada | 99.80 | 99.77 | 74 | Dominican Republic | 84.00 | 81.82 |
| 15 | Portugal | 99.70 | 99.66 | 75 | Brazil | 82.80 | 80.45 |
| 16 | Denmark | 99.60 | 99.55 | 76 | Honduras | 82.60 | 80.23 |
| 17 | Belgium | 99.50 | 99.43 | 77 | Colombia | 81.10 | 78.52 |
| 17 | Italy | 99.50 | 99.43 | 78 | Lebanon | 80.70 | 78.07 |
| 19 | Sweden | 99.30 | 99.20 | 79 | Romania | 79.10 | 76.25 |
| 20 | Bahrain | 99.20 | 99.09 | 80 | Viet Nam | 78.00 | 75.00 |
| 20 | Germany | 99.20 | 99.09 | 81 | Morocco | 76.70 | 73.52 |
| 20 | United Kingdom | 99.20 | 99.09 | 82 | China | 76.50 | 73.30 |
| 23 | Chile | 99.10 | 98.98 | 83 | Moldova, Rep. | 76.40 | 73.18 |
| 23 | Czech Republic | 99.10 | 98.98 | 84 | Peru | 76.20 | 72.95 |
| 23 | Slovenia | 99.10 | 98.98 | 85 | El Salvador | 75.00 | 71.59 |
| 26 | Greece | 99.00 | 98.86 | 85 | Panama | 75.00 | 71.59 |
| 27 | Iceland | 98.80 | 98.64 | 87 | Philippines | 73.90 | 70.34 |
| 27 | Slovakia | 98.80 | 98.64 | 88 | Russian Federation | 72.20 | 68.41 |
| 29 | France | 98.70 | 98.52 | 89 | Lao PDR | 70.90 | 66.93 |
| 30 | Jordan | 98.60 | 98.41 | 90 | Nicaragua | 67.90 | 63.52 |
| 31 | Norway | 98.10 | 97.84 | 91 | South Africa | 66.40 | 61.82 |
| 32 | Hungary | 98.00 | 97.73 | 92 | Guatemala | 63.90 | 58.98 |
| 32 | Qatar | 98.00 | 97.73 | 93 | Pakistan | 63.50 | 58.52 |
| 34 | Netherlands | 97.70 | 97.39 | 94 | Botswana | 63.40 | 58.41 |
| 35 | Finland | 97.60 | 97.27 | 95 | Rwanda | 61.60 | 56.36 |
| 35 | Luxembourg | 97.60 | 97.27 | 96 | Indonesia | 60.80 | 55.45 |
| 35 | United Arab Emirates | 97.60 | 97.27 | 97 | Bangladesh | 60.60 | 55.23 |
| 38 | Kazakhstan | 97.50 | 97.16 | 98 | Mongolia | 59.70 | 54.20 |
| 39 | Estonia | 97.20 | 96.82 | 99 | Gambia | 58.90 | 53.30 |
| 39 | Poland | 97.20 | 96.82 | 100 | Yemen | 53.30 | 46.93 |
| 41 | Croatia | 97.00 | 96.59 | 101 | Bhutan | 50.40 | 43.64 |
| 42 | Oman | 96.70 | 96.25 | 102 | Bolivia, Plurinational St. | 50.30 | 43.52 |
| 43 | Argentina | 96.40 | 95.91 | 103 | Senegal | 47.60 | 40.45 |
| 43 | Serbia | 96.40 | 95.91 | 104 | Nepal | 45.80 | 38.41 |
| 43 | Uruguay | 96.4 | 95.91 | 105 | Cambodia | 42.40 | 34.55 |
| 46 | Malaysia | 96.00 | 95.45 | 106 | Malawi | 41.00 | 32.95 |
| 47 | Montenegro | 95.90 | 95.34 | 107 | India | 39.60 | 31.36 |
| 47 | Ukraine | 95.90 | 95.34 | 108 | Zimbabwe | 36.80 | 28.18 |
| 49 | Sri Lanka | 95.10 | 94.43 | 109 | Namibia | 34.40 | 25.45 |
| 50 | Turkey | 94.90 | 94.20 | 110 | Lesotho | 30.30 | 20.80 |
| 51 | Bosnia and Herzegovina | 94.80 | 94.09 | 111 | Kenya | 30.10 | 20.57 |
| 52 | Egypt | 94.70 | 93.98 | 112 | Ethiopia | 28.00 | 18.18 |
| 53 | Costa Rica | 94.50 | 93.75 | 113 | Mali | 24.70 | 14.43 |
| 54 | Venezuela, Bolivarian Rep. | 94.40 | 93.64 | 114 | Mozambique | 20.50 | 9.66 |
| 55 | Kyrgyzstan | 93.30 | 92.39 | 115 | Uganda | 19.10 | 8.07 |
| 56 | Albania | 93.20 | 92.27 | 116 | Tanzania, United Rep. | 15.60 | 4.09 |
| 57 | Mauritius | 93.10 | 92.16 | 117 | Ghana | 14.90 | 3.30 |
| 58 | Thailand | 93.00 | 92.05 | 118 | Madagascar | 12.00 | 0.00 |
| 59 | Lithuania | 92.40 | 91.36 | | New Zealand | n/a | n/a |
| 60 | Tunisia | 91.60 | 90.45 | | | | |

SOURCE: World Bank, World Development Indicators based on WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (<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 2006.

Pillar 5

Vocational and Technical Skills

5.1.1 Workforce with secondary education

Labour force with secondary education (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | United States of America | 87.86 | 100.00 | 61 | Dominican Republic | 35.29 | 30.45 |
| 2 | Kyrgyzstan | 73.92 | 64.66 | 62 | Madagascar | 33.64 | 28.98 |
| 3 | Slovakia | 71.66 | 62.66 | 63 | Saudi Arabia | 33.37 | 28.74 |
| 4 | Czech Republic | 71.48 | 62.50 | 64 | Malta | 31.84 | 27.39 |
| 5 | Bosnia and Herzegovina | 66.58 | 58.16 | 65 | Luxembourg | 31.65 | 27.22 |
| 6 | Azerbaijan | 66.23 | 57.85 | 66 | Colombia | 30.55 | 26.25 |
| 7 | Armenia | 65.93 | 57.59 | 67 | Singapore | 30.24 | 25.97 |
| 8 | Montenegro | 65.60 | 57.29 | 68 | Ecuador | 29.76 | 25.55 |
| 9 | Croatia | 62.90 | 54.90 | 69 | Indonesia | 28.90 | 24.79 |
| 10 | Georgia | 62.71 | 54.73 | 70 | Uruguay | 27.16 | 23.24 |
| 11 | Hungary | 61.58 | 53.73 | 71 | Lesotho | 26.65 | 22.79 |
| 12 | Poland | 61.52 | 53.68 | 72 | Portugal | 26.01 | 22.23 |
| 13 | Romania | 59.19 | 51.62 | 73 | Canada | 25.81 | 22.05 |
| 14 | Germany | 58.26 | 50.79 | 74 | Qatar | 25.79 | 22.03 |
| 15 | Bulgaria | 56.65 | 49.37 | 75 | Venezuela, Bolivarian Rep. | 25.53 | 21.80 |
| 16 | Slovenia | 56.48 | 49.22 | 76 | Paraguay | 25.13 | 21.45 |
| 17 | Moldova, Rep. | 56.15 | 48.92 | 77 | Honduras | 23.87 | 20.33 |
| 18 | Latvia | 56.12 | 48.90 | 78 | Spain | 23.77 | 20.24 |
| 19 | Macedonia, FYR | 54.48 | 47.44 | 79 | Mexico | 22.29 | 18.93 |
| 20 | Lithuania | 53.65 | 46.71 | 80 | Yemen | 21.41 | 18.15 |
| 21 | Austria | 52.67 | 45.84 | 81 | Bangladesh | 21.17 | 17.94 |
| 22 | Japan | 52.49 | 45.68 | 82 | Morocco | 20.75 | 17.57 |
| 23 | Chile | 51.42 | 44.73 | 83 | Kuwait | 20.72 | 17.54 |
| 24 | New Zealand | 51.00 | 44.36 | 84 | Turkey | 20.56 | 17.40 |
| 25 | Estonia | 50.65 | 44.05 | 85 | Costa Rica | 20.43 | 17.28 |
| 26 | Mongolia | 47.69 | 41.43 | 86 | Thailand | 19.52 | 16.48 |
| 27 | Italy | 46.82 | 40.66 | 87 | India | 18.37 | 15.46 |
| 28 | Finland | 46.52 | 40.39 | 88 | Lebanon | 18.14 | 15.25 |
| 29 | Sweden | 45.63 | 39.60 | 89 | Botswana | 17.45 | 14.64 |
| 30 | Ukraine | 45.54 | 39.53 | 90 | Viet Nam | 17.31 | 14.52 |
| 31 | Switzerland | 45.53 | 39.52 | 91 | Sri Lanka | 16.42 | 13.73 |
| 32 | France | 44.88 | 38.94 | 92 | Bhutan | 15.94 | 13.30 |
| 33 | Panama | 44.09 | 38.24 | 93 | Guatemala | 14.87 | 12.36 |
| 34 | Peru | 43.80 | 37.98 | 94 | El Salvador | 13.68 | 11.30 |
| 35 | Greece | 42.99 | 37.27 | 95 | Nepal | 12.62 | 10.36 |
| 36 | Israel | 42.66 | 36.97 | 96 | Gambia | 12.31 | 10.09 |
| 37 | Malaysia | 42.14 | 36.51 | 97 | Pakistan | 11.56 | 9.43 |
| 38 | Denmark | 41.89 | 36.29 | 98 | Lao PDR | 11.12 | 9.04 |
| 39 | Netherlands | 41.72 | 36.14 | 99 | Malawi | 8.93 | 7.10 |
| 40 | Brazil | 41.32 | 35.79 | 100 | Cambodia | 6.86 | 5.26 |
| 41 | United Kingdom | 40.62 | 35.17 | 101 | Senegal | 5.25 | 3.84 |
| 42 | Australia | 40.07 | 34.68 | 102 | Philippines | 4.93 | 3.55 |
| 43 | Kazakhstan | 39.97 | 34.59 | 103 | Ethiopia | 4.54 | 3.21 |
| 44 | Argentina | 39.92 | 34.55 | 104 | Tanzania, United Rep. | 3.97 | 2.70 |
| 45 | Mauritius | 39.89 | 34.52 | 105 | Mali | 3.49 | 2.28 |
| 46 | Belgium | 39.85 | 34.48 | 106 | Uganda | 2.14 | 1.08 |
| 47 | Norway | 39.67 | 34.33 | 107 | Namibia | 0.92 | 0.00 |
| 48 | Korea, Rep. | 39.22 | 33.93 | | Bahrain | n/a | n/a |
| 49 | Egypt | 39.16 | 33.87 | | China | n/a | n/a |
| 50 | Iceland | 38.27 | 33.09 | | Ghana | n/a | n/a |
| 51 | Russian Federation | 38.24 | 33.06 | | Iran, Islamic Rep. | n/a | n/a |
| 52 | Cyprus | 38.15 | 32.98 | | Jordan | n/a | n/a |
| 53 | Bolivia, Plurinational St. | 38.07 | 32.91 | | Kenya | n/a | n/a |
| 54 | Tunisia | 37.92 | 32.78 | | Mozambique | n/a | n/a |
| 55 | Ireland | 37.44 | 32.35 | | Oman | n/a | n/a |
| 56 | Albania | 37.18 | 32.12 | | Rwanda | n/a | n/a |
| 57 | Algeria | 36.51 | 31.53 | | Trinidad and Tobago | n/a | n/a |
| 58 | Nicaragua | 36.05 | 31.12 | | United Arab Emirates | n/a | n/a |
| 59 | Serbia | 35.43 | 30.57 | | Zimbabwe | n/a | n/a |
| 60 | South Africa | 35.32 | 30.47 | | | | |

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 2006.

5.1.2 Population with secondary education

Population with secondary education (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Czech Republic | 70.20 | 100.00 | 61 | Indonesia | 23.00 | 32.67 |
| 2 | Slovakia | 66.10 | 94.15 | 61 | Saudi Arabia | 23.00 | 32.67 |
| 3 | Kyrgyzstan | 61.50 | 87.59 | 63 | Dominican Republic | 22.50 | 31.95 |
| 4 | Azerbaijan | 58.60 | 83.45 | 64 | Russian Federation | 21.90 | 31.10 |
| 5 | Poland | 56.40 | 80.31 | 65 | Panama | 20.10 | 28.53 |
| 6 | Slovenia | 55.30 | 78.74 | 66 | Qatar | 19.40 | 27.53 |
| 7 | Montenegro | 52.90 | 75.32 | 67 | Pakistan | 19.00 | 26.96 |
| 8 | Croatia | 52.30 | 74.47 | 68 | Singapore | 18.90 | 26.82 |
| 9 | Estonia | 52.10 | 74.18 | 69 | Spain | 18.60 | 26.39 |
| 10 | Latvia | 51.00 | 72.61 | 70 | Bolivia, Plurinational St. | 18.50 | 26.25 |
| 11 | Bulgaria | 50.40 | 71.75 | 71 | Turkey | 18.20 | 25.82 |
| 12 | Austria | 49.90 | 71.04 | 72 | Lebanon | 17.50 | 24.82 |
| 13 | Bosnia and Herzegovina | 49.40 | 70.33 | 73 | Algeria | 17.30 | 24.54 |
| 14 | Serbia | 49.20 | 70.04 | 74 | Mexico | 17.00 | 24.11 |
| 15 | Germany | 48.60 | 69.19 | 75 | El Salvador | 16.80 | 23.82 |
| 16 | South Africa | 48.50 | 69.04 | 75 | India | 16.80 | 23.82 |
| 17 | Switzerland | 48.10 | 68.47 | 77 | Portugal | 16.70 | 23.68 |
| 18 | Romania | 46.90 | 66.76 | 78 | Guatemala | 16.30 | 23.11 |
| 19 | Hungary | 46.40 | 66.05 | 78 | Uruguay | 16.30 | 23.11 |
| 20 | United States of America | 46.10 | 65.62 | 80 | Costa Rica | 16.00 | 22.68 |
| 21 | Georgia | 45.10 | 64.19 | 81 | Sri Lanka | 15.50 | 21.97 |
| 22 | Denmark | 42.20 | 60.06 | 82 | Nepal | 15.20 | 21.54 |
| 23 | Moldova, Rep. | 41.70 | 59.34 | 83 | Jordan | 14.20 | 20.11 |
| 24 | Armenia | 41.30 | 58.77 | 84 | Kenya | 13.90 | 19.69 |
| 25 | Japan | 39.90 | 56.78 | 85 | Viet Nam | 13.60 | 19.26 |
| 26 | France | 38.80 | 55.21 | 86 | China | 13.50 | 19.12 |
| 27 | Finland | 38.70 | 55.06 | 86 | Kuwait | 13.50 | 19.12 |
| 28 | Norway | 38.10 | 54.21 | 86 | Thailand | 13.50 | 19.12 |
| 29 | Netherlands | 37.90 | 53.92 | 89 | Honduras | 13.20 | 18.69 |
| 30 | Korea, Rep. | 37.40 | 53.21 | 90 | Malta | 12.80 | 18.12 |
| 31 | Sweden | 37.20 | 52.92 | 91 | Trinidad and Tobago | 12.70 | 17.97 |
| 32 | Chile | 35.50 | 50.50 | 92 | Ghana | 9.20 | 12.98 |
| 33 | Peru | 35.10 | 49.93 | 93 | Lesotho | 8.50 | 11.98 |
| 34 | Malaysia | 34.50 | 49.07 | 94 | Rwanda | 4.70 | 6.56 |
| 35 | Israel | 34.30 | 48.79 | 95 | Cambodia | 4.20 | 5.85 |
| 35 | Luxembourg | 34.30 | 48.79 | 96 | Mali | 4.00 | 5.56 |
| 37 | Italy | 34.20 | 48.64 | 96 | Senegal | 4.00 | 5.56 |
| 38 | Belgium | 32.90 | 46.79 | 98 | Ethiopia | 2.90 | 3.99 |
| 39 | Albania | 32.40 | 46.08 | 99 | Mozambique | 2.40 | 3.28 |
| 40 | Cyprus | 32.20 | 45.79 | 100 | Zimbabwe | 2.10 | 2.85 |
| 40 | Lithuania | 32.20 | 45.79 | 101 | Bahrain | 2.00 | 2.71 |
| 42 | Mongolia | 32.00 | 45.51 | 102 | Uganda | 1.70 | 2.28 |
| 43 | Mauritius | 30.50 | 43.37 | 103 | Tanzania, United Rep. | 0.80 | 1.00 |
| 44 | Kazakhstan | 30.40 | 43.22 | 104 | Bhutan | 0.10 | 0.00 |
| 45 | United Kingdom | 29.7 | 42.23 | | Argentina | n/a | n/a |
| 46 | Brazil | 29.40 | 41.80 | | Bangladesh | n/a | n/a |
| 47 | Australia | 29.30 | 41.65 | | Botswana | n/a | n/a |
| 48 | Oman | 29.10 | 41.37 | | Gambia | n/a | n/a |
| 49 | Ecuador | 28.70 | 40.80 | | Iceland | n/a | n/a |
| 50 | Tunisia | 27.50 | 39.09 | | Lao PDR | n/a | n/a |
| 51 | Greece | 27.40 | 38.94 | | Macedonia, FYR | n/a | n/a |
| 52 | Ireland | 27.20 | 38.66 | | Madagascar | n/a | n/a |
| 53 | Colombia | 25.80 | 36.66 | | Malawi | n/a | n/a |
| 54 | Philippines | 25.60 | 36.38 | | Morocco | n/a | n/a |
| 55 | Iran, Islamic Rep. | 25.20 | 35.81 | | Namibia | n/a | n/a |
| 56 | New Zealand | 25.10 | 35.66 | | Nicaragua | n/a | n/a |
| 57 | Venezuela, Bolivarian Rep. | 24.90 | 35.38 | | Ukraine | n/a | n/a |
| 58 | Egypt | 24.00 | 34.09 | | United Arab Emirates | n/a | n/a |
| 59 | Paraguay | 23.90 | 33.95 | | Yemen | n/a | n/a |
| 60 | Canada | 23.10 | 32.81 | | | | |

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 2006.

5.1.3 Technicians and associate professionals

Technicians and associate professionals (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Japan | 22.50 | 100.00 | 61 | Botswana | 7.80 | 34.08 |
| 2 | Germany | 22.30 | 99.10 | 61 | Kyrgyzstan | 7.80 | 34.08 |
| 3 | France | 20.30 | 90.13 | 61 | Paraguay | 7.80 | 34.08 |
| 4 | Singapore | 20.00 | 88.79 | 64 | Tunisia | 7.60 | 33.18 |
| 5 | Switzerland | 19.40 | 86.10 | 65 | Uruguay | 7.50 | 32.74 |
| 6 | Austria | 19.10 | 84.75 | 66 | Kuwait | 7.40 | 32.29 |
| 7 | Finland | 18.90 | 83.86 | 67 | Panama | 7.30 | 31.84 |
| 7 | Luxembourg | 18.90 | 83.86 | 67 | Venezuela, Bolivarian Rep. | 7.30 | 31.84 |
| 9 | Sweden | 18.20 | 80.72 | 69 | Bolivia, Plurinational St. | 7.20 | 31.39 |
| 10 | Italy | 17.50 | 77.58 | 70 | Peru | 6.90 | 30.04 |
| 11 | Czech Republic | 17.20 | 76.23 | 71 | Dominican Republic | 6.70 | 29.15 |
| 12 | Denmark | 17.10 | 75.78 | 71 | Moldova, Rep. | 6.70 | 29.15 |
| 13 | Norway | 17.00 | 75.34 | 73 | El Salvador | 6.20 | 26.91 |
| 14 | Canada | 16.80 | 74.44 | 74 | Honduras | 6.00 | 26.01 |
| 15 | Netherlands | 15.80 | 69.96 | 74 | Romania | 6.00 | 26.01 |
| 16 | Russian Federation | 15.30 | 67.71 | 76 | Georgia | 5.90 | 25.56 |
| 16 | Slovakia | 15.30 | 67.71 | 76 | Sri Lanka | 5.90 | 25.56 |
| 18 | Iceland | 14.80 | 65.47 | 78 | Turkey | 5.60 | 24.22 |
| 19 | Malta | 14.70 | 65.02 | 79 | Namibia | 5.40 | 23.32 |
| 20 | Hungary | 14.60 | 64.57 | 80 | Pakistan | 5.30 | 22.87 |
| 21 | Croatia | 14.50 | 64.13 | 81 | Qatar | 5.20 | 22.42 |
| 21 | United Arab Emirates | 14.50 | 64.13 | 82 | Iran, Islamic Rep. | 5.10 | 21.97 |
| 23 | Latvia | 14.20 | 62.78 | 83 | Ecuador | 4.60 | 19.73 |
| 24 | Montenegro | 13.80 | 60.99 | 83 | Thailand | 4.60 | 19.73 |
| 25 | Belgium | 13.60 | 60.09 | 85 | Morocco | 4.40 | 18.83 |
| 26 | Argentina | 13.40 | 59.19 | 86 | Lesotho | 4.20 | 17.94 |
| 26 | Cyprus | 13.40 | 59.19 | 87 | Algeria | 4.00 | 17.04 |
| 28 | Trinidad and Tobago | 13.20 | 58.30 | 88 | Cambodia | 3.70 | 15.70 |
| 29 | Israel | 13.10 | 57.85 | 89 | Bhutan | 3.60 | 15.25 |
| 30 | Australia | 12.90 | 56.95 | 90 | India | 3.30 | 13.90 |
| 31 | Slovenia | 12.80 | 56.50 | 91 | Viet Nam | 3.20 | 13.45 |
| 32 | Poland | 12.70 | 56.05 | 92 | Guatemala | 2.90 | 12.11 |
| 33 | New Zealand | 12.40 | 54.71 | 93 | Mongolia | 2.80 | 11.66 |
| 33 | United Kingdom | 12.40 | 54.71 | 94 | Indonesia | 2.70 | 11.21 |
| 35 | Ukraine | 12.00 | 52.91 | 94 | Philippines | 2.70 | 11.21 |
| 36 | Estonia | 11.80 | 52.02 | 96 | Albania | 2.10 | 8.52 |
| 36 | Portugal | 11.80 | 52.02 | 96 | Tanzania, United Rep. | 2.10 | 8.52 |
| 38 | Saudi Arabia | 11.60 | 51.12 | 98 | Ethiopia | 1.90 | 7.62 |
| 39 | Serbia | 11.40 | 50.22 | 98 | Mali | 1.90 | 7.62 |
| 40 | Ireland | 11.30 | 49.78 | 98 | Nepal | 1.90 | 7.62 |
| 40 | Kazakhstan | 11.30 | 49.78 | 101 | Bangladesh | 1.80 | 7.17 |
| 42 | Costa Rica | 11.20 | 49.33 | 101 | Ghana | 1.80 | 7.17 |
| 43 | Spain | 11.10 | 48.88 | 103 | Zimbabwe | 1.60 | 6.28 |
| 44 | Chile | 10.80 | 47.53 | 104 | Gambia | 1.50 | 5.83 |
| 44 | Korea, Rep. | 10.8 | 47.53 | 105 | Uganda | 1.40 | 5.38 |
| 46 | South Africa | 10.70 | 47.09 | 106 | Lao PDR | 1.30 | 4.93 |
| 47 | Mauritius | 10.20 | 44.84 | 107 | Madagascar | 0.90 | 3.14 |
| 48 | Malaysia | 10.00 | 43.95 | 108 | Rwanda | 0.80 | 2.69 |
| 49 | Armenia | 9.90 | 43.50 | 109 | Malawi | 0.20 | 0.00 |
| 50 | Lebanon | 9.70 | 42.60 | | Bahrain | n/a | n/a |
| 51 | Lithuania | 9.50 | 41.70 | | China | n/a | n/a |
| 52 | Azerbaijan | 9.40 | 41.26 | | Jordan | n/a | n/a |
| 52 | Bulgaria | 9.40 | 41.26 | | Kenya | n/a | n/a |
| 54 | Bosnia and Herzegovina | 9.30 | 40.81 | | Mexico | n/a | n/a |
| 55 | Nicaragua | 8.80 | 38.57 | | Mozambique | n/a | n/a |
| 56 | Macedonia, FYR | 8.70 | 38.12 | | Oman | n/a | n/a |
| 57 | Colombia | 8.40 | 36.77 | | Senegal | n/a | n/a |
| 58 | Brazil | 8.30 | 36.32 | | United States of America | n/a | n/a |
| 59 | Greece | 8.20 | 35.87 | | Yemen | n/a | n/a |
| 60 | Egypt | 7.90 | 34.53 | | | | |

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 2006.

Pillar 6

Global Knowledge Skills

6.1.2 Population with tertiary education

Population with tertiary education (%) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|------------------------|-------|-------|
| 1 | Russian Federation | 58.90 | 100.00 | 60 | Kuwait | 13.20 | 21.61 |
| 2 | Canada | 47.70 | 80.79 | 62 | Brazil | 13.10 | 21.44 |
| 3 | Armenia | 47.00 | 79.59 | 63 | Zimbabwe | 13.00 | 21.27 |
| 4 | Singapore | 42.90 | 72.56 | 64 | Hungary | 12.80 | 20.93 |
| 5 | Estonia | 37.60 | 63.46 | 65 | Dominican Republic | 12.40 | 20.24 |
| 6 | Israel | 34.30 | 57.80 | 65 | Ecuador | 12.40 | 20.24 |
| 6 | Luxembourg | 34.30 | 57.80 | 67 | Tunisia | 12.30 | 20.07 |
| 8 | Denmark | 33.00 | 55.57 | 68 | Malta | 12.10 | 19.73 |
| 9 | Australia | 32.50 | 54.72 | 69 | Slovenia | 11.70 | 19.04 |
| 10 | Moldova, Rep. | 32.10 | 54.03 | 70 | Uruguay | 10.70 | 17.32 |
| 11 | Korea, Rep. | 31.80 | 53.52 | 71 | El Salvador | 9.90 | 15.95 |
| 12 | United States of America | 30.30 | 50.94 | 71 | India | 9.90 | 15.95 |
| 13 | Japan | 29.90 | 50.26 | 73 | Honduras | 9.80 | 15.78 |
| 14 | Spain | 29.30 | 49.23 | 74 | Bosnia and Herzegovina | 9.70 | 15.61 |
| 15 | Venezuela, Bolivarian Rep. | 28.60 | 48.03 | 75 | Trinidad and Tobago | 9.60 | 15.44 |
| 16 | Philippines | 26.10 | 43.74 | 76 | Indonesia | 8.80 | 14.07 |
| 17 | New Zealand | 25.80 | 43.22 | 77 | China | 8.40 | 13.38 |
| 18 | Azerbaijan | 25.40 | 42.54 | 78 | Guatemala | 8.10 | 12.86 |
| 18 | Norway | 25.40 | 42.54 | 79 | Algeria | 8.00 | 12.69 |
| 20 | United Kingdom | 25.10 | 42.02 | 79 | Uganda | 8.00 | 12.69 |
| 21 | Bulgaria | 24.50 | 40.99 | 81 | Paraguay | 7.60 | 12.01 |
| 21 | Cyprus | 24.50 | 40.99 | 82 | Pakistan | 6.90 | 10.81 |
| 23 | Finland | 23.00 | 38.42 | 83 | Nepal | 6.70 | 10.46 |
| 24 | Kazakhstan | 22.70 | 37.91 | 83 | Viet Nam | 6.70 | 10.46 |
| 25 | France | 21.60 | 36.02 | 85 | South Africa | 6.50 | 10.12 |
| 25 | Greece | 21.60 | 36.02 | 86 | Mauritius | 5.20 | 7.89 |
| 27 | Bolivia, Plurinational St. | 21.50 | 35.85 | 86 | Poland | 5.20 | 7.89 |
| 27 | Ireland | 21.50 | 35.85 | 88 | Czech Republic | 4.50 | 6.69 |
| 29 | Mongolia | 21.20 | 35.33 | 89 | Portugal | 4.20 | 6.17 |
| 30 | Saudi Arabia | 20.40 | 33.96 | 89 | Romania | 4.20 | 6.17 |
| 30 | Sweden | 20.40 | 33.96 | 91 | Bhutan | 3.80 | 5.49 |
| 32 | Qatar | 20.30 | 33.79 | 92 | Rwanda | 3.30 | 4.63 |
| 33 | Netherlands | 20.00 | 33.28 | 93 | Ghana | 3.10 | 4.29 |
| 34 | Montenegro | 19.50 | 32.42 | 94 | Slovakia | 2.70 | 3.60 |
| 35 | Oman | 19.40 | 32.25 | 95 | Senegal | 2.30 | 2.92 |
| 36 | Peru | 19.20 | 31.90 | 96 | Kenya | 2.20 | 2.74 |
| 37 | Costa Rica | 19.10 | 31.73 | 96 | Kyrgyzstan | 2.20 | 2.74 |
| 37 | Lithuania | 19.10 | 31.73 | 98 | Mali | 2.10 | 2.57 |
| 39 | Panama | 18.80 | 31.22 | 99 | Lesotho | 1.90 | 2.23 |
| 40 | Belgium | 18.60 | 30.87 | 99 | Tanzania, United Rep. | 1.90 | 2.23 |
| 41 | Bahrain | 18.30 | 30.36 | 101 | Mozambique | 1.70 | 1.89 |
| 41 | Croatia | 18.30 | 30.36 | 102 | Cambodia | 1.50 | 1.54 |
| 43 | Latvia | 18.20 | 30.19 | 103 | Ethiopia | 1.10 | 0.86 |
| 44 | Iran, Islamic Rep. | 18.10 | 30.02 | 104 | Albania | 0.60 | 0.00 |
| 44 | Serbia | 18.1 | 30.02 | | Argentina | n/a | n/a |
| 46 | Switzerland | 17.90 | 29.67 | | Bangladesh | n/a | n/a |
| 47 | Chile | 17.20 | 28.47 | | Botswana | n/a | n/a |
| 48 | Thailand | 16.80 | 27.79 | | Gambia | n/a | n/a |
| 49 | Malaysia | 16.40 | 27.10 | | Iceland | n/a | n/a |
| 50 | Colombia | 16.30 | 26.93 | | Lao PDR | n/a | n/a |
| 51 | Jordan | 16.20 | 26.76 | | Macedonia, FYR | n/a | n/a |
| 52 | Austria | 16.10 | 26.59 | | Madagascar | n/a | n/a |
| 53 | Georgia | 15.90 | 26.24 | | Malawi | n/a | n/a |
| 54 | Lebanon | 15.30 | 25.21 | | Morocco | n/a | n/a |
| 55 | Turkey | 14.50 | 23.84 | | Namibia | n/a | n/a |
| 56 | Germany | 14.40 | 23.67 | | Nicaragua | n/a | n/a |
| 56 | Italy | 14.40 | 23.67 | | Ukraine | n/a | n/a |
| 58 | Mexico | 14.10 | 23.16 | | United Arab Emirates | n/a | n/a |
| 58 | Sri Lanka | 14.10 | 23.16 | | Yemen | n/a | n/a |
| 60 | Egypt | 13.20 | 21.61 | | | | |

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 2006.

6.1.3 Professionals

Professionals (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Luxembourg | 35.50 | 100.00 | 61 | Algeria | 10.30 | 27.17 |
| 2 | Sweden | 27.80 | 77.75 | 61 | Lebanon | 10.30 | 27.17 |
| 3 | Norway | 27.10 | 75.72 | 63 | Turkey | 10.20 | 26.88 |
| 4 | Switzerland | 26.10 | 72.83 | 64 | Albania | 9.70 | 25.43 |
| 5 | Netherlands | 25.70 | 71.68 | 65 | Kyrgyzstan | 9.60 | 25.14 |
| 6 | Iceland | 25.40 | 70.81 | 65 | Mauritius | 9.60 | 25.14 |
| 7 | Denmark | 25.30 | 70.52 | 67 | Iran, Islamic Rep. | 9.10 | 23.70 |
| 8 | United Kingdom | 25.20 | 70.23 | 68 | Bhutan | 8.70 | 22.54 |
| 9 | Israel | 25.00 | 69.65 | 69 | Qatar | 8.60 | 22.25 |
| 10 | Belgium | 23.90 | 66.47 | 70 | Costa Rica | 8.30 | 21.39 |
| 10 | Finland | 23.90 | 66.47 | 71 | Ecuador | 8.10 | 20.81 |
| 12 | Lithuania | 23.40 | 65.03 | 72 | Kuwait | 8.00 | 20.52 |
| 13 | United States of America | 22.20 | 61.56 | 73 | Paraguay | 7.70 | 19.65 |
| 14 | Slovenia | 22.00 | 60.98 | 74 | Bolivia, Plurinational St. | 7.20 | 18.21 |
| 15 | Australia | 21.50 | 59.54 | 74 | Dominican Republic | 7.20 | 18.21 |
| 16 | Ireland | 21.30 | 58.96 | 74 | Namibia | 7.20 | 18.21 |
| 17 | Russian Federation | 20.40 | 56.36 | 74 | Peru | 7.20 | 18.21 |
| 18 | Estonia | 20.30 | 56.07 | 78 | Botswana | 6.80 | 17.05 |
| 19 | Korea, Rep. | 20.10 | 55.49 | 78 | Tunisia | 6.80 | 17.05 |
| 20 | Greece | 19.30 | 53.18 | 80 | Viet Nam | 6.50 | 16.18 |
| 21 | Poland | 18.90 | 52.02 | 81 | Sri Lanka | 6.40 | 15.90 |
| 22 | Canada | 18.70 | 51.45 | 82 | Guatemala | 5.60 | 13.58 |
| 23 | Singapore | 18.30 | 50.29 | 83 | Argentina | 5.50 | 13.29 |
| 24 | Portugal | 18.00 | 49.42 | 84 | Indonesia | 5.40 | 13.01 |
| 25 | Spain | 17.90 | 49.13 | 84 | Trinidad and Tobago | 5.40 | 13.01 |
| 26 | Latvia | 17.80 | 48.84 | 86 | Ghana | 5.30 | 12.72 |
| 26 | Montenegro | 17.80 | 48.84 | 86 | Thailand | 5.30 | 12.72 |
| 28 | France | 17.70 | 48.55 | 88 | Philippines | 5.10 | 12.14 |
| 28 | Ukraine | 17.70 | 48.55 | 89 | Lao PDR | 4.80 | 11.27 |
| 30 | Cyprus | 17.60 | 48.27 | 90 | Bangladesh | 4.70 | 10.98 |
| 30 | Germany | 17.60 | 48.27 | 91 | Cambodia | 4.40 | 10.12 |
| 32 | Austria | 17.00 | 46.53 | 92 | South Africa | 4.20 | 9.54 |
| 32 | Bulgaria | 17.00 | 46.53 | 93 | El Salvador | 4.00 | 8.96 |
| 34 | Kazakhstan | 16.80 | 45.95 | 94 | Gambia | 3.80 | 8.38 |
| 34 | New Zealand | 16.80 | 45.95 | 95 | India | 3.70 | 8.09 |
| 36 | Croatia | 16.70 | 45.66 | 96 | Nicaragua | 3.50 | 7.51 |
| 36 | Malta | 16.70 | 45.66 | 96 | Zimbabwe | 3.50 | 7.51 |
| 38 | Czech Republic | 15.30 | 41.62 | 98 | Honduras | 3.40 | 7.23 |
| 38 | Macedonia, FYR | 15.30 | 41.62 | 98 | Uganda | 3.40 | 7.23 |
| 38 | Mongolia | 15.30 | 41.62 | 100 | Malawi | 3.00 | 6.07 |
| 41 | Romania | 15.20 | 41.33 | 101 | Rwanda | 2.50 | 4.62 |
| 42 | Hungary | 15.10 | 41.04 | 102 | Colombia | 2.40 | 4.34 |
| 43 | Venezuela, Bolivarian Rep. | 15.00 | 40.75 | 103 | Madagascar | 2.10 | 3.47 |
| 44 | Italy | 14.60 | 39.60 | 104 | Morocco | 1.80 | 2.60 |
| 45 | Moldova, Rep. | 14.3 | 38.73 | 105 | Mali | 1.70 | 2.31 |
| 46 | United Arab Emirates | 14.20 | 38.44 | 105 | Nepal | 1.70 | 2.31 |
| 47 | Yemen | 13.50 | 36.42 | 107 | Pakistan | 1.50 | 1.73 |
| 48 | Serbia | 13.20 | 35.55 | 108 | Ethiopia | 1.30 | 1.16 |
| 49 | Armenia | 13.00 | 34.97 | 109 | Lesotho | 1.20 | 0.87 |
| 50 | Azerbaijan | 12.80 | 34.39 | 110 | Tanzania, United Rep. | 0.90 | 0.00 |
| 50 | Georgia | 12.80 | 34.39 | | Bahrain | n/a | n/a |
| 52 | Egypt | 12.10 | 32.37 | | China | n/a | n/a |
| 53 | Slovakia | 11.70 | 31.21 | | Japan | n/a | n/a |
| 54 | Bosnia and Herzegovina | 11.60 | 30.92 | | Jordan | n/a | n/a |
| 54 | Saudi Arabia | 11.60 | 30.92 | | Kenya | n/a | n/a |
| 56 | Chile | 11.50 | 30.64 | | Mexico | n/a | n/a |
| 57 | Uruguay | 11.30 | 30.06 | | Mozambique | n/a | n/a |
| 58 | Panama | 10.90 | 28.90 | | Oman | n/a | n/a |
| 59 | Brazil | 10.40 | 27.46 | | Senegal | n/a | n/a |
| 59 | Malaysia | 10.40 | 27.46 | | | | |

SOURCE: International Labour Organization, ILOSTAT (<http://www.ilo.org/global/statistics-and-databases/lang-en/index.htm>)

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6.1.4 Researchers

Full-time equivalent researchers (per million population) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|---------|--------|------|----------------------------|--------|-------|
| 1 | Israel | 8255.40 | 100.00 | 61 | Costa Rica | 572.98 | 6.80 |
| 2 | Denmark | 7483.58 | 90.64 | 62 | Uruguay | 524.25 | 6.21 |
| 3 | Korea, Rep. | 7087.35 | 85.83 | 63 | Chile | 455.50 | 5.38 |
| 4 | Sweden | 7021.88 | 85.04 | 64 | South Africa | 437.06 | 5.15 |
| 5 | Finland | 6816.77 | 82.55 | 65 | Ecuador | 400.72 | 4.71 |
| 6 | Singapore | 6658.50 | 80.63 | 66 | Bahrain | 361.99 | 4.24 |
| 7 | Norway | 5915.60 | 71.62 | 67 | Senegal | 361.12 | 4.23 |
| 8 | Iceland | 5902.53 | 71.46 | 68 | Venezuela, Bolivarian Rep. | 357.84 | 4.19 |
| 9 | Japan | 5230.72 | 63.31 | 69 | Bosnia and Herzegovina | 328.70 | 3.84 |
| 10 | Luxembourg | 5058.28 | 61.21 | 70 | Jordan | 307.98 | 3.59 |
| 11 | Austria | 4955.03 | 59.96 | 71 | Pakistan | 294.36 | 3.42 |
| 12 | Belgium | 4875.34 | 59.00 | 72 | Mexico | 241.80 | 2.78 |
| 13 | Ireland | 4575.20 | 55.35 | 73 | Kenya | 230.73 | 2.65 |
| 14 | Netherlands | 4548.14 | 55.03 | 74 | India | 215.85 | 2.47 |
| 15 | Australia | 4530.73 | 54.81 | 75 | Oman | 201.97 | 2.30 |
| 16 | Canada | 4518.51 | 54.67 | 76 | Philippines | 189.41 | 2.15 |
| 17 | Switzerland | 4481.07 | 54.21 | 77 | Paraguay | 184.06 | 2.08 |
| 18 | United Kingdom | 4470.78 | 54.09 | 78 | Mauritius | 181.11 | 2.05 |
| 19 | Germany | 4431.08 | 53.61 | 79 | Botswana | 175.51 | 1.98 |
| 20 | United States of America | 4231.99 | 51.19 | 80 | Bolivia, Plurinational St. | 165.95 | 1.86 |
| 21 | France | 4168.78 | 50.42 | 81 | Albania | 157.34 | 1.76 |
| 22 | New Zealand | 4008.71 | 48.48 | 82 | Namibia | 141.41 | 1.57 |
| 23 | Portugal | 3824.19 | 46.24 | 83 | Kuwait | 128.38 | 1.41 |
| 24 | Slovenia | 3820.99 | 46.20 | 84 | Colombia | 114.89 | 1.24 |
| 25 | Czech Republic | 3611.91 | 43.67 | 85 | Sri Lanka | 110.91 | 1.20 |
| 26 | Greece | 3201.27 | 38.69 | 86 | Zimbabwe | 89.61 | 0.94 |
| 27 | Estonia | 3189.19 | 38.54 | 87 | Indonesia | 89.53 | 0.94 |
| 28 | Russian Federation | 3131.11 | 37.84 | 88 | El Salvador | 65.29 | 0.64 |
| 29 | Lithuania | 2822.40 | 34.09 | 89 | Madagascar | 51.02 | 0.47 |
| 30 | Slovakia | 2654.78 | 32.06 | 90 | Malawi | 49.57 | 0.45 |
| 31 | Spain | 2654.65 | 32.06 | 91 | Ethiopia | 45.12 | 0.40 |
| 32 | Hungary | 2568.84 | 31.01 | 92 | Mozambique | 41.53 | 0.35 |
| 33 | Malaysia | 2261.44 | 27.29 | 93 | Panama | 39.41 | 0.33 |
| 34 | Poland | 2139.10 | 25.80 | 94 | Ghana | 38.68 | 0.32 |
| 35 | Serbia | 2071.22 | 24.98 | 95 | Uganda | 38.09 | 0.31 |
| 36 | Italy | 2018.09 | 24.33 | 96 | Gambia | 33.50 | 0.26 |
| 37 | United Arab Emirates | 2003.39 | 24.15 | 97 | Cambodia | 30.26 | 0.22 |
| 38 | Bulgaria | 1989.43 | 23.99 | 98 | Mali | 29.17 | 0.20 |
| 39 | Malta | 1951.42 | 23.52 | 99 | Guatemala | 26.74 | 0.18 |
| 40 | Latvia | 1833.54 | 22.09 | 100 | Lesotho | 23.26 | 0.13 |
| 41 | Tunisia | 1787.26 | 21.53 | 101 | Tanzania, United Rep. | 18.49 | 0.08 |
| 42 | Croatia | 1501.54 | 18.07 | 102 | Rwanda | 12.29 | 0.00 |
| 43 | Georgia | 1288.27 | 15.48 | | Algeria | n/a | n/a |
| 44 | Argentina | 1202.07 | 14.43 | | Armenia | n/a | n/a |
| 45 | China | 1176.58 | 14.12 | | Azerbaijan | n/a | n/a |
| 46 | Turkey | 1156.51 | 13.88 | | Bangladesh | n/a | n/a |
| 47 | Morocco | 1032.54 | 12.38 | | Bhutan | n/a | n/a |
| 48 | Cyprus | 1013.77 | 12.15 | | Dominican Republic | n/a | n/a |
| 49 | Ukraine | 1006.00 | 12.06 | | Honduras | n/a | n/a |
| 50 | Romania | 894.81 | 10.71 | | Kyrgyzstan | n/a | n/a |
| 51 | Thailand | 874.29 | 10.46 | | Lao PDR | n/a | n/a |
| 52 | Macedonia, FYR | 858.81 | 10.27 | | Lebanon | n/a | n/a |
| 53 | Montenegro | 836.19 | 10.00 | | Mongolia | n/a | n/a |
| 54 | Kazakhstan | 734.05 | 8.76 | | Nepal | n/a | n/a |
| 55 | Brazil | 698.10 | 8.32 | | Nicaragua | n/a | n/a |
| 56 | Iran, Islamic Rep. | 691.41 | 8.24 | | Peru | n/a | n/a |
| 57 | Egypt | 679.81 | 8.10 | | Saudi Arabia | n/a | n/a |
| 58 | Viet Nam | 674.81 | 8.04 | | Trinidad and Tobago | n/a | n/a |
| 59 | Moldova, Rep. | 662.10 | 7.88 | | Yemen | n/a | n/a |
| 60 | Qatar | 597.06 | 7.09 | | | | |

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 2006.

6.1.5 Senior officials and managers

Legislators, senior officials, and managers (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Philippines | 16.20 | 100.00 | 61 | Italy | 3.80 | 22.50 |
| 2 | Singapore | 16.10 | 99.38 | 62 | Georgia | 3.60 | 21.25 |
| 3 | United States of America | 15.80 | 97.50 | 63 | Paraguay | 3.50 | 20.63 |
| 4 | Egypt | 14.00 | 86.25 | 64 | Botswana | 3.40 | 20.00 |
| 5 | New Zealand | 13.70 | 84.38 | 64 | Serbia | 3.40 | 20.00 |
| 6 | Pakistan | 12.70 | 78.13 | 66 | Finland | 3.30 | 19.38 |
| 7 | Estonia | 11.90 | 73.13 | 67 | Bosnia and Herzegovina | 3.10 | 18.13 |
| 7 | Lebanon | 11.90 | 73.13 | 67 | Namibia | 3.10 | 18.13 |
| 9 | Australia | 11.40 | 70.00 | 69 | Iran, Islamic Rep. | 2.90 | 16.88 |
| 10 | United Kingdom | 11.00 | 67.50 | 70 | Algeria | 2.70 | 15.63 |
| 11 | Iceland | 10.30 | 63.13 | 70 | Denmark | 2.70 | 15.63 |
| 11 | Israel | 10.30 | 63.13 | 70 | Greece | 2.70 | 15.63 |
| 13 | Latvia | 9.40 | 57.50 | 70 | Luxembourg | 2.70 | 15.63 |
| 14 | Lithuania | 9.30 | 56.88 | 74 | Dominican Republic | 2.60 | 15.00 |
| 14 | Malta | 9.30 | 56.88 | 74 | Honduras | 2.60 | 15.00 |
| 16 | Trinidad and Tobago | 9.20 | 56.25 | 74 | Nicaragua | 2.60 | 15.00 |
| 17 | Switzerland | 9.00 | 55.00 | 74 | Yemen | 2.60 | 15.00 |
| 18 | Russian Federation | 8.70 | 53.13 | 78 | Kuwait | 2.50 | 14.38 |
| 19 | Belgium | 8.40 | 51.25 | 79 | Ghana | 2.40 | 13.75 |
| 20 | Ireland | 8.30 | 50.63 | 80 | Japan | 2.30 | 13.13 |
| 21 | Canada | 8.20 | 50.00 | 80 | Qatar | 2.30 | 13.13 |
| 22 | Norway | 8.00 | 48.75 | 82 | Chile | 2.20 | 12.50 |
| 23 | Ukraine | 7.90 | 48.13 | 82 | Romania | 2.20 | 12.50 |
| 24 | Slovenia | 7.60 | 46.25 | 82 | Uruguay | 2.20 | 12.50 |
| 25 | United Arab Emirates | 7.50 | 45.63 | 85 | Cambodia | 2.10 | 11.88 |
| 26 | South Africa | 7.30 | 44.38 | 85 | Costa Rica | 2.10 | 11.88 |
| 27 | France | 7.20 | 43.75 | 87 | Bhutan | 2.00 | 11.25 |
| 27 | India | 7.20 | 43.75 | 87 | El Salvador | 2.00 | 11.25 |
| 27 | Moldova, Rep. | 7.20 | 43.75 | 89 | Indonesia | 1.80 | 10.00 |
| 30 | Armenia | 6.80 | 41.25 | 90 | Lao PDR | 1.50 | 8.13 |
| 31 | Mongolia | 6.60 | 40.00 | 91 | Korea, Rep. | 1.40 | 7.50 |
| 31 | Tunisia | 6.60 | 40.00 | 91 | Lesotho | 1.40 | 7.50 |
| 33 | Portugal | 6.50 | 39.38 | 93 | Azerbaijan | 1.30 | 6.88 |
| 34 | Poland | 6.30 | 38.13 | 93 | Ecuador | 1.30 | 6.88 |
| 35 | Bulgaria | 6.10 | 36.88 | 95 | Viet Nam | 1.10 | 5.63 |
| 36 | Colombia | 6.00 | 36.25 | 95 | Zimbabwe | 1.10 | 5.63 |
| 36 | Montenegro | 6.00 | 36.25 | 97 | Bangladesh | 1.00 | 5.00 |
| 38 | Sweden | 5.90 | 35.63 | 97 | Guatemala | 1.00 | 5.00 |
| 39 | Panama | 5.80 | 35.00 | 99 | Bolivia, Plurinational St. | 0.90 | 4.38 |
| 40 | Netherlands | 5.70 | 34.38 | 99 | Kyrgyzstan | 0.90 | 4.38 |
| 41 | Brazil | 5.20 | 31.25 | 101 | Madagascar | 0.80 | 3.75 |
| 41 | Czech Republic | 5.20 | 31.25 | 102 | Morocco | 0.70 | 3.13 |
| 41 | Kazakhstan | 5.20 | 31.25 | 103 | Ethiopia | 0.60 | 2.50 |
| 41 | Turkey | 5.20 | 31.25 | 103 | Malawi | 0.60 | 2.50 |
| 45 | Malaysia | 5.10 | 30.63 | 103 | Nepal | 0.60 | 2.50 |
| 46 | Argentina | 5.00 | 30.00 | 106 | Gambia | 0.50 | 1.88 |
| 47 | Mauritius | 4.80 | 28.75 | 106 | Peru | 0.50 | 1.88 |
| 48 | Macedonia, FYR | 4.70 | 28.13 | 106 | Tanzania, United Rep. | 0.50 | 1.88 |
| 49 | Croatia | 4.60 | 27.50 | 109 | Rwanda | 0.40 | 1.25 |
| 49 | Germany | 4.60 | 27.50 | 110 | Mali | 0.20 | 0.00 |
| 49 | Hungary | 4.60 | 27.50 | 110 | Uganda | 0.20 | 0.00 |
| 52 | Austria | 4.50 | 26.88 | | Bahrain | n/a | n/a |
| 52 | Slovakia | 4.50 | 26.88 | | China | n/a | n/a |
| 52 | Sri Lanka | 4.50 | 26.88 | | Jordan | n/a | n/a |
| 55 | Albania | 4.30 | 25.63 | | Kenya | n/a | n/a |
| 56 | Venezuela, Bolivarian Rep. | 4.20 | 25.00 | | Mexico | n/a | n/a |
| 57 | Saudi Arabia | 4.10 | 24.38 | | Mozambique | n/a | n/a |
| 57 | Spain | 4.10 | 24.38 | | Oman | n/a | n/a |
| 59 | Cyprus | 4.00 | 23.75 | | Senegal | n/a | n/a |
| 60 | Thailand | 3.90 | 23.13 | | | | |

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 2006.

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] | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Finland | 6.05 | 100.00 | 61 | Morocco | 4.00 | 39.71 |
| 2 | United States of America | 5.53 | 84.71 | 61 | Pakistan | 4.00 | 39.71 |
| 3 | Japan | 5.51 | 84.12 | 63 | Malta | 3.99 | 39.41 |
| 4 | Qatar | 5.49 | 83.53 | 63 | Panama | 3.99 | 39.41 |
| 5 | United Arab Emirates | 5.41 | 81.18 | 65 | Rwanda | 3.98 | 39.12 |
| 6 | Canada | 5.37 | 80.00 | 66 | Bangladesh | 3.92 | 37.35 |
| 7 | Malaysia | 5.32 | 78.53 | 66 | Bulgaria | 3.92 | 37.35 |
| 8 | Israel | 5.30 | 77.94 | 68 | Ethiopia | 3.91 | 37.06 |
| 9 | Singapore | 5.25 | 76.47 | 69 | Uganda | 3.90 | 36.76 |
| 10 | Greece | 5.24 | 76.18 | 70 | Colombia | 3.89 | 36.47 |
| 11 | Norway | 5.20 | 75.00 | 71 | Ghana | 3.86 | 35.59 |
| 12 | Ireland | 5.17 | 74.12 | 72 | Oman | 3.83 | 34.71 |
| 13 | Jordan | 5.15 | 73.53 | 72 | Philippines | 3.83 | 34.71 |
| 14 | Switzerland | 5.08 | 71.47 | 74 | Algeria | 3.80 | 33.82 |
| 15 | Iceland | 5.04 | 70.29 | 75 | Hungary | 3.79 | 33.53 |
| 16 | Germany | 5.03 | 70.00 | 75 | Macedonia, FYR | 3.79 | 33.53 |
| 17 | Australia | 5.02 | 69.71 | 77 | Senegal | 3.77 | 32.94 |
| 18 | Lebanon | 4.96 | 67.94 | 77 | Viet Nam | 3.77 | 32.94 |
| 19 | United Kingdom | 4.89 | 65.88 | 79 | Mauritius | 3.76 | 32.65 |
| 20 | Sweden | 4.88 | 65.59 | 79 | Montenegro | 3.76 | 32.65 |
| 21 | Netherlands | 4.81 | 63.53 | 81 | Czech Republic | 3.75 | 32.35 |
| 22 | Belgium | 4.77 | 62.35 | 82 | Croatia | 3.72 | 31.47 |
| 23 | Chile | 4.75 | 61.76 | 82 | Serbia | 3.72 | 31.47 |
| 24 | Costa Rica | 4.73 | 61.18 | 84 | Madagascar | 3.71 | 31.18 |
| 24 | New Zealand | 4.73 | 61.18 | 85 | Honduras | 3.69 | 30.59 |
| 26 | France | 4.72 | 60.88 | 86 | Argentina | 3.68 | 30.29 |
| 27 | Austria | 4.70 | 60.29 | 87 | Tanzania, United Rep. | 3.66 | 29.71 |
| 28 | China | 4.68 | 59.71 | 88 | Kuwait | 3.65 | 29.41 |
| 28 | Italy | 4.68 | 59.71 | 89 | Slovakia | 3.61 | 28.24 |
| 28 | Ukraine | 4.68 | 59.71 | 90 | Latvia | 3.56 | 26.76 |
| 31 | Sri Lanka | 4.67 | 59.41 | 91 | Malawi | 3.55 | 26.47 |
| 32 | Saudi Arabia | 4.66 | 59.12 | 91 | Mali | 3.55 | 26.47 |
| 33 | Spain | 4.64 | 58.53 | 93 | Namibia | 3.54 | 26.18 |
| 34 | Portugal | 4.61 | 57.65 | 93 | Nepal | 3.54 | 26.18 |
| 35 | India | 4.57 | 56.47 | 95 | Botswana | 3.50 | 25.00 |
| 36 | Denmark | 4.53 | 55.29 | 96 | Dominican Republic | 3.47 | 24.12 |
| 37 | Indonesia | 4.52 | 55.00 | 97 | Uruguay | 3.45 | 23.53 |
| 38 | Korea, Rep. | 4.43 | 52.35 | 98 | Brazil | 3.44 | 23.24 |
| 39 | Kenya | 4.42 | 52.06 | 99 | South Africa | 3.40 | 22.06 |
| 40 | Azerbaijan | 4.40 | 51.47 | 100 | Ecuador | 3.38 | 21.47 |
| 41 | Bahrain | 4.38 | 50.88 | 101 | Peru | 3.37 | 21.18 |
| 42 | Iran, Islamic Rep. | 4.32 | 49.12 | 102 | Georgia | 3.33 | 20.00 |
| 43 | Estonia | 4.31 | 48.82 | 103 | Kyrgyzstan | 3.26 | 17.94 |
| 44 | Egypt | 4.30 | 48.53 | 104 | Zimbabwe | 3.24 | 17.35 |
| 45 | Mongolia | 4.27 | 47.65 | 105 | Bosnia and Herzegovina | 3.22 | 16.76 |
| 46 | Tunisia | 4.26 | 47.35 | 106 | Venezuela, Bolivarian Rep. | 3.18 | 15.59 |
| 46 | Turkey | 4.26 | 47.35 | 107 | Lesotho | 3.17 | 15.29 |
| 48 | Poland | 4.25 | 47.06 | 108 | Bhutan | 3.16 | 15.00 |
| 49 | Armenia | 4.24 | 46.76 | 109 | Cambodia | 3.15 | 14.71 |
| 50 | Cyprus | 4.23 | 46.47 | 110 | Mozambique | 3.13 | 14.12 |
| 51 | Trinidad and Tobago | 4.21 | 45.88 | 111 | Albania | 3.10 | 13.24 |
| 52 | Luxembourg | 4.14 | 43.82 | 111 | Lao PDR | 3.10 | 13.24 |
| 52 | Mexico | 4.14 | 43.82 | 113 | Gambia | 2.97 | 9.41 |
| 52 | Thailand | 4.14 | 43.82 | 114 | Bolivia, Plurinational St. | 2.95 | 8.82 |
| 55 | Russian Federation | 4.13 | 43.53 | 115 | Moldova, Rep. | 2.87 | 6.47 |
| 56 | Romania | 4.08 | 42.06 | 116 | Yemen | 2.85 | 5.88 |
| 56 | Slovenia | 4.08 | 42.06 | 117 | Nicaragua | 2.79 | 4.12 |
| 58 | Lithuania | 4.07 | 41.76 | 118 | El Salvador | 2.74 | 2.65 |
| 59 | Kazakhstan | 4.05 | 41.18 | 119 | Paraguay | 2.65 | 0.00 |
| 60 | Guatemala | 4.01 | 40.00 | | | | |

SOURCE: World Economic Forum, Executive Opinion Survey 2015–2016 (<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 2006.

6.2.1 Innovation output

Innovation output sub-index | 2017

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|--------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Switzerland | 65.80 | 100.00 | 61 | Georgia | 26.60 | 31.11 |
| 2 | Netherlands | 60.90 | 91.39 | 62 | Macedonia, FYR | 26.30 | 30.58 |
| 3 | Sweden | 57.90 | 86.12 | 63 | Philippines | 25.60 | 29.35 |
| 4 | Luxembourg | 55.40 | 81.72 | 63 | Uruguay | 25.60 | 29.35 |
| 5 | United States of America | 53.90 | 79.09 | 65 | Saudi Arabia | 25.00 | 28.30 |
| 6 | Germany | 53.50 | 78.38 | 66 | Bahrain | 24.90 | 28.12 |
| 6 | United Kingdom | 53.50 | 78.38 | 67 | Morocco | 24.80 | 27.94 |
| 8 | Ireland | 53.40 | 78.21 | 68 | Kenya | 24.70 | 27.77 |
| 9 | Korea, Rep. | 52.10 | 75.92 | 68 | South Africa | 24.70 | 27.77 |
| 10 | Iceland | 51.40 | 74.69 | 70 | Tunisia | 24.60 | 27.59 |
| 11 | China | 50.90 | 73.81 | 71 | Dominican Republic | 24.50 | 27.42 |
| 12 | Denmark | 48.70 | 69.95 | 71 | Indonesia | 24.50 | 27.42 |
| 13 | Finland | 48.10 | 68.89 | 73 | Jordan | 24.00 | 26.54 |
| 14 | Israel | 46.80 | 66.61 | 74 | Colombia | 23.80 | 26.19 |
| 15 | Malta | 46.30 | 65.73 | 75 | Tanzania, United Rep. | 23.60 | 25.83 |
| 16 | Czech Republic | 46.20 | 65.55 | 76 | Sri Lanka | 23.40 | 25.48 |
| 17 | Singapore | 45.10 | 63.62 | 77 | Lebanon | 23.30 | 25.31 |
| 18 | Estonia | 44.90 | 63.27 | 78 | Paraguay | 23.00 | 24.78 |
| 18 | France | 44.90 | 63.27 | 79 | Brazil | 22.70 | 24.25 |
| 20 | Japan | 44.00 | 61.69 | 80 | Argentina | 22.60 | 24.08 |
| 21 | Austria | 43.30 | 60.46 | 81 | Mauritius | 22.50 | 23.90 |
| 22 | Norway | 42.30 | 58.70 | 82 | Ecuador | 22.20 | 23.37 |
| 23 | Canada | 41.70 | 57.64 | 83 | Peru | 21.60 | 22.32 |
| 24 | New Zealand | 41.60 | 57.47 | 84 | Trinidad and Tobago | 21.30 | 21.79 |
| 25 | Spain | 40.30 | 55.18 | 85 | Cambodia | 20.90 | 21.09 |
| 26 | Belgium | 40.20 | 55.01 | 86 | Azerbaijan | 20.50 | 20.39 |
| 27 | Cyprus | 39.70 | 54.13 | 87 | Ethiopia | 20.20 | 19.86 |
| 28 | Italy | 39.50 | 53.78 | 87 | Oman | 20.20 | 19.86 |
| 29 | Australia | 39.10 | 53.08 | 89 | Guatemala | 19.90 | 19.33 |
| 30 | Portugal | 38.30 | 51.67 | 90 | Kazakhstan | 19.80 | 19.16 |
| 31 | Bulgaria | 38.10 | 51.32 | 91 | Madagascar | 19.50 | 18.63 |
| 32 | Latvia | 38.00 | 51.14 | 92 | Bosnia and Herzegovina | 19.30 | 18.28 |
| 33 | Slovakia | 37.20 | 49.74 | 92 | Egypt | 19.30 | 18.28 |
| 33 | Slovenia | 37.20 | 49.74 | 94 | Senegal | 19.00 | 17.75 |
| 35 | Turkey | 35.50 | 46.75 | 95 | Bolivia, Plurinational St. | 18.70 | 17.22 |
| 36 | Hungary | 35.10 | 46.05 | 96 | Mozambique | 18.60 | 17.05 |
| 37 | Viet Nam | 34.90 | 45.69 | 97 | Pakistan | 18.20 | 16.34 |
| 38 | Malaysia | 34.50 | 44.99 | 98 | Namibia | 18.10 | 16.17 |
| 39 | Ukraine | 34.20 | 44.46 | 99 | Honduras | 18.00 | 15.99 |
| 40 | Poland | 33.80 | 43.76 | 100 | Kyrgyzstan | 17.90 | 15.82 |
| 41 | Moldova, Rep. | 32.30 | 41.12 | 101 | El Salvador | 17.30 | 14.76 |
| 42 | Thailand | 32.20 | 40.95 | 102 | Uganda | 17.20 | 14.59 |
| 43 | Romania | 32.00 | 40.60 | 103 | Bangladesh | 16.80 | 13.88 |
| 44 | Kuwait | 31.90 | 40.42 | 103 | Mali | 16.80 | 13.88 |
| 45 | Armenia | 31.6 | 39.89 | 105 | Botswana | 16.40 | 13.18 |
| 45 | Croatia | 31.60 | 39.89 | 106 | Malawi | 16.20 | 12.83 |
| 45 | Mongolia | 31.60 | 39.89 | 107 | Nepal | 15.90 | 12.30 |
| 48 | Lithuania | 30.40 | 37.79 | 108 | Albania | 15.70 | 11.95 |
| 49 | Costa Rica | 30.20 | 37.43 | 109 | Algeria | 15.60 | 11.78 |
| 50 | Montenegro | 29.30 | 35.85 | 109 | Zimbabwe | 15.60 | 11.78 |
| 50 | Russian Federation | 29.30 | 35.85 | 111 | Rwanda | 13.70 | 8.44 |
| 52 | Chile | 29.10 | 35.50 | 112 | Yemen | 8.90 | 0.00 |
| 53 | Qatar | 28.80 | 34.97 | | Bhutan | n/a | n/a |
| 54 | Panama | 28.70 | 34.80 | | Gambia | n/a | n/a |
| 55 | Iran, Islamic Rep. | 28.50 | 34.45 | | Ghana | n/a | n/a |
| 55 | United Arab Emirates | 28.50 | 34.45 | | Lao PDR | n/a | n/a |
| 57 | India | 28.10 | 33.74 | | Lesotho | n/a | n/a |
| 58 | Greece | 28.00 | 33.57 | | Nicaragua | n/a | n/a |
| 59 | Mexico | 27.10 | 31.99 | | Venezuela, Bolivarian Rep. | n/a | n/a |
| 60 | Serbia | 26.90 | 31.63 | | | | |

SOURCE: INSEAD, Cornell University, and World Intellectual Property Organization, *The Global Innovation Index 2017* (<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 2006.

6.2.2 High-value exports

High technology manufactures (%) | 2015

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Philippines | 53.10 | 100.00 | 61 | Cyprus | 6.20 | 11.68 |
| 2 | Singapore | 49.30 | 92.84 | 62 | Chile | 5.90 | 11.11 |
| 3 | Malaysia | 42.80 | 80.60 | 62 | South Africa | 5.90 | 11.11 |
| 4 | Kazakhstan | 41.20 | 77.59 | 64 | Paraguay | 5.70 | 10.73 |
| 5 | Malta | 31.90 | 60.08 | 65 | Georgia | 5.60 | 10.55 |
| 6 | Viet Nam | 26.90 | 50.66 | 66 | Armenia | 5.30 | 9.98 |
| 7 | France | 26.80 | 50.47 | 67 | Guatemala | 5.00 | 9.42 |
| 7 | Ireland | 26.80 | 50.47 | 68 | Ghana | 4.90 | 9.23 |
| 7 | Korea, Rep. | 26.80 | 50.47 | 69 | Peru | 4.70 | 8.85 |
| 7 | Switzerland | 26.80 | 50.47 | 69 | Yemen | 4.70 | 8.85 |
| 11 | China | 25.80 | 48.59 | 71 | El Salvador | 4.40 | 8.29 |
| 12 | Thailand | 21.40 | 40.30 | 71 | Portugal | 4.40 | 8.29 |
| 13 | United Kingdom | 20.80 | 39.17 | 73 | Oman | 4.10 | 7.72 |
| 14 | Norway | 20.50 | 38.61 | 74 | Ethiopia | 4.00 | 7.53 |
| 15 | Iceland | 19.90 | 37.48 | 74 | Moldova, Rep. | 4.00 | 7.53 |
| 15 | Netherlands | 19.90 | 37.48 | 74 | Mongolia | 4.00 | 7.53 |
| 17 | Israel | 19.70 | 37.10 | 77 | Dominican Republic | 3.80 | 7.16 |
| 18 | United States of America | 19.00 | 35.78 | 77 | Kenya | 3.80 | 7.16 |
| 19 | Costa Rica | 16.80 | 31.64 | 79 | Senegal | 3.60 | 6.78 |
| 19 | Japan | 16.80 | 31.64 | 80 | Morocco | 3.50 | 6.59 |
| 21 | Germany | 16.70 | 31.45 | 81 | Qatar | 3.40 | 6.40 |
| 22 | Denmark | 16.00 | 30.13 | 82 | Macedonia, FYR | 3.00 | 5.65 |
| 23 | Latvia | 15.00 | 28.25 | 83 | Zimbabwe | 2.90 | 5.46 |
| 24 | Czech Republic | 14.90 | 28.06 | 84 | Bosnia and Herzegovina | 2.80 | 5.27 |
| 25 | Mexico | 14.70 | 27.68 | 85 | Kuwait | 2.70 | 5.08 |
| 26 | Sweden | 14.30 | 26.93 | 85 | Namibia | 2.70 | 5.08 |
| 27 | Canada | 13.80 | 25.99 | 87 | Azerbaijan | 2.50 | 4.71 |
| 27 | Russian Federation | 13.80 | 25.99 | 88 | Honduras | 2.40 | 4.52 |
| 27 | Uruguay | 13.80 | 25.99 | 89 | Malawi | 2.20 | 4.14 |
| 30 | Hungary | 13.70 | 25.80 | 89 | Turkey | 2.20 | 4.14 |
| 31 | Australia | 13.50 | 25.42 | 91 | Lebanon | 2.10 | 3.95 |
| 32 | Austria | 13.40 | 25.24 | 92 | Jordan | 1.80 | 3.39 |
| 33 | Belgium | 13.00 | 24.48 | 92 | Uganda | 1.80 | 3.39 |
| 33 | Rwanda | 13.00 | 24.48 | 94 | Pakistan | 1.60 | 3.01 |
| 35 | Brazil | 12.30 | 23.16 | 95 | Albania | 1.50 | 2.82 |
| 36 | Kyrgyzstan | 11.90 | 22.41 | 96 | Mali | 1.20 | 2.26 |
| 36 | Lithuania | 11.90 | 22.41 | 97 | Venezuela, Bolivarian Rep. | 1.10 | 2.07 |
| 38 | Mozambique | 11.60 | 21.85 | 98 | Bahrain | 1.00 | 1.88 |
| 39 | Estonia | 11.40 | 21.47 | 99 | Cambodia | 0.80 | 1.51 |
| 40 | Greece | 11.00 | 20.72 | 99 | Egypt | 0.80 | 1.51 |
| 41 | Slovakia | 10.30 | 19.40 | 99 | Saudi Arabia | 0.80 | 1.51 |
| 42 | New Zealand | 9.60 | 18.08 | 99 | Sri Lanka | 0.80 | 1.51 |
| 43 | Colombia | 9.50 | 17.89 | 99 | Tanzania, United Rep. | 0.80 | 1.51 |
| 44 | Argentina | 9.00 | 16.95 | 104 | Botswana | 0.60 | 1.13 |
| 44 | Croatia | 9.00 | 16.95 | 104 | Nepal | 0.60 | 1.13 |
| 46 | Poland | 8.80 | 16.57 | 106 | Nicaragua | 0.50 | 0.94 |
| 47 | Finland | 8.70 | 16.38 | 107 | Algeria | 0.20 | 0.38 |
| 48 | United Arab Emirates | 8.50 | 16.01 | 107 | Madagascar | 0.20 | 0.38 |
| 49 | Bulgaria | 7.60 | 14.31 | 109 | Mauritius | 0.10 | 0.19 |
| 50 | India | 7.50 | 14.12 | 110 | Bhutan | 0.00 | 0.00 |
| 50 | Romania | 7.50 | 14.12 | 110 | Gambia | 0.00 | 0.00 |
| 52 | Ukraine | 7.30 | 13.75 | 110 | Lesotho | 0.00 | 0.00 |
| 53 | Ecuador | 7.20 | 13.56 | 110 | Panama | 0.00 | 0.00 |
| 53 | Italy | 7.20 | 13.56 | | Bangladesh | n/a | n/a |
| 55 | Spain | 7.10 | 13.37 | | Iran, Islamic Rep. | n/a | n/a |
| 56 | Luxembourg | 6.80 | 12.81 | | Lao PDR | n/a | n/a |
| 57 | Indonesia | 6.60 | 12.43 | | Montenegro | n/a | n/a |
| 58 | Bolivia, Plurinational St. | 6.50 | 12.24 | | Serbia | n/a | n/a |
| 59 | Slovenia | 6.40 | 12.05 | | Trinidad and Tobago | n/a | n/a |
| 60 | Tunisia | 6.30 | 11.86 | | | | |

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 2006.

6.2.3 New product entrepreneurial activity

New product entrepreneurial activity (%) | 2016

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Chile | 87.42 | 100.00 | 61 | Mexico | 37.71 | 35.98 |
| 2 | Turkey | 85.62 | 97.68 | 62 | Spain | 36.31 | 34.18 |
| 3 | China | 76.91 | 86.46 | 63 | Thailand | 36.04 | 33.83 |
| 4 | Guatemala | 75.95 | 85.23 | 64 | El Salvador | 35.56 | 33.21 |
| 5 | Lebanon | 74.76 | 83.70 | 65 | Saudi Arabia | 34.75 | 32.17 |
| 6 | Namibia | 68.59 | 75.75 | 66 | Montenegro | 34.63 | 32.02 |
| 7 | Italy | 68.17 | 75.21 | 67 | Hungary | 32.31 | 29.03 |
| 8 | Bolivia, Plurinational St. | 67.90 | 74.86 | 68 | Portugal | 32.19 | 28.87 |
| 9 | Luxembourg | 67.67 | 74.57 | 69 | Algeria | 31.97 | 28.59 |
| 10 | Yemen | 65.73 | 72.07 | 70 | Botswana | 30.94 | 27.26 |
| 11 | Korea, Rep. | 62.71 | 68.18 | 71 | Iran, Islamic Rep. | 30.57 | 26.79 |
| 12 | India | 62.58 | 68.01 | 72 | Ecuador | 30.03 | 26.09 |
| 13 | United Arab Emirates | 57.93 | 62.02 | 73 | Bulgaria | 29.92 | 25.95 |
| 14 | Poland | 57.80 | 61.85 | 74 | Venezuela, Bolivarian Rep. | 29.69 | 25.65 |
| 15 | Jordan | 57.26 | 61.16 | 75 | Croatia | 28.06 | 23.55 |
| 16 | Denmark | 57.24 | 61.13 | 76 | Georgia | 27.48 | 22.81 |
| 17 | Cyprus | 56.77 | 60.53 | 77 | Kazakhstan | 27.45 | 22.77 |
| 18 | Canada | 56.12 | 59.69 | 78 | Trinidad and Tobago | 26.03 | 20.94 |
| 19 | Belgium | 56.04 | 59.59 | 79 | Macedonia, FYR | 24.61 | 19.11 |
| 20 | Morocco | 55.69 | 59.14 | 80 | Bosnia and Herzegovina | 24.45 | 18.91 |
| 21 | Austria | 54.94 | 58.17 | 81 | Ethiopia | 23.37 | 17.51 |
| 22 | Malawi | 54.91 | 58.13 | 82 | Ghana | 21.81 | 15.51 |
| 23 | Ireland | 54.03 | 57.00 | 83 | Brazil | 20.35 | 13.63 |
| 24 | Philippines | 53.59 | 56.43 | 84 | Norway | 19.76 | 12.87 |
| 25 | Tunisia | 52.96 | 55.62 | 85 | Russian Federation | 17.51 | 9.97 |
| 26 | Israel | 52.37 | 54.86 | 86 | Uganda | 14.85 | 6.54 |
| 27 | Czech Republic | 52.10 | 54.51 | 87 | Senegal | 12.48 | 3.49 |
| 28 | Finland | 51.60 | 53.87 | 88 | Bangladesh | 10.54 | 0.99 |
| 29 | United Kingdom | 51.03 | 53.14 | 89 | Malaysia | 9.77 | 0.00 |
| 30 | France | 50.75 | 52.78 | | Albania | n/a | n/a |
| 31 | Iceland | 49.85 | 51.62 | | Armenia | n/a | n/a |
| 32 | Lithuania | 49.13 | 50.69 | | Azerbaijan | n/a | n/a |
| 32 | Qatar | 49.13 | 50.69 | | Bahrain | n/a | n/a |
| 34 | Singapore | 48.76 | 50.21 | | Bhutan | n/a | n/a |
| 35 | South Africa | 47.86 | 49.05 | | Cambodia | n/a | n/a |
| 36 | United States of America | 47.61 | 48.73 | | Gambia | n/a | n/a |
| 37 | Colombia | 47.48 | 48.56 | | Honduras | n/a | n/a |
| 38 | Japan | 47.40 | 48.46 | | Kenya | n/a | n/a |
| 39 | Estonia | 47.05 | 48.01 | | Kuwait | n/a | n/a |
| 40 | Pakistan | 46.87 | 47.78 | | Kyrgyzstan | n/a | n/a |
| 41 | Uruguay | 45.78 | 46.37 | | Lao PDR | n/a | n/a |
| 42 | Viet Nam | 45.05 | 45.43 | | Lesotho | n/a | n/a |
| 43 | Argentina | 44.87 | 45.20 | | Madagascar | n/a | n/a |
| 44 | Panama | 44.74 | 45.04 | | Mali | n/a | n/a |
| 45 | Sweden | 44.58 | 44.83 | | Malta | n/a | n/a |
| 46 | Indonesia | 44.51 | 44.74 | | Mauritius | n/a | n/a |
| 47 | Romania | 44.29 | 44.46 | | Moldova, Rep. | n/a | n/a |
| 48 | Switzerland | 44.27 | 44.43 | | Mongolia | n/a | n/a |
| 49 | Slovenia | 44.02 | 44.11 | | Mozambique | n/a | n/a |
| 50 | Slovakia | 43.92 | 43.98 | | Nepal | n/a | n/a |
| 51 | Latvia | 43.11 | 42.94 | | New Zealand | n/a | n/a |
| 52 | Australia | 42.78 | 42.51 | | Nicaragua | n/a | n/a |
| 53 | Serbia | 42.52 | 42.18 | | Oman | n/a | n/a |
| 54 | Netherlands | 42.09 | 41.62 | | Paraguay | n/a | n/a |
| 55 | Egypt | 41.23 | 40.52 | | Rwanda | n/a | n/a |
| 56 | Costa Rica | 41.20 | 40.48 | | Sri Lanka | n/a | n/a |
| 57 | Peru | 39.84 | 38.73 | | Tanzania, United Rep. | n/a | n/a |
| 58 | Dominican Republic | 38.69 | 37.24 | | Ukraine | n/a | n/a |
| 59 | Germany | 38.39 | 36.86 | | Zimbabwe | n/a | n/a |
| 60 | Greece | 38.26 | 36.69 | | | | |

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 2006.

6.2.4 New business density

New corporate registrations (per 1,000 working-age population) | 2014

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|----------------------|-------|--------|------|----------------------------|-------|-------|
| 1 | Malta | 17.26 | 100.00 | 61 | Dominican Republic | 1.20 | 6.79 |
| 2 | New Zealand | 16.63 | 96.34 | 62 | Uganda | 1.17 | 6.62 |
| 3 | Estonia | 16.05 | 92.98 | 63 | Turkey | 1.13 | 6.38 |
| 4 | Australia | 14.91 | 86.36 | 64 | Albania | 1.11 | 6.27 |
| 5 | Panama | 14.10 | 81.66 | 65 | Costa Rica | 1.10 | 6.21 |
| 6 | Cyprus | 13.70 | 79.34 | 66 | Kyrgyzstan | 1.08 | 6.09 |
| 7 | Botswana | 13.11 | 75.91 | 67 | Oman | 1.02 | 5.75 |
| 8 | United Kingdom | 12.90 | 74.70 | 68 | Azerbaijan | 0.99 | 5.57 |
| 9 | Latvia | 10.61 | 61.40 | 68 | Jordan | 0.99 | 5.57 |
| 10 | Singapore | 9.51 | 55.02 | 70 | Mexico | 0.94 | 5.28 |
| 11 | Iceland | 9.48 | 54.85 | 71 | Ukraine | 0.92 | 5.17 |
| 12 | Bulgaria | 8.86 | 51.25 | 72 | Thailand | 0.90 | 5.05 |
| 13 | Chile | 8.03 | 46.43 | 73 | Namibia | 0.85 | 4.76 |
| 14 | Norway | 7.72 | 44.63 | 74 | Bosnia and Herzegovina | 0.83 | 4.64 |
| 15 | Sweden | 6.87 | 39.70 | 75 | Austria | 0.73 | 4.06 |
| 16 | Montenegro | 6.85 | 39.58 | 76 | Madagascar | 0.70 | 3.89 |
| 17 | Mongolia | 6.31 | 36.45 | 77 | Nepal | 0.69 | 3.83 |
| 18 | Luxembourg | 6.10 | 35.23 | 78 | Algeria | 0.58 | 3.19 |
| 19 | Ireland | 5.78 | 33.37 | 79 | Bolivia, Plurinational St. | 0.57 | 3.13 |
| 20 | Georgia | 5.65 | 32.62 | 80 | Poland | 0.53 | 2.90 |
| 21 | Netherlands | 5.34 | 30.82 | 81 | El Salvador | 0.52 | 2.84 |
| 22 | Mauritius | 5.14 | 29.66 | 81 | Guatemala | 0.52 | 2.84 |
| 23 | Croatia | 4.63 | 26.70 | 83 | Sri Lanka | 0.51 | 2.79 |
| 24 | Portugal | 4.62 | 26.64 | 84 | Argentina | 0.43 | 2.32 |
| 25 | Slovenia | 4.44 | 25.59 | 85 | Senegal | 0.30 | 1.57 |
| 26 | Denmark | 4.36 | 25.13 | 86 | Indonesia | 0.29 | 1.51 |
| 27 | Russian Federation | 4.20 | 24.20 | 87 | Philippines | 0.27 | 1.39 |
| 28 | Lithuania | 4.19 | 24.14 | 88 | Japan | 0.15 | 0.70 |
| 29 | Romania | 4.07 | 23.45 | 89 | India | 0.12 | 0.52 |
| 30 | Macedonia, FYR | 3.70 | 21.30 | 90 | Lao PDR | 0.10 | 0.41 |
| 31 | Hungary | 3.66 | 21.07 | 91 | Bangladesh | 0.09 | 0.35 |
| 32 | Finland | 3.43 | 19.73 | 92 | Malawi | 0.08 | 0.29 |
| 33 | Czech Republic | 3.42 | 19.67 | 93 | Bhutan | 0.06 | 0.17 |
| 34 | Israel | 3.11 | 17.88 | 94 | Pakistan | 0.04 | 0.06 |
| 35 | Slovakia | 3.10 | 17.82 | 95 | Ethiopia | 0.03 | 0.00 |
| 36 | Spain | 2.97 | 17.06 | | Bahrain | n/a | n/a |
| 37 | Brazil | 2.88 | 16.54 | | Cambodia | n/a | n/a |
| 38 | Switzerland | 2.53 | 14.51 | | China | n/a | n/a |
| 39 | Uruguay | 2.49 | 14.28 | | Ecuador | n/a | n/a |
| 40 | Peru | 2.44 | 13.99 | | Egypt | n/a | n/a |
| 41 | Malaysia | 2.37 | 13.58 | | Gambia | n/a | n/a |
| 42 | Italy | 2.32 | 13.29 | | Ghana | n/a | n/a |
| 43 | Korea, Rep. | 2.30 | 13.17 | | Greece | n/a | n/a |
| 44 | France | 2.26 | 12.94 | | Honduras | n/a | n/a |
| 45 | Belgium | 2.05 | 11.72 | | Iran, Islamic Rep. | n/a | n/a |
| 46 | Colombia | 2.00 | 11.43 | | Kuwait | n/a | n/a |
| 47 | South Africa | 1.82 | 10.39 | | Lebanon | n/a | n/a |
| 48 | Kenya | 1.80 | 10.27 | | Mali | n/a | n/a |
| 49 | Kazakhstan | 1.71 | 9.75 | | Mozambique | n/a | n/a |
| 50 | Qatar | 1.70 | 9.69 | | Nicaragua | n/a | n/a |
| 51 | Moldova, Rep. | 1.63 | 9.29 | | Paraguay | n/a | n/a |
| 52 | Serbia | 1.62 | 9.23 | | Saudi Arabia | n/a | n/a |
| 53 | Lesotho | 1.55 | 8.82 | | Tanzania, United Rep. | n/a | n/a |
| 54 | Morocco | 1.54 | 8.76 | | Trinidad and Tobago | n/a | n/a |
| 55 | Armenia | 1.52 | 8.65 | | United States of America | n/a | n/a |
| 55 | Tunisia | 1.52 | 8.65 | | Venezuela, Bolivarian Rep. | n/a | n/a |
| 57 | Rwanda | 1.49 | 8.47 | | Viet Nam | n/a | n/a |
| 58 | United Arab Emirates | 1.38 | 7.84 | | Yemen | n/a | n/a |
| 59 | Germany | 1.29 | 7.31 | | Zimbabwe | n/a | n/a |
| 60 | Canada | 1.28 | 7.25 | | | | |

SOURCE: World Bank, *Doing Business 2014: Understanding Regulations for Small and Medium-Size Enterprises* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2014>)

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 2006.

6.2.5 Scientific journal articles

Number of scientific and technical journal articles (per million PPP\$ GDP) | 2013

| Rank | Country | Value | Score | Rank | Country | Value | Score |
|------|-------------------------------|-------|--------|------|--------------------------------|-------|-------|
| 1 | Slovenia..... | 55.25 | 100.00 | 61 | Egypt..... | 10.07 | 17.78 |
| 1 | Argentina..... | 55.00 | 100.00 | 62 | Morocco..... | 10.06 | 17.76 |
| 3 | Serbia..... | 50.88 | 92.05 | 63 | Malawi..... | 9.51 | 16.76 |
| 4 | Denmark..... | 48.41 | 87.55 | 64 | Pakistan..... | 9.24 | 16.27 |
| 5 | Croatia..... | 45.92 | 83.02 | 65 | Thailand..... | 8.26 | 14.49 |
| 6 | Portugal..... | 45.84 | 82.88 | 66 | Senegal..... | 8.24 | 14.45 |
| 7 | Australia..... | 45.31 | 81.91 | 66 | Uruguay..... | 8.24 | 14.45 |
| 8 | Finland..... | 44.99 | 81.33 | 68 | Colombia..... | 7.36 | 12.85 |
| 9 | Sweden..... | 44.37 | 80.20 | 69 | Uganda..... | 7.12 | 12.41 |
| 10 | Czech Republic..... | 43.88 | 79.31 | 70 | Zimbabwe..... | 7.10 | 12.37 |
| 11 | New Zealand..... | 43.62 | 78.84 | 71 | Algeria..... | 6.91 | 12.03 |
| 12 | Switzerland..... | 43.53 | 78.67 | 72 | Kenya..... | 6.83 | 11.88 |
| 13 | Israel..... | 41.44 | 74.87 | 73 | Gambia..... | 6.69 | 11.63 |
| 14 | United Kingdom..... | 38.75 | 69.97 | 74 | Nepal..... | 6.67 | 11.59 |
| 15 | Greece..... | 38.28 | 69.12 | 75 | Mexico..... | 6.53 | 11.34 |
| 16 | Netherlands..... | 37.57 | 67.83 | 76 | Ethiopia..... | 6.00 | 10.37 |
| 17 | Canada..... | 37.01 | 66.81 | 77 | Ghana..... | 5.44 | 9.35 |
| 18 | Estonia..... | 36.11 | 65.17 | 78 | Albania..... | 5.43 | 9.34 |
| 19 | Korea, Rep..... | 35.79 | 64.59 | 79 | Saudi Arabia..... | 4.99 | 8.54 |
| 20 | Spain..... | 34.76 | 62.71 | 80 | Mongolia..... | 4.62 | 7.86 |
| 21 | Belgium..... | 34.03 | 61.38 | 81 | Botswana..... | 4.42 | 7.50 |
| 22 | Tunisia..... | 33.83 | 61.02 | 82 | Rwanda..... | 4.33 | 7.33 |
| 23 | Iceland..... | 32.91 | 59.34 | 83 | Bangladesh..... | 4.24 | 7.17 |
| 24 | Slovakia..... | 31.10 | 56.05 | 84 | Mauritius..... | 4.22 | 7.13 |
| 25 | Ireland..... | 30.89 | 55.67 | 85 | Oman..... | 4.10 | 6.92 |
| 26 | Poland..... | 30.74 | 55.40 | 86 | Costa Rica..... | 3.88 | 6.52 |
| 27 | Italy..... | 30.73 | 55.38 | 87 | Viet Nam..... | 3.86 | 6.48 |
| 28 | Austria..... | 29.65 | 53.41 | 88 | Trinidad and Tobago..... | 3.48 | 5.79 |
| 29 | Cyprus..... | 29.58 | 53.28 | 89 | Bahrain..... | 3.38 | 5.61 |
| 30 | Norway..... | 28.74 | 51.76 | 90 | Sri Lanka..... | 3.22 | 5.31 |
| 31 | Romania..... | 28.27 | 50.90 | 91 | Madagascar..... | 3.14 | 5.17 |
| 32 | France..... | 28.03 | 50.46 | 92 | Tanzania, United Rep..... | 3.12 | 5.13 |
| 33 | Germany..... | 27.82 | 50.08 | 93 | Bhutan..... | 3.09 | 5.08 |
| 34 | Lithuania..... | 26.62 | 47.90 | 94 | Namibia..... | 3.07 | 5.04 |
| 35 | Hungary..... | 25.88 | 46.55 | 95 | Kuwait..... | 3.02 | 4.95 |
| 36 | Iran, Islamic Rep..... | 25.74 | 46.30 | 96 | Azerbaijan..... | 2.92 | 4.77 |
| 37 | Malaysia..... | 24.73 | 44.46 | 97 | United Arab Emirates..... | 2.88 | 4.70 |
| 38 | United States of America..... | 24.60 | 44.22 | 98 | Kyrgyzstan..... | 2.73 | 4.42 |
| 39 | Latvia..... | 24.59 | 44.20 | 99 | Qatar..... | 2.63 | 4.24 |
| 40 | Singapore..... | 24.38 | 43.82 | 100 | Mali..... | 2.23 | 3.51 |
| 41 | China..... | 24.24 | 43.57 | 101 | Kazakhstan..... | 2.20 | 3.46 |
| 42 | Japan..... | 22.10 | 39.67 | 102 | Venezuela, Bolivarian Rep..... | 2.15 | 3.37 |
| 43 | Bulgaria..... | 21.58 | 38.73 | 103 | Mozambique..... | 2.12 | 3.31 |
| 44 | Turkey..... | 20.89 | 37.47 | 104 | Panama..... | 2.00 | 3.09 |
| 45 | Armenia..... | 20.86 | 37.42 | 105 | Lao PDR..... | 1.90 | 2.91 |
| 46 | Jordan..... | 18.85 | 33.76 | 106 | Peru..... | 1.79 | 2.71 |
| 47 | Ukraine..... | 18.25 | 32.67 | 107 | Cambodia..... | 1.69 | 2.53 |
| 48 | Malta..... | 16.03 | 28.63 | 108 | Ecuador..... | 1.46 | 2.11 |
| 49 | Montenegro..... | 15.08 | 26.90 | 109 | Philippines..... | 1.42 | 2.04 |
| 50 | Brazil..... | 15.06 | 26.86 | 110 | Lesotho..... | 1.38 | 1.97 |
| 51 | Macedonia, FYR..... | 14.61 | 26.04 | 111 | Bolivia, Plurinational St..... | 1.29 | 1.80 |
| 52 | South Africa..... | 14.08 | 25.08 | 112 | Yemen..... | 1.27 | 1.77 |
| 53 | India..... | 13.75 | 24.48 | 113 | Indonesia..... | 1.16 | 1.57 |
| 54 | Chile..... | 13.57 | 24.15 | 114 | Paraguay..... | 1.04 | 1.35 |
| 55 | Luxembourg..... | 13.12 | 23.33 | 115 | Nicaragua..... | 0.89 | 1.07 |
| 56 | Georgia..... | 13.08 | 23.26 | 116 | Guatemala..... | 0.69 | 0.71 |
| 57 | Lebanon..... | 13.06 | 23.22 | 117 | El Salvador..... | 0.67 | 0.67 |
| 58 | Moldova, Rep..... | 11.12 | 19.69 | 118 | Honduras..... | 0.49 | 0.35 |
| 59 | Russian Federation..... | 10.98 | 19.44 | 119 | Dominican Republic..... | 0.30 | 0.00 |
| 60 | Bosnia and Herzegovina..... | 10.33 | 18.25 | | | | |

SOURCE: World Bank, World Development Indicators based on National Science Foundation, Science and Engineering Indicators, 2013; GDP data come from the International Monetary Fund, World Economic Outlook database, 2013

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 2006.

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 fifth 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 2017, an earlier version of the index model for the GTCI 2018 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 2017 based on the latest model, the results of which can be found in Chapter 7.

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 several variables (normally, between three and seven 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.

In addition to the overall index scores, economy rankings are provided for each variable, sub-pillar, pillar, and sub-index in the Country Profiles.

Individual Variables

The GTCI 2018 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 Organisation (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 database of the *Doing Business* report), the International Telecommunication Union (ITU), 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 Organisation), and the Environmental Performance Index (Yale University and Columbia University). There were two main concerns about using 'indices within an index': (1) doubts over its methodology to derive a single score; and (2) the risk of duplicating variables. Despite these concerns, the GTCI team determined that the gains outweighed the downsides, as there are certain phenomena that are best captured by a multi-dimensional index. To address these concerns, only indices that transparently indicate their methodology and are widely well received were included in the GTCI. Additionally, to avoid double-counting, only indices with a narrow focus were selected.

Survey Data

The 28 variables based on survey data were mainly extracted from the World Economic Forum's Executive Opinion Survey. Qualitative information tends to provide the most current assessment of certain areas related to talent competitiveness for which hard data either do not exist or have low country coverage.

Country/Economy Coverage and Missing Data

The 119 economies covered in the GTCI 2018 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 economy were considered in the calculation, with 2006 as the cut-off year. Meanwhile, each variable had to pass a country-based availability threshold of 50% (60 out of 119 economies). 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 six variables with outliers. 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:⁴

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

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:⁵

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

ENDNOTES

- 1 The JRC has audited various index projects. The most recent ones include the Global Innovation Index (Cornell, INSEAD and WIPO), the Environment Performance Index (Yale and Columbia), and the Corruption Perceptions Index (Transparency International).
- 2 The last edition of the GTCI had 65 variables in total, 25 of which were hard/quantitative data, 15 were index/composite indicators, and 25 were survey/qualitative data.
- 3 Adopted from Groeneveld & Meeden (1984).
- 4 The formula ensures that natural logarithms are positive and start at zero.
- 5 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.

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Appendix II

Sources and Definitions

Sources and Definitions

1 ENABLE

1.1 Regulatory Landscape

1.1.1 Government effectiveness

Government effectiveness indicator | 2015

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*, 2016 Update (www.govindicators.org)

1.1.2 Business-government relations

Average answer to the question: In your country, how would you best characterise 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 | 2015

The political stability and absence of violence indicator captures perceptions of the likelihood that the government will be destabilised or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism. Scores are standardised.

Source: World Bank, *Worldwide Governance Indicators*, 2016 Update (www.govindicators.org)

1.1.4 Regulatory quality

Regulatory quality indicator | 2015

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*, 2016 Update (www.govindicators.org)

1.1.5 Corruption

Corruption Perceptions Index | 2016

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 2016* (<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] | 2016

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 2015–2016 (<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 2017* report, which include starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting 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 2017: Equal Opportunity for All* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2017>)

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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

1.2.4 R&D expenditure

Gross expenditure on R&D (%) | 2014

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 | 2016

The ICT access index is a composite indicator that aggregates five ICT indicators (at 20% each): (1) Fixed telephone lines per 100 inhabitants; (2) Mobile cellular telephone subscriptions per 100 inhabitants; (3) International internet bandwidth (bit/s) per internet user; (4) Proportion of households with a computer; and (5) Proportion of households with internet access at home. It is the first sub-index in ITU's ICT Development Index (IDI).

Source: International Telecommunication Union, *Measuring the Information Society Report 2016*, ICT Development Index 2016 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2016.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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

1.3 Business and Labour Landscape

Labour Market

1.3.1 Ease of hiring

Hiring indicators | 2016

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 2016: Measuring Regulatory Quality and Efficiency* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2016>)

1.3.2 Ease of redundancy

Redundancy indicators | 2016

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 2016: Measuring Regulatory Quality and Efficiency* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2016>)

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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

1.3.4 Labour-employer cooperation

Average answer to the question: In your country, how would you characterise labour-employer relations? [1 = generally confrontational; 7 = generally cooperative] | 2016

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 2015–2016 (<http://reports.weforum.org>)

Management Practice

1.3.5 Professional management

Average answer to the question: In your country, who holds senior management positions? [1 = usually relatives or friends without regard to merit; 7 = mostly professional managers chosen for merit and qualifications] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

Attract People

2.1.3 Migrant stock

Adult migrant stock (%) | 2015

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, and is based on 2015 estimates.

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/estimates15.shtml)

2.1.4 International students

Tertiary inbound mobility ratio (%) | 2016

International student inflow 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: 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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

2.2 Internal Openness

Social Inclusion

2.2.1 Tolerance of minorities

Discrimination and violence against minorities | 2016

This indicator is a component of the tolerance and inclusion variables used to measure the Opportunity dimension of the Social Progress Index. It is based on the Group Grievance indicator designed by the Fund for Peace Fragile States 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 pressure) to 10 (very high pressure).

Source: Social Progress Imperative, The Social Progress Index 2016 (<http://www.socialprogressimperative.org/publication/2016-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? | 2016

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 2016 (<http://www.socialprogressimperative.org/publication/2016-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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

Gender Equality

2.2.4 Female graduates

Female tertiary graduates (%) | 2016

Female tertiary graduates refers to the percentage of female graduates whose highest educational attainment is the tertiary level. The tertiary level includes both short-cycle tertiary and bachelor's or equivalent level based on International Standard Classification of Education (ISCED) 5 or 6.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

2.2.5 Gender earnings gap

Estimated earned income ratio | 2016

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 2016* (<http://reports.weforum.org/global-gender-gap-report-2016>)

2.2.6 Leadership opportunities for women

Average answer to the question: In your country, to what extent do companies provide women the same opportunities as men to rise to positions of leadership? [1 = not at all; 7 = to a great extent] | 2016

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 2015–2016 (<http://reports.weforum.org>)

3 GROW

3.1 Formal Education

Enrolment

3.1.1 Vocational enrolment

Vocational enrolment (%) | 2015

Vocational enrolment refers to the total number of students enrolled in vocational programmes at a given level of education, expressed as a percentage of the total number of students enrolled in all programmes (vocational and general) at that level. The level of educational attainment is based on International Standard Classification of Education (ISCED) 2 and 3.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

3.1.2 Tertiary enrolment

Tertiary enrolment (%) | 2016

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 level of educational attainment is based on International Standard Classification of Education (ISCED) 5 and 6.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

Quality

3.1.3 Tertiary education expenditure

Government expenditure on tertiary education (%) | 2016

Government expenditure on tertiary education as a percentage of GDP.

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 three-yearly 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 | 2015

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 SciVerse Scopus (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 2014/2015, 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 following: Quality of business schools [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2016

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 2015–2016 (<http://reports.weforum.org>)

3.2.2 Prevalence of training in firms

Proportion of firms offering formal training (%) | 2016

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 2002, the World Bank has collected these data from face-to-face interviews with top managers and business owners in over 130,000 companies in 135 economies. More detailed information about the Enterprise Surveys can be found on their Methodology page.

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] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

3.3.2 Personal rights

Personal rights indicator | 2016

Personal Rights are a component in the Opportunity Dimension of the Social Progress Index. This component is based on five variables: Political rights, Freedom of speech, Freedom of assembly/association, Freedom of movement, and Private property rights.

Source: Social Progress Imperative, The Social Progress Index 2016 (<http://www.socialprogressimperative.org/publication/2016-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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

3.3.4 Use of virtual professional networks

LinkedIn users (per 1,000 labour force) | 2015

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] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<http://reports.weforum.org>)

4.2 Lifestyle

4.2.1 Environmental performance

Environmental Performance Index | 2015

The Environmental Performance Index (EPI) ranks how well countries perform in two broad policy areas: protection of human health from environmental harm and protection of ecosystems. 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 2016 Environmental Performance Index, Yale Center for Environmental Law and Policy (<http://epiyale.edu>)

4.2.2 Personal safety

Personal safety indicator | 2016

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 2016 (<http://www.socialprogressimperative.org/publication/2016-social-progress-index/>)

4.2.3 Physician density

Physicians (per 1,000 people) | 2015

Physician density refers to 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 (%) | 2015

This indicator refers to the percentage of the population using improved sanitation facilities. Improved sanitation facilities include flush/pour flush toilets (connected to a piped sewer system, septic tank, or pit latrine), ventilated improved pit latrines, pit latrines with a slab, and composting toilets.

Source: World Bank, World Development Indicators based on WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (<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 (%) | 2016

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) 3 or 4. The data for the United States of America are from workers aged above 25 years old.

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) 3 or 4.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

5.1.3 Technicians and associate professionals

Technicians and associate professionals (%) | 2016

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 (constant 2015 US\$) | 2017

Labour productivity estimates are obtained by dividing the total output (GDP) by the total labour input used (labour force) to produce that output. GDP is measured in constant 2015 US\$.

Source: The Conference Board, Total Economy Database™ (www.conference-board.org/data/economydatabase)

5.2 Employability

5.2.1 Base of finding skilled employees

Average answer to the question: In your country, to what extent can companies find people with the skills required to fill their vacancies? [1 = not at all; 7 = to a great extent] | 2016

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 2015–2016 (<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] | 2016

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Source: World Economic Forum, Executive Opinion Survey 2015–2016 (<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] | 2016

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 2015–2016 (<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] | 2016

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 2015–2016 (<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 (%) | 2016

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 includes both short-cycle tertiary and bachelor's or equivalent level based on International Standard Classification of Education (ISCED) 5 or 6. The data for the United States of America are from workers aged above 25 years old.

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 (%) | 2015

Population with tertiary education refers to the percentage of the population (above 25 years old) whose highest educational attainment is at the tertiary level. This is based on International Standard Classification of Education (ISCED) 5 or 6.

Source: UNESCO Institute for Statistics, *UIS.Stat* (<http://data.uis.unesco.org/>)

6.1.3 Professionals

Professionals (%) | 2016

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) | 2015

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 (%) | 2016

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 1988.

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] | 2016

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Source: World Economic Forum, Executive Opinion Survey 2015–2016 (<http://reports.weforum.org>)

6.2 Talent Impact

6.2.1 Innovation output

Innovation output sub-index | 2017

The Global Innovation Index (GII), developed jointly by INSEAD and the World Intellectual Property Organization, aims to capture the richness of innovation in society. Innovation output is one of the two sub-indices in the GI, which is derived by aggregating two output pillars: Knowledge and Technology Output and Creative Output. 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 2017* (<https://www.globalinnovationindex.org>)

6.2.2 High-value exports

High technology manufactures (%) | 2015

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 (%) | 2016

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. 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) | 2014

New business density is defined as the number of newly registered corporations per 1,000 working-age population (between 15 and 64 years old).

Source: World Bank, *Doing Business 2014: Understanding Regulations for Small and Medium-Size Enterprises* (<http://www.doingbusiness.org/reports/global-reports/doing-business-2014>)

6.2.5 Scientific journal articles

Number of scientific and technical journal articles (per million PPP\$ GDP) | 2013

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 million PPP\$ GDP.

Source: World Bank, World Development Indicators based on National Science Foundation, Science and Engineering Indicators, 2013; GDP data come from the International Monetary Fund, World Economic Outlook database, 2013

Appendix III

About the Contributors
and Partners

About the Contributors



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.

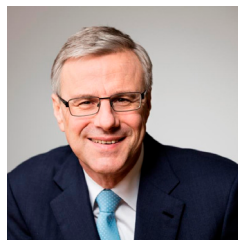
Dr Becker holds a PhD and an MEng in Mechanical Engineering from the University of Sheffield, UK.



Tracey Burns

Tracey Burns is a Senior Analyst in the OECD's Centre for Educational Research and Innovation (CERI). She heads a portfolio of projects: Innovative Teaching for Effective Learning, Innovative Pedagogies for Powerful Learning, 21st Century Children, and Trends Shaping Education. Dr Burns holds a Bachelor of Arts from McGill University, Canada, and a Master of Arts and Doctor of Philosophy in Psychology from Northeastern University, USA. She is the recipient of numerous awards and honours, including the University of British Columbia Post-Doctoral Fellowship and the American Psychological Association Dissertation Research Award. Prior to joining the OECD she worked on social determinants of health and well-being. As a Post-Doctoral Fellow at the University of British Columbia, Dr Burns led a research team investigating newborn infants' responses to language, and was an award-winning lecturer on infant and child development.

Dr Burns holds a Bachelor of Arts from McGill University, Canada, and a Master of Arts and Doctor of Philosophy in Psychology from Northeastern University, USA. She is the recipient of numerous awards and honours, including the University of British Columbia Post-Doctoral Fellowship and the American Psychological Association Dissertation Research Award. Prior to joining the OECD she worked on social determinants of health and well-being. As a Post-Doctoral Fellow at the University of British Columbia, Dr Burns led a research team investigating newborn infants' responses to language, and was an award-winning lecturer on infant and child development.



Alain Dehaze

Alain Dehaze is CEO of the Adecco Group, the world's leading workforce solutions partner. Through its international brands Adecco, Modis, Badenoch & Clark, Spring Professional, Lee Hecht Harrison, Pontoon, Adia, and YOSS, the Adecco Group is making the future work for everyone. As a Fortune Global 500 Company, the Adecco

Group connects 700,000 jobseekers with rewarding employment every day, helps 350,000 people yearly to transition to work, and supports more than 100,000 organisations with the talent, advice, and cutting-edge technology they need to succeed in an ever-changing and highly competitive global economy. With 33,000 full-time team members in 60 countries, the Adecco Group ranked 2nd on the 2017 World's Best Workplaces list, the only workforce solutions company in the top 25.

The 54-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.



Sylvia Ann Hewlett

Sylvia Ann Hewlett is an Economist and the Founder and CEO of the Center for Talent Innovation, where she chairs a private sector task force of more than 90 global companies focused on fully realising the new streams of talent in the global marketplace. She is the author of 14 *Harvard Business Review* articles, 13 critically acclaimed nonfiction books including *Winning the War for Talent in Emerging Markets*; *Forget a Mentor, Find a Sponsor* (named one of the best business books); and *Executive Presence* (an Amazon 'Best Book of the Month'). She has been recognised as the Most Influential International Thinker by *HR Magazine* and honoured by the European Diversity Awards with its Global Diversity Award. Dr Hewlett, who has taught at Columbia and Princeton Universities, earned her BA from Cambridge University and her PhD in Economics from London University.



Paul Evans

Paul Evans is the Academic Director of the Global Talent Competitiveness Index, Emeritus Professor of Organisational Behaviour at INSEAD, and the Shell Chair Professor of Human Resources and Organisational Development, Emeritus. His research and teaching focuses on three domains: (1) leadership and talent development, building on his pioneering research into executive lifestyles (*Must Success Cost So Much?*, translated into eight languages); (2) international human resource management, where his most recent book is *The Global Challenge: International Human Resource Management*; and (3) multinational organisational development. He has launched and directed many executive programmes at INSEAD and has taught courses as a visiting professor at universities in North America, Europe, Russia, Brazil, and China, winning awards for his teaching and research.

Dr Evans was titular professor at the European Institute for Advanced Studies in Management in Brussels in recognition for his work in building scholarly networks in human resources in Europe. He has a PhD in Management and Organisational Psychology from MIT, an MBA from INSEAD, and is a graduate in Law from Cambridge University. He has been chairman of INSEAD's Organisational Behaviour Area for successive periods, also heading Executive Education at INSEAD for two years. Dr Evans has been an advisor to 200 multinational organisations across the world, including in the public sector, has created numerous forums for top executive exchange, and is a frequent speaker at international conferences and conventions.

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Vinod Kumar

Vinod Kumar is the Chief Executive Officer and Managing Director of Tata Communications, part of the \$100.39 billion Tata Group. He joined Tata Communications in April 2004, just as the company was embarking on its journey of international growth, and has been at the forefront of Tata Communications' transformation

from a traditional connectivity services provider, largely based in India, to a truly global services provider, offering a broad range of managed communication and collaboration services as well as IT infrastructure 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.

Mr Kumar graduated with honours in Electrical and Electronic Engineering from the Birla Institute of Technology and Science in India and currently lives in Singapore.



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 Talent Competitiveness 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).



Ripa Rashid

Ripa Rashid is Managing Partner at Hewlett Consulting Partners and Co-President at the Center for Talent Innovation, specialising in global talent strategies. She spent over a decade as a management consultant with leading global firms, including Booz & Company (now Strategy&), PwC, and Mitchell Madison Group,

and held senior positions at MetLife and Time Warner. Co-author of *Winning the War for Talent in Emerging Markets: Why Women Are the Solution* (Harvard Business Review Press, 2011); *Asians in America: Unleashing the Potential of the 'Model Minority'*; the book *Growing Global Executives: The New Competencies* (Center for Talent Innovation, 2015); and *Disrupt Bias, Drive Value* (Center for Talent Innovation, 2017) as well as numerous reports and whitepapers, she has been featured by Fox News, Bloomberg, *Newsweek*, *The Times of India*, *Hindustan Times*, the *South China Morning Post*, and China Radio International, among other international media. Ms Rashid has lived and worked in North America, Europe, Asia, and South America, and speaks four languages. She earned an AB cum laude in Astronomy and Astrophysics from Harvard University, an MA in Anthropology from New York University, and an MBA from INSEAD.



Eduardo Rodriguez-Montemayor

Eduardo Rodriguez-Montemayor is part of the Economics Department at INSEAD and Lead Researcher of the Global Talent Competitiveness Index. He leads, in partnership with global companies and policymakers, the intellectual approach and execution of projects related to economic policy, labour and organisational

economics, and innovation/technology. He consults for the OECD, the United Nations Environment Programme, and the Inter-American Development Bank (working at the headquarters in Washington, DC) and has been actively involved in the European Commission's Digital Agenda Assembly.

Dr Rodriguez-Montemayor previously worked in the Mexican financial sector for the Pensions Commission, CONSAR (a regulatory body), and for the Inter-American Conference of Social Security.

He holds a PhD in Economics from the University of York in the United Kingdom and also obtained an MSc in Economics and Management from the University Pompeu Fabra in Spain and a degree in Economics from the Universidad Autonoma de Nuevo Leon in Mexico.



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.



Laura Sherbin

Laura Sherbin is Co-President at the Center for Talent Innovation and Managing Partner at Hewlett Consulting Partners. She is an economist specialising in the creation of competitive advantage through inclusion and diversity. She taught 'Women and Globalization' at the School of International and Public Affairs at Columbia

University, and is a co-author of *Harvard Business Review* articles 'How Diversity Can Drive Innovation'; 'How Gen Y and Boomers Will Reshape Your Agenda'; 'Off-Ramps and On-Ramps Revisited', and *Harvard Business Manager* article 'Letzte Ausfahrt Babypause' as well as *Harvard Business Review* Research Reports *The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology* and *The Sponsor Effect: Breaking Through the Last Glass Ceiling*, and CTI reports including *Executive Presence; Latinos at Work: Unleashing the Power of Culture*; and, most recently, *Disrupt Bias, Drive Value*. She is a graduate of the University of Delaware and earned her PhD in Economics from American University.



Dirk Van Damme

Dirk Van Damme is Head of Division in the Directorate for Education and Skills at the OECD in Paris. He holds a PhD in Educational Sciences from Ghent University and is also Professor of Educational Sciences in the same university (since 1995). In his academic career he was also part-time Professor in Comparative Education at the Free

University of Brussels (1997–2000) and Visiting Professor of Comparative Education at Seton Hall University, New Jersey, USA (2001–08). His main academic work has focused on the history of education, comparative education, lifelong learning, and international higher education. He has also served in various positions in the field of education policy in the Flemish part of Belgium, among others as General Director of the Flemish Rectors' Conference, and as Deputy and Chief of Staff of various Flemish education ministers. He was responsible for developing and implementing policies focusing on equality of opportunity in education and the implementation of the Bologna Declaration in Belgium. His current interests are evidence-based innovation in education, comparative analyses of educational systems, open education, and quality issues in higher education. At the OECD he is responsible for the Skills Beyond School (SBS) division, covering work on skills, adult learning, vocational education, and higher education. He is also the Directorate's focal point for the OECD's Inclusive Growth Initiative.

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