IMD
World Digital Competitiveness Ranking 2025

Reconfiguring digital strategies amid trade fragmentation

IMD / World Competitiveness Center

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IMD World Digital
Competitiveness Ranking 2025

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Preface

The IMD World Competitiveness Center has long played a role in improving nations' abilities to generate sustainable value and improve the quality of life for its citizens, through in-depth data and analysis.

In 2017, we bolstered our ability to do this by creating a digital ranking. That year, blockchain technology was sparking great interest, and voice assistants like Alexa, Siri, and Google Assistant were starting to bring AI technology into the home and workplace. Fast forward eight years, and the digital economy now accounts for 15% of world GDP, with AI integrated at scale into healthcare, finance, education, and manufacturing.

The digital economy might not seem dependent on traditional trade flows due to its intangibility. But this year's ranking finds that trade wars are affecting it – and in turn dictating digital competitiveness at both national and firm levels. In addition, the 2025 ranking takes a microscopic lens to industry trends in today's digital geopolitical sphere, using data from the IMD Executive Opinion Survey. Readers can therefore not only understand their country's mechanisms, but those of their sector on a global level.

Global trade fragmentation is affecting the digital competitiveness of nations in three main ways: firstly, it's creating winners and losers in digital infrastructure (the winners have been investing more in recent years than others, building a better framework, say, for telecoms, internet, or the application of technologies, enabling domestic reliance).

Secondly, while talent remains mobile, people are not entering certain countries in the same numbers due to geopolitical instability. This affects digital competitiveness when domestic policies and regional instability combust into a situation where more talent is leaving the country than entering it. Several of the economies we assess are victims of this and have fallen in our rankings, as my colleagues' analysis will expose.

Thirdly, in a fragmented world, regulatory advantages are becoming a key determinant of digital competitiveness. Regulatory clarification and safety enable companies and governments to incorporate the technology available as efficiently and effectively as possible. We have the EU, the US, and Southeast Asia recognizing this with certain regulatory improvements.

This year, we've added data on AI-related patent publications (from the WIPO Statistics Database) and on annual private investment in artificial intelligence (from Quid, via the Stanford AI Index Report). Namibia, Kenya, and Oman are welcome newcomers.

Our thanks go to our partner institutes for their continued commitment to facilitating this publication, and especially their support in disseminating our survey and supporting our statistical data collection, enabling us to ensure accuracy and local relevance.

Arturo Bris
Director
IMD World Competitiveness Center

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Profiles

The IMD World Competitiveness Center

For more than thirty-five years, the IMD World Competitiveness Center has pioneered research on how countries and companies compete to lay the foundations for sustainable value creation. The competitiveness of nations is probably one of the most significant developments in modern management and IMD is committed to leading the field. The World Competitiveness Center conducts its mission in cooperation with a network of 73 Partner Institutes in 60 countries to provide the government, business and academic communities with the following services:

- Competitiveness Special Reports
- Competitiveness Prognostic Reports
- Workshops/Mega Dives on competitiveness
- IMD World Competitiveness Yearbook
- IMD World Digital Competitiveness Ranking
- IMD World Talent Ranking
- Hinrich-IMD Sustainable Trade Index
- Smart City Index

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We also have the privilege of collaborating with a unique network of Partner Institutes, and other organizations, which guarantees the relevance of the data gathered.

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Partner Institutes

We would like to express our deep appreciation for the contribution of our Partner Institutes, enabling an extensive coverage of competitiveness in their home countries. The following Institutes and people supplied data from national sources and helped distribute the survey questionnaires:

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User guide

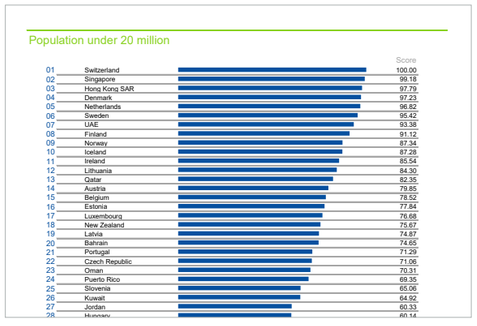
User Guide for the IMD World Digital Competitiveness Ranking

Overall and Breakdown: Digital Rankings

The IMD World Digital Competitiveness Ranking

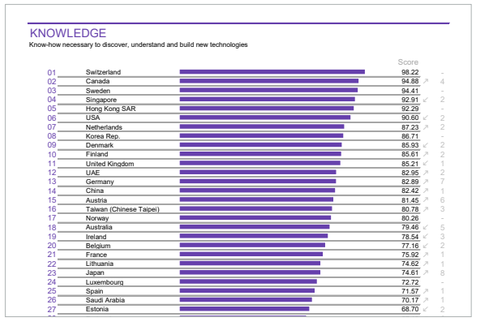
The IMD World Digital Competitiveness Ranking presents the 2025 overall rankings for the 69 economies covered by the WCY. The rankings are calculated on the basis of the 61 ranked criteria: 40 hard and 21 survey data. The countries are ranked from the most to the least digital competitive. The final column shows the improvement or decline from the previous year. The index value or "score" is also indicated for each country.

Selected breakdowns of the IMD World Digital Competitiveness Ranking



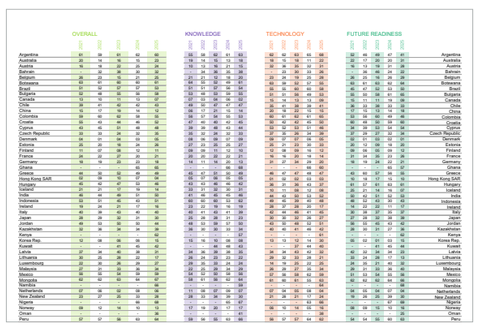
In addition to global digital rankings, other rankings are provided to show comparisons based on different perspectives. These digital rankings include countries split by population size (populations above and below 20 million), by GDP per capita to reflect different peer groups (above and below $20,000) and three regional rankings drawn from different geographical areas (Europe-Middle East-Africa, Asia-Pacific and the Americas).

Digital Competitiveness Factor Rankings



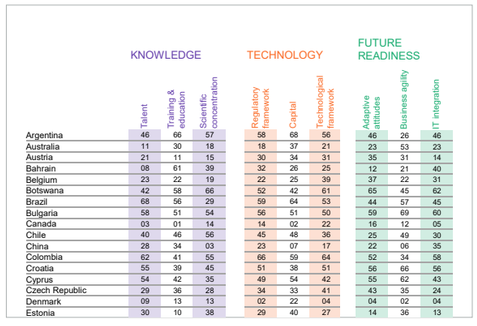
The global rankings for each of the Digital Competitiveness Factors are then shown as individual ranking tables. Again, the economies are ranked from the most to the least digital competitive and the previous year's rankings (2024) are shown in brackets. Similar to the Overall Digital Ranking, the values or "scores" are indicated for each Factor. However, there is only one economy that has a score of 100 and one economy with a score of 0 across all four Factors.

Overall Ranking and Digital Competitiveness Factors



This section presents the overall rankings and the 5-year trends for each of the three Digital Competitiveness Factors: Knowledge, Technology and Future Readiness. Thus, the reader is able to analyze the digital evolution of an economy over the past few years relative to the others on a global basis.

Digital Sub-factor Rankings



A summary of the rankings for all nine sub-factors is presented for the 69 economies for 2025. It is possible, at a glance, to determine in what areas of digital competitiveness an economy excels or has particular weaknesses and to make comparisons between countries. These rankings provide a more detailed examination of specific aspects of the digital transformation and can be used to, for example, evaluate the technological framework of a country or support international investment decisions.

We view the rankings as a tool for managers or policy makers to use when they analyze the above questions. Of course, each company must take into consideration the logic of its own economic sector, economic forecasts and its own traditions as well as governments should consider the national identity and value system of their economy.

Digital Competitiveness Country Profiles

Each two-page profile analyses the performance of one of the 69 economies that are included in the IMD World Digital Competitiveness Ranking. The economies are presented in alphabetical order. The term economy signifies an economic entity and does not imply any political independence.

It is possible, in one glimpse, to evaluate the digital evolution of each economy over time and its relative strengths and weaknesses. However, each economy's particular situation is influenced by its development level, political restraints and social value system.

Page 1: Digital Competitiveness – Overall and factors trends

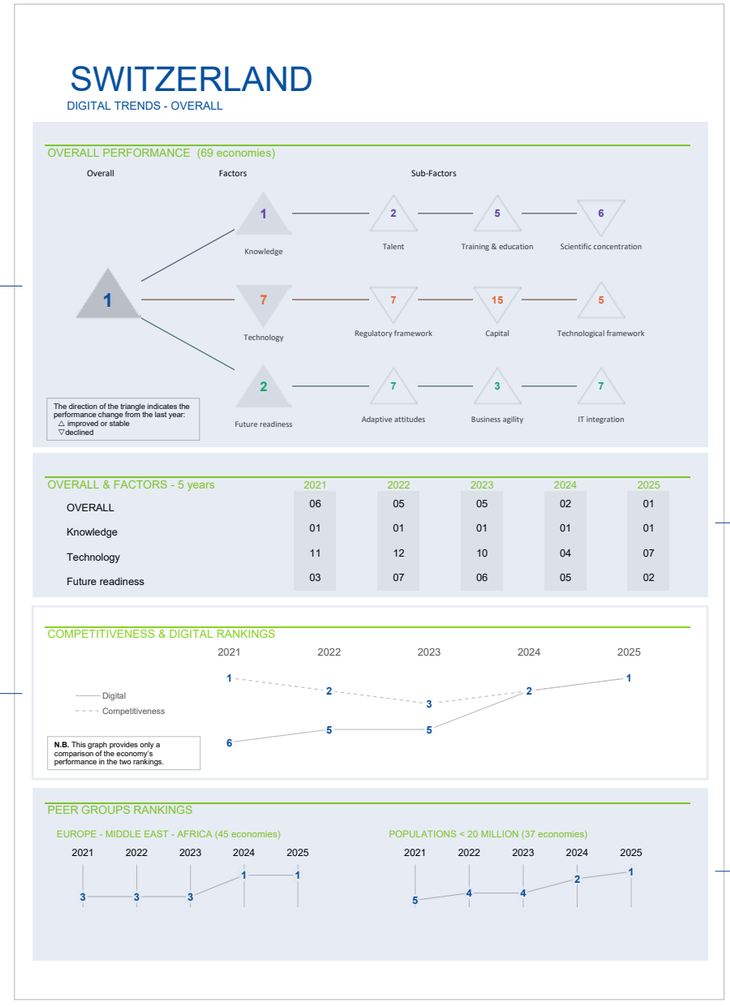
This page shows the overall, factor and sub-factor ranking performances of the country in 2025, their 5-year trends and a comparison between competitiveness and digital competitiveness rankings. The following indicators are presented:

1. Overall Performance
Overall, factors and sub-factors digital ranking performances of the country in 2025. The direction of the triangles indicates whether there has been an improvement or a decline with respect to the previous year.

2. Overall & Factors – 5 years
The evolution of the overall and factors digital rankings in the past 5 years.

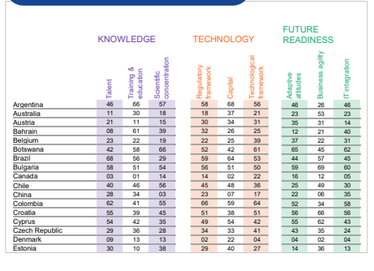
3. Competitiveness and Digital Rankings
Comparison of the country' performances in the World Competitiveness Ranking and World Digital Competitiveness Ranking in the last 5 years.

4. Peer Group Rankings
Based on geographical region and population size.

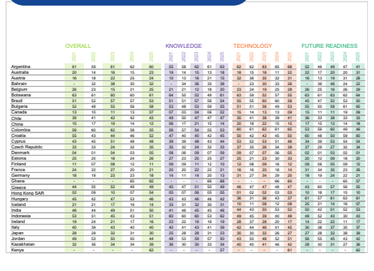


Digital Competitiveness Country Profile — Page 1

1 Overall Performance



2 Overall & Factors



4 Peer Group Rankings

Digital Competitiveness Country Profiles

Page 2: Factors breakdown & Strengths and Weaknesses

This page shows the country's performance over time for each of the nine sub-factors composing the three Digital Competitiveness Factors (Knowledge, Technology and Future Readiness) and their 61 criteria rankings for 2025.

1. Factors Breakdown
Shows the 5-years evolution of the sub-factors rankings composing the three factors of Knowledge, Technology and Future Readiness.

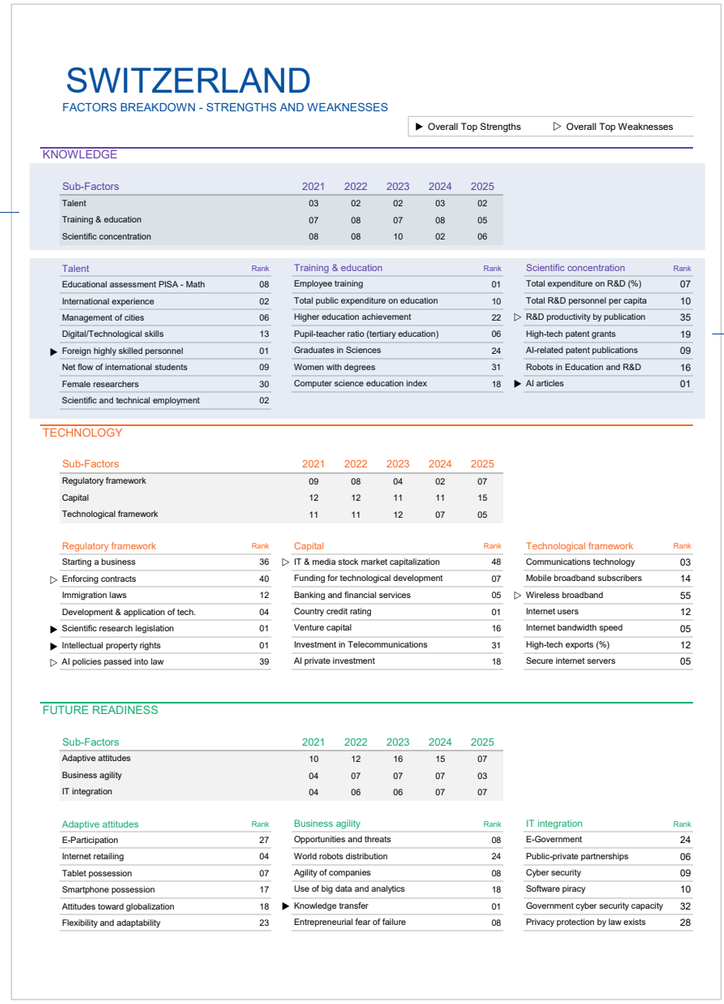
2. Strengths and Weaknesses
This section highlights the economy's strongest and weakest criteria included in the World Digital Competitiveness Ranking. The triangles identify the five top criteria in which the economy ranks best (strengths ▶) and the five criteria in which its performance is the worst (weaknesses ▷) compared to the other countries included in the WCY sample. The selection of indicators is determined by the standard deviation values (STD) of the country for that specific criteria. In other words, the criteria selected represent the highest STD values and the lowest STD values among the 61 indicators composing the World Digital Competitiveness Ranking and can thus be considered the digital competitive advantages and disadvantages of the economy.

The full criteria names can be found in the Appendix and the statistical tables are available for subscribers of the IMD World Competitiveness Online ↗

It is important to note that what constitutes a strength or weakness is relative to each economy's circumstances or development. Also, the ranking position of a country may not necessarily improve or decline as a consequence of its own evolution since it is always relative to the performance of the other economies. Therefore, an improvement may not be reflected by a higher ranking position if other economies have performed better for the criterion in question. The same can be said for any declines in performance – the economy's ranking position relative to the others may or may not fall, depending on how the other economies have performed.

1

2



SWITZERLAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	03	02	02	03	02
Training & education	07	08	07	08	05
Scientific concentration	08	08	10	02	06

Talent	Rank
Educational assessment PISA - Math	08
International experience	02
Management of cities	06
Digital/Technological skills	13
▶ Foreign highly skilled personnel	01
Net flow of international students	09
Female researchers	30
Scientific and technical employment	02

Training & education	Rank
Employee training	01
Total public expenditure on education	10
Higher education achievement	22
Pupil-teacher ratio (tertiary education)	06
Graduates in Sciences	24
Women with degrees	31
Computer science education index	18

Scientific concentration	Rank
Total expenditure on R&D (%)	07
Total R&D personnel per capita	10
▷ R&D productivity by publication	35
High-tech patent grants	19
AI-related patent publications	09
Robots in Education and R&D	16
▶ AI articles	01

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	09	08	04	02	07
Capital	12	12	11	11	15
Technological framework	11	11	12	07	05

Regulatory framework	Rank
Starting a business	36
▷ Enforcing contracts	40
Immigration laws	12
Development & application of tech.	04
▶ Scientific research legislation	01
▶ Intellectual property rights	01
▷ AI policies passed into law	39

Capital	Rank
▷ IT & media stock market capitalization	48
Funding for technological development	07
Banking and financial services	05
Country credit rating	01
Venture capital	16
Investment in Telecommunications	31
AI private investment	18

Technological framework	Rank
Communications technology	03
Mobile broadband subscribers	14
▷ Wireless broadband	55
Internet users	12
Internet bandwidth speed	05
High-tech exports (%)	12
Secure internet servers	05

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	10	12	16	15	07
Business agility	04	07	07	07	03
IT integration	04	06	06	07	07

Adaptive attitudes	Rank
E-Participation	27
Internet retailing	04
Tablet possession	07
Smartphone possession	17
Attitudes toward globalization	18
Flexibility and adaptability	23

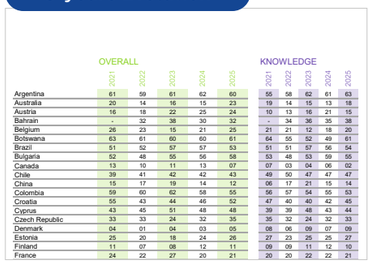
Business agility	Rank
Opportunities and threats	08
World robots distribution	24
Agility of companies	08
Use of big data and analytics	18
▶ Knowledge transfer	01
Entrepreneurial fear of failure	08

IT integration	Rank
E-Government	24
Public-private partnerships	06
Cyber security	09
Software piracy	10
Government cyber security capacity	32
Privacy protection by law exists	28

Digital Competitiveness Country Profile — Page 2

1 Factors Breakdown

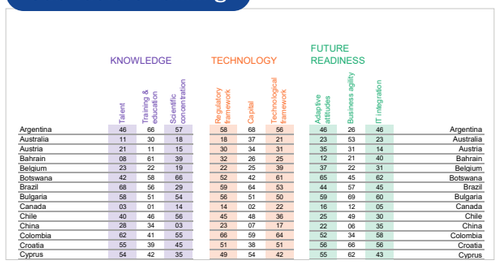
5-years Evolution



	OVERALL					KNOWLEDGE				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
Argentina	61	59	61	62	60	55	58	62	61	63
Australia	20	14	16	15	23	19	14	15	13	18
Austria	16	18	22	25	24	10	13	16	21	15
Bahrain	-	32	38	30	32	-	34	36	35	38
Belgium	26	23	15	21	25	21	21	12	18	20
Botswana	63	61	60	60	61	64	55	52	49	61
Brazil	51	52	57	57	53	51	51	57	56	54
Bulgaria	52	48	55	56	58	53	48	53	59	55
Canada	13	10	11	13	07	07	03	04	06	02
Chile	39	41	42	42	43	49	50	47	47	47
China	15	17	19	14	12	06	17	21	15	14
Colombia	59	60	62	58	55	56	57	54	55	53
Croatia	55	43	44	46	52	47	40	40	42	45
Cyprus	43	45	51	48	48	39	39	48	43	44
Czech Republic	33	33	24	32	35	35	32	24	32	33
Denmark	04	01	04	03	05	08	06	09	07	09
Estonia	25	20	18	24	26	27	23	25	25	27
Finland	11	07	08	12	11	09	09	11	12	10
France	24	22	27	20	21	20	20	22	22	21

2 Strengths and Weaknesses

Sub-factors Ranking



	KNOWLEDGE			TECHNOLOGY			FUTURE READINESS			
	Talent	Training & education	Scientific concentration	Regulatory framework	Capital	Technological framework	Adaptive attitudes	Business agility	IT integration	
Argentina	46	66	57	58	68	56	46	26	46	Argentina
Australia	11	30	18	18	37	21	23	53	23	Australia
Austria	21	11	15	30	34	31	35	31	14	Austria
Bahrain	08	61	39	32	26	25	12	21	40	Bahrain
Belgium	23	22	19	22	25	39	37	22	31	Belgium
Botswana	42	58	66	52	42	61	65	45	62	Botswana
Brazil	68	56	29	59	64	53	44	57	45	Brazil
Bulgaria	58	51	54	56	51	50	59	69	60	Bulgaria
Canada	03	01	14	14	02	22	16	12	05	Canada
Chile	40	46	56	45	48	36	25	49	30	Chile
China	28	34	03	23	07	17	22	06	35	China
Colombia	62	41	55	66	59	64	52	34	58	Colombia
Croatia	55	39	45	51	38	51	56	66	56	Croatia
Cyprus	54	42	35	49	54	42	55	62	43	Cyprus

Appendices

Appendix 1: Composition of sub-regions and regions

Western Europe	Austria	Italy	Europe, Middle East & Africa
	Belgium	Luxemburg	
	Cyprus	Netherlands	
	Denmark	Norway	
	Finland	Portugal	
	France	Spain	
	Germany	Sweden	
	Greece	Switzerland	
	Iceland	United Kingdom	
	Ireland		
Eastern Europe	Bulgaria	Lithuania	
	Czech Republic	Poland	
	Estonia	Romania	
	Croatia	Slovenia	
	Hungary	Slovak Republic	
	Latvia		
Western Asia & Africa	Bahrain	Nigeria	
	Botswana	Oman	
	Ghana	Qatar	
	Jordan	Saudi Arabia	
	Kenya	South Africa	
	Kuwait	Türkiye	
	Namibia	UAE	

Ex-CIS & Central Asia	Kazakhstan		Asia & Pacific
	Mongolia		
Eastern Asia	China	Korea Republic	
	Hong Kong SAR	Taiwan (Chinese Taipei)	
	Japan		
Southern Asia & The Pacific	Australia	New Zealand	
	India	Philippines	
	Indonesia	Singapore	
	Malaysia	Thailand	
North America	Canada	Puerto Rico	The Americas
	Mexico	USA	
South America	Argentina	Colombia	
	Brazil	Peru	
	Chile	Venezuela	

Analysis

Reconfiguring digital strategies amid trade fragmentation
National and firm-level challenges

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IMD World Competitiveness Center

The current world (dis)order is characterized by escalating geopolitical rivalries, contested trade norms, and fragmented institutional frameworks, which are together shaping all aspects of economic life and having particularly deep effects on firms operating across borders. Trade conflicts were once thought to be confined to disputes over tariffs or quotas, but are now clearly extending deep into the intangible roots of the digital economy: intellectual property, data flows, technical standards, and strategic technologies.

As a result, the competitiveness environment in which firms operate is no longer defined solely by market forces or innovation capabilities, but increasingly by the volatility of trade relations and the growing differences among countries and regions in the ways they regulate, develop, and adopt technology. In such a context, digital strategy is far from protected from external disruptions. Moreover, it is structurally embedded within such disruptions.

Access to technology and overseas markets, as well as research collaboration and international talent mobility, have become subject to a complex web of bilateral restrictions, retaliatory policies, and non-tariff barriers. This new level of institutional fragmentation erodes the predictability on which digital competitiveness has historically relied. Firms, particularly those embedded in global value chains or reliant on platform interoperability, face major strategic consequences. Their digital ambitions are now filtered through questions of geopolitical alignment, jurisdictional compliance, and technological self-sufficiency.

Moreover, the ripple effects extend beyond technology-intensive sectors. Even service-oriented firms must contend with localization demands (e.g., digital platforms built or hosted locally), dual-use restrictions (e.g., export controls on technologies with commercial and potential military use), and uncertainty in international standards recognition. In short, the ongoing disintegration of the global economic order is not a background variable, but a hindrance to strategic viability.

As firms evaluate their digital strategies amid mounting trade tensions, the boundaries between economic planning and geopolitical risk management continue to blur. Understanding this multi-domain disruption is essential for analyzing how digital competitiveness is redefined in the current international economy. Not through efficiency and scale alone, rather, through resilience, adaptability, and institutional effectiveness across an increasingly contested global context.

With this scenario in mind, we assess in greater detail the impact of several strategic domains on digital strategy and how trade tensions are affecting them. These domains include market access and expansion, access to technology, regulatory environment, innovation and R&D, and talent acquisition and retention. The analysis of each domain is two-fold. First, we examine their fundamental role in digital strategy. Second, we present highlights of national rankings, regional patterns, and sectoral dynamics relevant to each domain. Such an assessment of the impact of trade fragmentation is based on evidence drawn from the perspectives of business leaders who participated in IMD's Executive Opinion Survey.

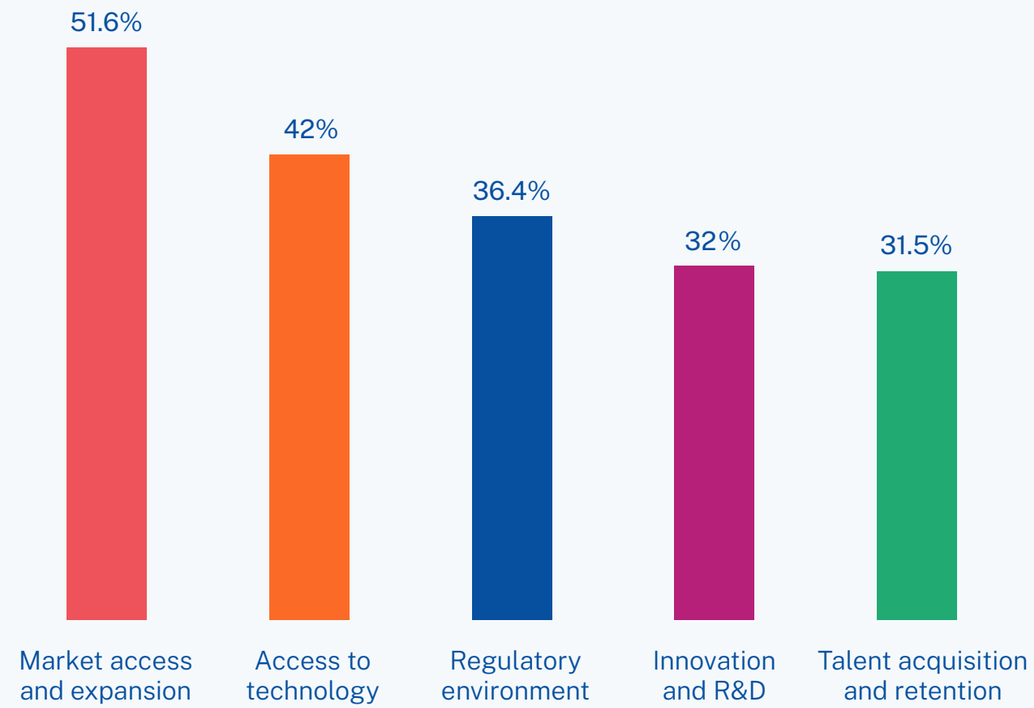
Indeed, a core part of the data forming the results of the IMD Digital Competitiveness Ranking comes from the survey responses from 6,162 senior executives in 69 countries. By focusing on a specific section of this survey, we can delve deeper into how trade conflict is affecting the five strategic domains of digital strategy at the firm level.

The survey asked respondents: "In which areas do international trade conflicts have the most impact on the digital strategy of your organization?" They could choose any number of the following answers: market access and expansion, access to technology, the regulatory environment, innovation and R&D, and talent acquisition and retention.

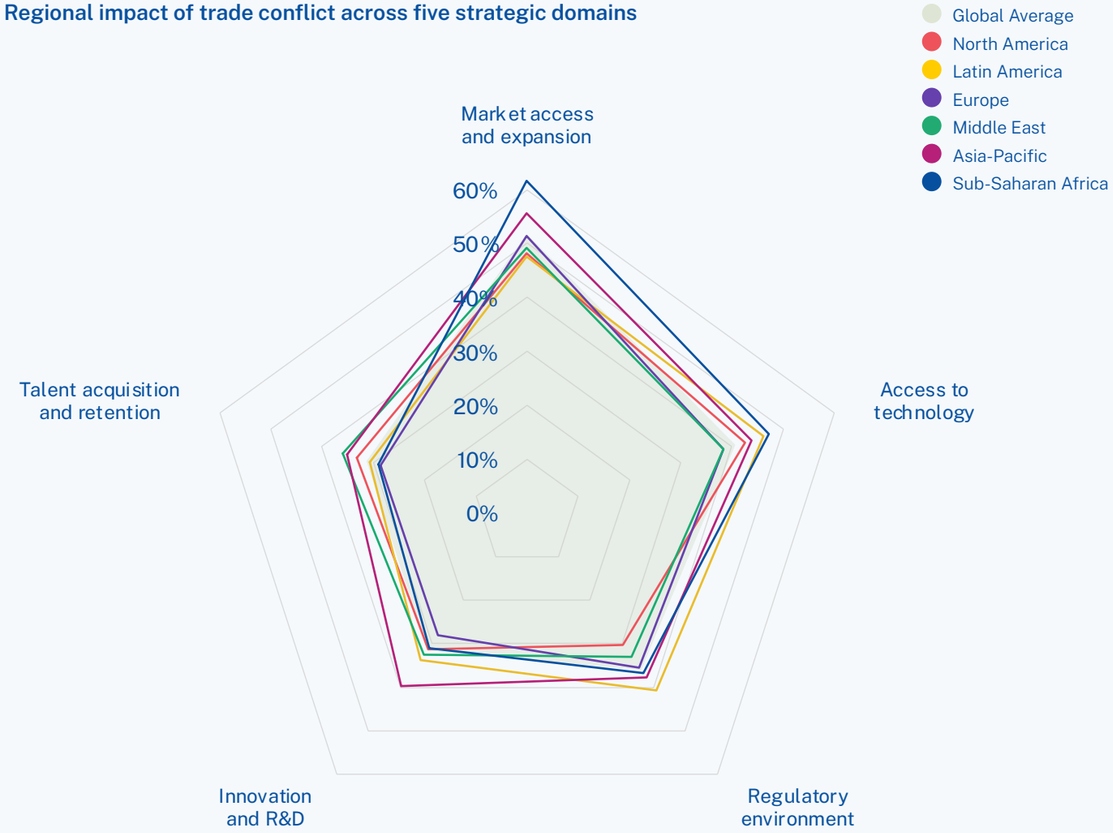
The results are different on a country level but globally consistent.

The results indicate that the disruption firms are facing due to trade conflict is multi-dimensional. While market access and expansion, and access to technology emerge as the most widely cited areas of concern, regulatory fragmentation, innovation and R&D constraints, and talent shortages are widely reported (see Figure 1). Highly impacted countries, meaning countries where executives voted the most for any one of the five domains, include both advanced and emerging economies. This suggests that exposure to cross-border digital flows, and not income level, is the primary determinant of strategic vulnerability to trade fragmentation.

Figure 1: Impact of trade conflicts across strategic domains (percentage of executives reporting five separate effects)



Box 1: Regional impact of trade conflict across five strategic domains



Below, we analyze each domain comparatively and highlight national rankings, regional patterns, and sectoral dynamics. The findings show that trade conflict is now a structural feature of the global economy. It can shape where, how, and with whom digital strategies can be executed.

1. Market access and expansion

Market access stands out as the domain most directly and immediately affected by trade conflicts. While traditionally associated with tariffs and border logistics, market access in the digital economy encompasses a wider and more complex set of institutional conditions. These include access to digital platforms, cloud infrastructure, foreign client bases, and interoperable data ecosystems. Firms pursuing digital expansion strategies rely not only on the ability to deliver services across borders but also on predictable access to regulatory environments that support secure, scalable, and lawful engagement with international customers.

Evidence highlights the outsized impact of trade-induced constraints on market access. Small and medium-sized enterprises (SMEs), for instance, engaged in digital exports, experience revenue declines of up to 20% when faced with delays, licensing restrictions, or compliance bottlenecks associated with trade conflict.[1] This pattern is corroborated by countries experiencing digital trade restrictions, which see significantly reduced digital service exports and slower technological adoption.[2] Furthermore, access barriers disproportionately affect firms that lack the legal or administrative capacity to navigate fragmented trade regimes, particularly those in emerging markets. Such constraints operate through a range of formal and informal channels. Regulatory asymmetries like mandatory data localization, inconsistent licensing frameworks, and cross-border taxation undermine the ability of firms to operate seamlessly across jurisdictions.[3]

These policies convert scale-driven digital services into geographically isolated operations. The latter requires duplicated infrastructure, specialized compliance teams, or the abandonment of certain markets altogether. Even when firms are technically capable of cross-border operations, the reputational and legal risks introduced by trade-based retaliation can deter investment or hinder market-entry strategies.

1 Freund, C., Mattoo, A., Mulabdic, A., & Ruta, M. (2024). Is US trade policy reshaping global supply chains?. Journal of International Economics, 152, 104011.
2 Ferracane, M. F., Lee-Makiyama, H., & Van Der Marel, E. (2018). Digital trade restrictiveness index. European Center for International Political Economy, 5.
3 Ferracane, M. F., Kren, J., & Van Der Marel, E. (2020). Do data policy restrictions impact the productivity performance of firms and industries?. Review of International Economics, 28(3), 676-722.

What do executives say?

Among the five strategic domains evaluated in our Executive Opinion Survey, market access emerges as the most frequently affected by international trade conflicts. A total of 51.63% of survey participants report that trade tensions have negatively influenced their firm's ability to enter, operate in, or expand across international markets. This finding, in turn, underscores the heightened vulnerability of cross-border commercial engagement in an era of growing institutional fragmentation, retaliatory trade measures, and technopolitical segmentation. Market access in the digital economy encompasses access to cloud platforms, cross-jurisdictional licensing, regulatory interoperability, and data mobility. All of these dimensions are increasingly subject to policy volatility. Firms pursuing digital internationalization rely on predictable access to digital infrastructure, stable digital services taxation frameworks, and legal assurance for remote service delivery. Trade conflict compromises these foundations by introducing abrupt changes in legal exposure, compliance cost, and reputational risk.

The countries reporting the most severe market access constraints provide key insights into how this disruption plays out in different economic contexts. Jordan ranks first globally, with 79.21% of executives citing trade-induced obstacles to market access. Kenya follows at 72.22%, Lithuania (70%), Latvia (69.05%), and Bulgaria (65.22%) complete the top five. Despite wide variation in income levels and digital sector maturity, these countries share common features. They have outward-oriented digital services sectors, limited domestic markets, and reliance on platform interoperability or transnational regulatory access.

Jordan and Kenya exemplify the challenges faced by smaller, outward-oriented digital economies navigating multiple regulatory regimes.[4] Jordanian firms in fintech, business process outsourcing (BPO), and software as a service (SaaS) operate across the Middle East, Europe, and North America, but face mounting barriers from divergent cybersecurity standards, digital tax rules, and platform-specific sanctions. Similarly, Kenya's role as East Africa's digital hub is constrained by cross-border frictions such as content hosting mandates, internet taxation, and conflicting consumer protection laws. Emerging data nationalism policies further fragment regional markets, turning previously dynamic digital service flows into isolated national systems.[5] In Europe, Lithuania, Latvia, and Bulgaria illustrate how smaller EU members with active tech export sectors remain vulnerable to external trade frictions. Though integrated into the EU digital market, their reliance on clients in the UK, the US, and Asia exposes them to post-Brexit divergence, GDPR debates, and transatlantic disputes. These elements raise compliance costs, legal uncertainty, and the need for duplicative infrastructure.

Other Asian and African countries also report substantial market access disruptions. Indonesia (63.93%) ranks sixth globally, reflecting the country's increasing digital export orientation. Indonesian firms face constraints from both China-US platform divisions and data flow friction with key ASEAN trading partners. Botswana (63.08%) and South Africa (62.30%) also appear in the top ten. The latter indicates that even in regions with lower aggregate digital trade volumes, firms are feeling the impact of shifting access conditions, such as those related to cloud services, authentication protocols, and transnational payments. Additionally, Taiwan (Chinese Taipei, 64.66%) and Denmark (63.46%) offer cases of advanced economies facing unique access challenges. On the one hand, Taiwan's strategic alignment with US technology architecture exposes its firms to exclusion from certain Chinese platforms and standards while also making them collateral targets in retaliatory trade responses. On the other hand, Denmark's high score is notable given its strong digital governance record and EU integration. The likely drivers include stricter enforcement of EU digital services rules and uncertainty regarding access to non-EU digital markets amid increasing regulatory fragmentation.

What emerges across these examples is a clear pattern. The loss of market access is not necessarily due to declining competitiveness or lack of innovation, but to rising uncertainty in the legal, technological, and political conditions that govern international digital transactions. Firms are often caught between conflicting regimes such as the US cloud export compliance, Chinese platform restrictions, and EU data localization, and must make difficult strategic decisions about jurisdictional alignment.

4 World Bank, & World Trade Organization. (2023). Digital trade for development. Washington, DC: World Bank; Geneva: World Trade Organization. https://openknowledge.worldbank.org/handle/10986/40454
5 Del Giovane, C., Ferencz, J. & López-González, J. (2023). Nature, evolution and potential implications of data localisation measures (OECD Trade Policy Papers No. 278). OECD Publishing.

2. Access to technology

Access to enabling technologies, including hardware, software, digital platforms, and specialized components, is essential for digital competitiveness. While innovation drives the creation of new capabilities, access to technology determines a firm's ability to adopt, scale, and operationalize those innovations.

Trade policy plays a critical role in this access. When trade is open, it facilitates the global diffusion of cutting-edge tools. Conversely, when restricted, it isolates firms from critical resources. That is to say that trade integration accelerates technological upgrading via imports of intermediate and capital goods.[6] However, such a process is jeopardized when geopolitical tensions result in export bans, blacklists, or licensing limitations.

There is evidence that digital trade barriers significantly reduce technological innovation efficiency.[7] These barriers include cross-border licensing requirements, data localization rules, and platform access restrictions. Their effects are particularly important in mid-income economies with limited domestic alternatives. For example, evidence indicates that semiconductor trade disruptions led to cascading delays and cost increases in downstream firms reliant on timely access to high-performance chips. These indirect effects highlight the systemic character of technology supply chains, where constraints at the upstream level reverberate throughout entire sectors.[8]

At the firm level, the uncertainty surrounding trade-based technology restrictions inhibits investment in infrastructure upgrades and system integration. Firms facing uncertain access to foundational technologies, whether due to export controls, supply chain reconfiguration, or retaliatory sanctions, tend to delay digital modernization in favor of legacy system maintenance.[9] In dynamic sectors like fintech, logistics, and e-commerce, such hesitation leads to digital competitiveness gaps that are difficult to recover. In short, access to technology is not a passive condition but an active determinant of competitiveness parity in a volatile global economy.

What do executives say?

Access to enabling technologies also forms the operational basis of any digitally competitive enterprise. Think cloud infrastructure, digital platforms, semiconductors, and AI engines. In an increasingly conflictual trade landscape, this domain is subject to growing strain. 41.98% of survey respondents report that international trade conflicts have negatively affected their firm's access to essential technologies.

Cross-national analysis indicates that such an impact is not confined to any one region or income group. Rather, the most severely affected economies include both advanced industrial countries and emerging digital markets. Poland leads the global ranking, with 67.61% of executives citing negative effects in this domain. Ghana (61.40%), France (61.02%), Malaysia (60.50%), and Botswana (56.92%) round out the top five. This distribution points to a convergence of technological dependencies across geographies, where supply chain positioning and external licensing access may matter more than domestic capacity alone.

Poland and Ghana illustrate different forms of vulnerability to trade-related technology disruptions. Poland's dual role as both importer and integrator of digital systems makes its firms, particularly in manufacturing and logistics, highly sensitive to export controls, platform restrictions, and evolving certification regimes linked to US, East Asian, and EU policies. Despite being embedded in the EU single market, Polish firms rely on external software and infrastructure, and face friction as initiatives like GAIA-X and the European Chips Act remain under development.[10] Ghana, by contrast, represents the challenges faced by emerging digital economies that depend on imported telecom hardware, enterprise platforms, and licensed software to support growth. SMEs are especially vulnerable to tariff hikes, licensing barriers, and software access delays, with limited domestic substitutes. Similar risks affect other African digital exporters, including Nigeria (55.65%), where structural reliance on global platforms amplifies exposure to trade fragmentation.[11] France, Malaysia, and the Philippines illustrate how trade conflict disrupts technology access through both regulatory and supply chain channels. France's high impact score reflects tensions between its digital sovereignty agenda and reliance on global tech ecosystems. National rules on data residency and EU-focused procurement impose complex compliance burdens, which are intensified by platform shifts linked to US-China trade tensions.[12] In Southeast Asia, Malaysia faces technology friction due to supply chain exposure. Malaysia's role in global semiconductor production makes it vulnerable to restrictions on chip designs and cloud platforms. Malaysian firms are thus constrained by geopolitical dynamics beyond their control.[13]

Ultimately, access to technology is no longer ensured by economic status or national policy alone. It now depends on complex trade relations, licensing constraints, and platform geopolitics. Firms increasingly face disruptions to essential tools (e.g., cloud services and AI libraries) due to policy decisions beyond their control. As digital sovereignty efforts, fragmented standards, and retaliatory restrictions grow, access to technology is shaped as much by geopolitical alignment as by innovation capacity.

3. The regulatory environment

The regulatory environment has become one of the most complex and consequential domains through which trade conflicts disrupt digital strategy. Unlike traditional trade barriers, which are often transparent and quantifiable (e.g., tariffs or quotas), regulatory barriers emerge "behind the border" and operate through technical standards, compliance protocols, and institutional divergence. These non-tariff measures can exert greater economic influence than tariffs precisely because they are harder to contest, measure, or harmonize.[14] In the context of digital strategy, regulatory divergence directly affects how, and whether, firms can scale services, transfer data, protect intellectual property, and secure legal standing in foreign markets.

Studies support the conclusion that regulatory fragmentation is a central constraint on digital trade and firm competitiveness. Barriers related to cross-border data flows, local content requirements, and technology certification significantly reduce services exports, especially

6 See for instance Coe, D. T., & Helpman, E. (1995). International R&D spillovers. European economic review, 39(5), 859-887.
7 Yan, M., & Liu, H. (2024). The impact of digital trade barriers on technological innovation efficiency and sustainable development. Sustainability, 16(12), 5169.
8 Kravchenko, K., Gruchmann, T., Ivanova, M., & Ivanov, D. (2024). Responding to the ripple effect from systemic disruptions: empirical evidence from the semiconductor shortage during COVID-19. Modern Supply Chain Research and Applications, 6(4), 354-375.
9 Bloom, N., Bunn, P., Chen, S., Mizen, P., Smietanka, P., & Thwaites, G. (2019). The impact of Brexit on UK firms (No. w26218). National Bureau of Economic Research.
10 Del Giovane, et al., 2023. Nature, evolution and potential implications of data localisation…; and European Commission. (2023). The European Chips Act. https://digital-strategy.ec.europa.eu/en/policies/european-chips-act
11 World Bank & World Trade Organization, 2023. Digital trade for development…; and UNCTAD. (2021). Digital economy report 2021: Cross-border data flows and development — For whom the data flow. https://unctad.org/webflyer/digital-economy-report-2021
12 Del Giovane, et al., 2023. Nature, evolution and potential implications of data localisation…; and UNCTAD, 2021. Digital economy report 2021…
13 World Bank & World Trade Organization, 2023. Digital trade for development…
14 Baldwin, R. (2016). The great convergence: Information technology and the new globalization. Harvard University Press.

among SMEs with limited compliance capacity.[15] In parallel, the implementation of the General Data Protection Regulation (GDPR) has had extraterritorial consequences. While GDPR has raised global data privacy standards, its variable enforcement across jurisdictions has created legal uncertainty and fragmented compliance obligations, particularly for non-EU firms.[16] That is, regulatory measures intended to enhance trust and accountability can unintentionally serve as exclusionary trade practices.

The burden of regulatory fragmentation is intensified by the fact that digital regulations are cross-cutting rather than sector-specific. In turn, such regulations force firms to simultaneously comply with overlapping standards in AI, financial reporting, and data governance across jurisdictions. This institutional decoupling reduces investment efficiency and stifles innovation in emerging technologies such as AI, biotech, and blockchain.[17] Southeast Asia illustrates these dynamics clearly. ASEAN's efforts at regulatory harmonization are undermined by national divergences and geopolitical sensitivities, which delay data exchange and weaken digital supply chain integration.[18] Firms in Malaysia, for instance, face concurrent compliance with local data residency laws, US-China platform divides, and EU-style privacy standards. That level of compliance imposes significant structural and strategic costs. As a result, regulatory alignment is at the forefront of digital competitiveness, requiring legal foresight, jurisdictional adaptability, and sustained investment in compliance capabilities. Such factors cannot be easily hedged or outsourced in an increasingly fragmented digital economy.

What do executives say?

In the digital economy, the regulatory environment plays a decisive role in shaping how firms scale across markets, manage data, protect intellectual property, and ensure operational continuity. Unlike traditional trade barriers, which tend to be explicit and quantifiable, regulatory barriers emerge behind the border through technical standards, compliance frameworks, and institutional divergence. Such barriers are difficult to contest in trade negotiations and disproportionately affect digital firms operating in multiple jurisdictions. According to survey results, 36.42% of executives indicate that trade conflict has introduced or exacerbated regulatory constraints on their firm's digital strategy. This result suggests that the coherence of the legal environment is now a strategic variable in digital competitiveness.

At the global level, the five most affected countries are Jordan (56.44%), Malaysia (56.30%), Belgium (51.11%), Austria (50.56%), and Spain and Chile (both with 50%). Each of these countries illustrates a different facet of regulatory vulnerability. In Jordan and Malaysia, firms must navigate overlapping and sometimes contradictory legal regimes imposed by trading partners, technology suppliers, and regional blocs. In the European cases, regulatory complexity stems less from institutional weakness than from excessive fragmentation and extraterritorial legal exposure. The latter is particularly so in relation to global data governance norms. Meanwhile, Chile has opted for a hybrid positioning that leads it to participate in OECD frameworks while engaging in Pacific regional trade. Such positioning exposes its digital landscape to simultaneous pressure from Western data norms and Asia-Pacific digital sovereignty measures.[19]

The rest of the top 10 includes the Netherlands (48%), Indonesia (47.54%), Germany (46.88%), and Ireland (46.55%). In the Netherlands and Germany, regulatory complexity arises not from lack of legal clarity but from geopolitical entanglements. As host countries to multinational cloud providers and digital platforms, they are often front-line implementers of contested global data policies.[20] German firms in particular are impacted by export controls tied to cybersecurity certifications and AI risk classifications.[21] Indonesia's challenge arises from dual pressures. First, it needs to uphold national digital sovereignty while remaining compatible with global interoperability frameworks. Such a balance becomes harder to maintain under intensifying trade tensions.[22]

Across all these cases, one finding remains clear. Regulatory divergence is no longer an incidental or secondary concern. It is a core issue in digital strategy formulation. As such, it affects everything from product architecture and user interface localization to contract structuring and data pipeline design. Firms must now budget for multi-jurisdiction legal compliance, anticipate rule changes driven by retaliatory trade actions, and maintain regulatory adaptability as a core capability. Success in such a context depends not only on technological innovation or market demand, but also on institutional intelligence. That is, the ability to interpret, align with, and adapt to a shifting regulatory landscape.

4. Innovation and R&D

Innovation and R&D are at the core of firm-level digital competitiveness. They enable the development of new products, processes, and services that differentiate firms in increasingly saturated markets. Trade openness is important in fostering innovation through knowledge spillovers, access to advanced inputs, and global learning-by-doing mechanisms.[23] In practice, these mechanisms are disrupted when geopolitical tensions limit cross-border flows of information, capital, and technical collaboration. Thus, any erosion of international trade cooperation directly threatens the effectiveness of innovation systems. This is particularly so for those dependent on globally distributed R&D networks.

There is evidence that trade conflict-induced constraints on innovation are not only financial but structural. For instance, while Chinese firms on US entity lists (i.e., classified as a national security issue by US authorities) increased their R&D expenditures by 16.6% in response to export restrictions, they did not experience a corresponding increase in innovation output, such as patents or product launches.[24] Such a divergence reveals the limitations of defensive innovation strategies that attempt to substitute domestic efforts for blocked international inputs

15 Ferracane, M., & Marel, E. V. D. (2019). Do data policy restrictions inhibit trade in services?. Robert Schuman Centre for Advanced Studies Research Paper No. RSCAS, 29.
16 Ferracane, M. F., Kren, J., & Van der Marel, E. (2021). The costs of data protectionism. Big data and global trade law, 63-82.
17 Cerdeiro, D. A., Mano, R., Eugster, J., & Peiris, M. S. J. (2021). Sizing up the effects of technological decoupling. International Monetary Fund.
18 Wiedemann, N., & Leicht, M. (2023). Supply Chain Data Sharing: Evaluating Challenges and Opportunities of EU Data Law. Available at SSRN 4651903.

19 Ministry of Trade and Industry, Government of Singapore. (2025). Overview of the Digital Economy Partnership Agreement (DEPA); and OECD (2025). Digital Government in Chile: Strengthening the Management of Digital Investments. OECD Publishing.
20 The Cyber Hive Analysis. (2025). European businesses rethinking cloud dependencies amid geopolitical risk. The Cyber Hive.
21 OECD (2024). OECD Artificial Intelligence Review of Germany. OECD Publishing.
22 OECD. (2024). OECD Digital Economy Outlook 2024: Embracing the Technology Frontier. OECD Publishing.

23 Grossman, G. M., & Helpman, E. (1991). Trade, knowledge spillovers, and growth. European economic review, 35(2-3), 517-526.
24 Hu, H., Yang, S., Zeng, L., & Zhang, X. (2024). US–China trade conflicts and R&D investment: evidence from the BIS entity lists. Humanities and Social Sciences Communications, 11(1), 1-15.

or partnerships. The quality and strategic value of innovation declines when global collaboration and specialized imports are no longer reliably accessible.

The vulnerability of innovation to trade conflict is particularly visible in countries situated within larger regional innovation networks. Geopolitical sanctions and policy frictions reduce co-patenting and joint research activities between Western and Eastern Europe.[25] Fragmentation of research ecosystems erodes the diversity and quality of innovation pipelines. Fragmentation thus reduces firms' ability to harness external expertise and technological advances. This is not limited to formal R&D partnerships. Informal diffusion channels such as industry conferences, cross-border hiring, and shared research infrastructure are also undermined by trade conflict. Furthermore, planning for innovation becomes increasingly volatile under conditions of trade uncertainty. Firms facing policy ambiguity often delay or scale down irreversible investments.[26] Innovation projects, which require multi-year capital commitments and involve considerable sunk costs, are particularly sensitive to this risk.

What do executives say?

Innovation and R&D are increasingly shaped by the pressures of geopolitical fragmentation. 31.96% of high-level executives report that international trade conflicts have adversely affected their organization's innovation and R&D strategies. While this figure is lower than the impact levels recorded for market access and technology acquisition, it nonetheless signals a structural vulnerability in firms' capacity to sustain long-term innovation cycles under conditions of strategic uncertainty.

Economies that are deeply embedded in cross-border innovation environments show the highest levels of concern in this regard. The Czech Republic ranks first, with 58.33% of executives identifying trade conflict as a significant constraint. Malaysia follows closely at 54.62%, while Indonesia (49.18%), Korea Rep. (48.68%), and China (47.95%) round out the top five. These economies, though diverse in income and innovation capacity, share a common trait. They experience high exposure to international research collaboration, technological co-dependence, and integrated production value chains. The Czech Republic and Malaysia exemplify how deep integration into regional innovation ecosystems heightens exposure to geopolitical disruption. Czech firms, though moderate in domestic R&D spending, rely heavily on EU research funding, cross-border technology transfer, and industrial partnerships linked to Germany and Austria. These ties make innovation performance sensitive to trade tensions such as EU-US data-sharing uncertainties, dual-use export controls, and shifting digital services regulation.[27] Malaysia's high vulnerability similarly reflects its role in East Asia's semiconductor and electronics value chains, where local firms act as R&D intermediaries for Japanese, Korean, and Chinese tech leaders. This position leaves them exposed to export restrictions and platform sanctions originating from the US-China technology rivalry, particularly in areas like cloud access, AI tools, and chip design, which directly constrain their innovation capacity.[28]

Indonesia represents a distinct but instructive case. As a rising fintech and e-commerce center, its digital innovation environment is more service-oriented and less dependent on hardware co-development. Nevertheless, it is structurally reliant on foreign intellectual property (IP), software platforms, and cross-border investment.[29] Restrictions on foreign participation in digital infrastructure, or platform decoupling between Chinese and Western providers, introduce friction into R&D planning.[30] In such a context, digital firms depend on an uninterrupted flow of global tools and standards to remain competitive. Furthermore, Korea and China highlight the challenges faced by national innovation systems under trade-induced decoupling. In China's case, aggressive domestic R&D investment has been ramped up to compensate for diminished access to US technologies, but results have been mixed. Research has shown that while firms increase expenditures, the innovation yield measured in patents, collaborations, or commercialized breakthroughs has not always improved proportionally.[31] Korea faces parallel challenges, with US and Chinese export controls affecting critical sectors such as AI, advanced displays, and 5G infrastructure.[32]

Survey results thus highlight that innovation resilience depends on domestic capability or spending intensity as well as on a country's structural position within global research flows and technological dependencies. As trade tensions multiply and multilateral coordination declines, countries and firms embedded in collaborative environments face heightened exposure to external regulatory shifts, export barriers, and retaliatory policies.

5. Talent acquisition and retention

In an economy increasingly defined by digital capabilities, access to high-skilled human capital has become a central determinant of firm digital competitiveness. Talent acquisition and retention are particularly vulnerable to trade conflicts because they rely on frameworks that enable mobility, cross-border service provision, and international recognition of qualifications. When these frameworks are disrupted, for instance, through visa restrictions or retaliatory immigration policies, the ability of firms to hire globally competitive talent deteriorates. This has both direct operational consequences and long-term strategic implications for innovation, service delivery, and market responsiveness. Evidence suggests that firms operating in jurisdictions affected by trade-related restrictions on labor mobility report longer recruitment timelines and lower productivity. Multinationals exposed to bilateral trade tensions often face hiring delays and higher labor costs due to increased visa compliance, partner country retaliation, or exclusion from cooperative education and training programs.[33] These frictions are particularly harmful in digitally intensive sectors where expertise in cybersecurity, AI, cloud architecture, or data engineering is both scarce and globally contested. Firms unable to source talent externally are often forced into suboptimal

25 Makkonen, T., & Mitze, T. (2021). Geo-political conflicts, economic sanctions and international knowledge flows. arXiv preprint arXiv:2112.00564.
26 Bloom, N., Bond, S., & Van Reenen, J. (2007). Uncertainty and investment dynamics. The review of economic studies, 74(2), 391-415.
27 Del Giovane, et al., 2023. Nature, evolution and potential implications of data localisation…; and European Commission (2023). Digital Decade policy programme 2030. https://digital-strategy.ec.europa.eu/en/library/digital-decade-policy-programme-2030
28 World Bank & World Trade Organization, 2023. Digital trade for development…; and UNCTAD, 2021. Digital economy report 2021…
29 OECD (2024). Services Trade in Indonesia: Exploring patterns, policies, and reform Scenarios. OECD Publishing.
30 U.S. International Trade Administration. (2025). Indonesia Digital Economy. Retrieved from https://www.trade.gov/country-commercial-guides/indonesia-digital-economy
31 Hu, H., Yang, S., Zeng, L., & Zhang, X. (2024). US–China trade conflicts and R&D investment: evidence from the BIS entity lists. Humanities and Social Sciences Communications, 11(1), 1-15.
32 Kim, H., & Cho, J. (2024). The impact of US export controls on Korean semiconductor exports. KDI Journal of Economic Policy, 46(3), 1-23.
33 Gordon, J. (2022). In the zone: Work at the intersection of trade and migration. Theoretical Inquiries in Law, 23(2), 147-183.

domestic hiring or expensive retraining initiatives, which limit their capacity to scale up their digital transformation.

The spatial fragmentation of digital labor markets also limits the use of remote work and online platforms, which were once seen as mitigating tools for talent shortages. Trade conflicts affecting cloud infrastructure, cross-border payments, and data governance indirectly reduce the viability of digital freelancing and remote service delivery.[34] This disproportionately affects firms in emerging markets that depend on global talent marketplaces to access specialized expertise. Even when local skills are available, the absence of global exposure and collaboration hinders capability development, reinforcing the digital skills divide between countries. Furthermore, high-skilled migration is often tightly linked to research collaboration, joint ventures, and corporate mobility programs. Digital firms in the US and EU increasingly cite restrictive immigration policies exacerbated by trade tensions as barriers to hiring in AI, biotech, and fintech sectors.[35] The erosion of the academic and professional mobility pipelines, moreover, reduces not only the volume but also the diversity of available talent, which undermines organizational adaptability and innovation capabilities. In other words, the intersection of trade and talent mobility reveals a new vulnerability in the digital strategy formulation. Firms that once relied on globally competitive labor markets must now build resilience in an environment of constrained access and politicized hiring frameworks.

34 Berg, J., Furrer, M., Harmon, E., Rani, U., & Silberman, M. S. (2018). Digital labour platforms and the future of work: Towards decent work in the online world. ILO

35 See Zwetsloot, R., Zhang, B., Dreksler, N., Kahn, L., Anderljung, M., Dafoe, A., & Horowitz, M. C. (2021, July). Skilled and Mobile: Survey Evidence of AI Researchers' Immigration Preferences. In Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society (pp. 1050-1059).

What do executives say?

Talent acquisition is a critical dimension of digital competitiveness, yet it remains particularly vulnerable to disruption in a fragmented global trade environment. Trade-induced restrictions on labor mobility include visa tightening, diplomatic frictions, or restrictions on labor-sending countries. Survey results indicate that 31.49% of respondents report international trade conflicts have negatively affected their ability to hire or retain digital talent. While this makes talent the least cited of the five strategic domains analyzed, the absolute level of concern (i.e., reported by nearly one in three respondents) suggests that human capital flows are subject to structural pressures with significant operational implications. The highest reported impact levels come from countries with distinct forms of labor market dependency and openness. Kuwait ranks first, with 56.92% of executives citing trade-related disruptions to talent strategy. The Philippines (45.54%), Cyprus (44.68%), Puerto Rico (44.44%), and Indonesia (44.26%) follow closely behind. These figures highlight a shared vulnerability across economies that rely either on expatriate labor for digital operations or on international labor markets to source specialized digital expertise.

Kuwait's top position reflects its structural reliance on imported talent in sectors such as IT consulting, digital infrastructure, and fintech. Despite policy efforts to nationalize portions of the workforce, the country's digital economy continues to draw heavily from South Asian and Southeast Asian labor markets.[36] Trade-related restrictions on labor mobility pose direct threats to workforce continuity. These constraints are compounded by the increasing politicization of migration policy and the spillover effects of bilateral diplomatic tensions. The Philippines, a global hub for business process outsourcing (BPO), relies on skilled digital professionals to serve clients across North America, Europe, and Asia. Trade-related barriers (e.g., remote work taxes, licensing hurdles, and data flow restrictions) make it harder for firms to maintain contracts and retain talent, especially in smaller BPO centers with limited shock absorption capacity.

Cyprus and Puerto Rico provide another example of small economies reliant on cross-border digital talent. Cyprus is a growing hub for IT services, software development, and digital marketing. Firms in the country depend heavily on internationally mobile professionals. Any disruptions in visa reciprocity or international credential recognition thus undermine the subcontracting pipelines and workforce continuity.[37] Similarly, Puerto Rico's digital firms face shrinking talent pools and compliance burdens when international remote work and licensing rules shift. Additionally, Indonesia presents distinct vulnerabilities. Despite its large domestic market, its digital economy, particularly in fintech and logistics tech, is constrained by severe shortages of advanced technical talent. Firms tap into talent within the ASEAN region, yet trade-related restrictions such as hiring bans and cross-border frictions significantly limit access to the skills needed for innovation.[38]

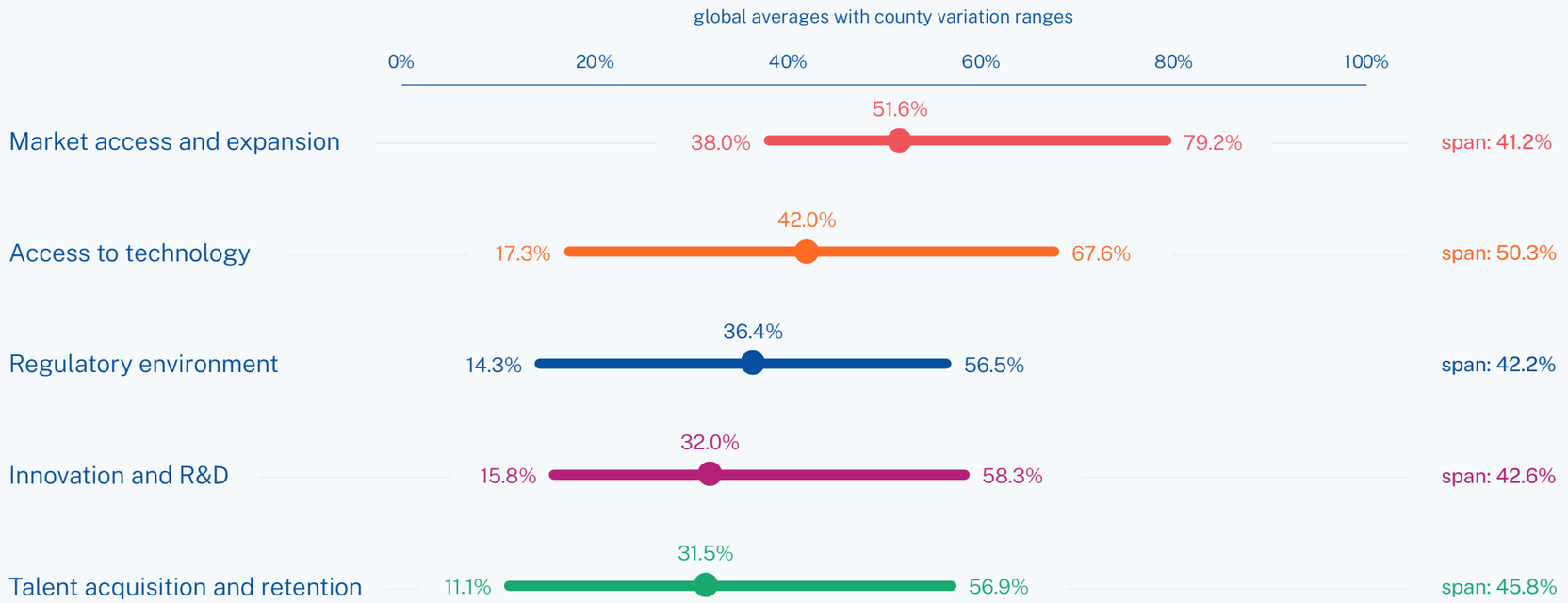
Other countries that report high impact in this domain include Peru (43.18%), Malaysia (42.86%), Bulgaria (42.03%), Türkiye (41.67%), and Hungary (41.57%). In Malaysia's case, the dual dynamic of being both a receiver of digital talent and a regional exporter of IT services means that any hindrance to labor mobility resonates through both demand and supply channels. In Türkiye and Hungary, the issue is compounded by economic and political uncertainty, which amplifies the difficulty of attracting and retaining internationally mobile talent even without formal restrictions. While the impact on talent acquisition is more localized than market entry or technology access, its implications are no less strategic. A constrained talent environment not only raises costs and delays project implementation but also limits innovation and digital integration across business units. For AI and platform engineering globally competitive firms, reliance on specialized cross-border expertise is a structural feature of their business models. When those models are disrupted by external policy tensions, substitution is rarely immediate or efficient.

36 ILO (2018). Decent Work Country Programme for Kuwait. ILO country report.

37 IMF (2024). Cyprus: 2024 Article IV consultation – staff report. IMF Publication.

38 Economic Research Institute for ASEAN and East Asia (ERIA). (2024). Enhancing ASEAN's Competitiveness: Talent Mobility and Cooperation in the Digital Economy.

Box 2: The impact of international trade conflict on digital strategy: global averages



Rethinking digital strategy amid 2025's trade fragmentation

Digital strategy is no longer defined solely by internal capabilities or innovation diffusion.[39] It should now be understood as an externally responsive process, shaped by trade conflict, regulatory fragmentation, and geopolitical alignment. The five domains examined (market access, access to technology, regulatory environment, innovation and R&D, and talent acquisition and retention) serve as the principal channels through which these external pressures condition firm-level digital competitiveness. Each of these areas connects to broader institutional dynamics and subsequently to digital strategy. Market access and access to technology were the most frequently cited but concerns across the five domains were evenly distributed, globally. Countries like the Czech Republic, Malaysia, and Jordan illustrate that vulnerability to the impact of trade fragmentation is driven less by digital capacity and more by exposure to cross-border flows.

Analysis of the executives' answers shows us that the five domains are interdependent. This means that firms cannot isolate one area without encountering constraints in others. For instance, impacts on market access could cascade into barriers to talent acquisition, innovation and R&D, and/or regulatory compliance. In such a context, firms interested in growing their strategic resilience therefore need to develop capabilities across multiple fronts, including regulatory and geopolitical adaptability and jurisdictional flexibility. For policymakers, supporting digital competitiveness is starting to demand much more than investment in infrastructure or even in skills. Instead, it needs a coordinated trade policy and regulatory alignment with a view to reducing institutional uncertainty and restoring coherence to the digital economy's operating environment. Trade conflicts, in short, have evolved into a structural condition of the global economy. They shape the geography, processes, and partnerships through which countries and firms implement their digital strategies.

39 Ismail, M. H., Khater, M., & Zaki, M. (2017). Digital business transformation and strategy: What do we know so far. Cambridge Service Alliance, 10(1), 1-35.

Digital enablers at the industry level

Impacts and trends

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Digital competitiveness is central to economic performance and has become a defining component of national resilience in the face of shocks. Therefore, the rapid pace at which industries, companies, and governments are adopting and applying new technologies underscores the need for robust digital policy frameworks, flexible and adaptive business practices, as well as having mobile and highly skilled talent capable of maximizing the benefits of increased digital penetration. From data-driven automation and decision-making to artificial intelligence, digital technologies are reshaping production, services, and governance at an alarmingly disruptive pace across all industries.

The 2025 World Digital Competitiveness Ranking (WDCR) is based on a combination of 40 hard data indicators and 21 survey questions capturing executive perceptions, providing a comprehensive assessment of how economies are adapting to digital transformation. This essay focuses specifically on insights from IMD's Executive Opinion Survey, which collected the perspectives of more than 6,000 senior executives worldwide between January and March 2025. Analyzing these responses by country and sector of activity reveals that digital progress is far from uniform across economies. The resulting digital divide reflects structural disparities both between countries and, more significantly, within them.

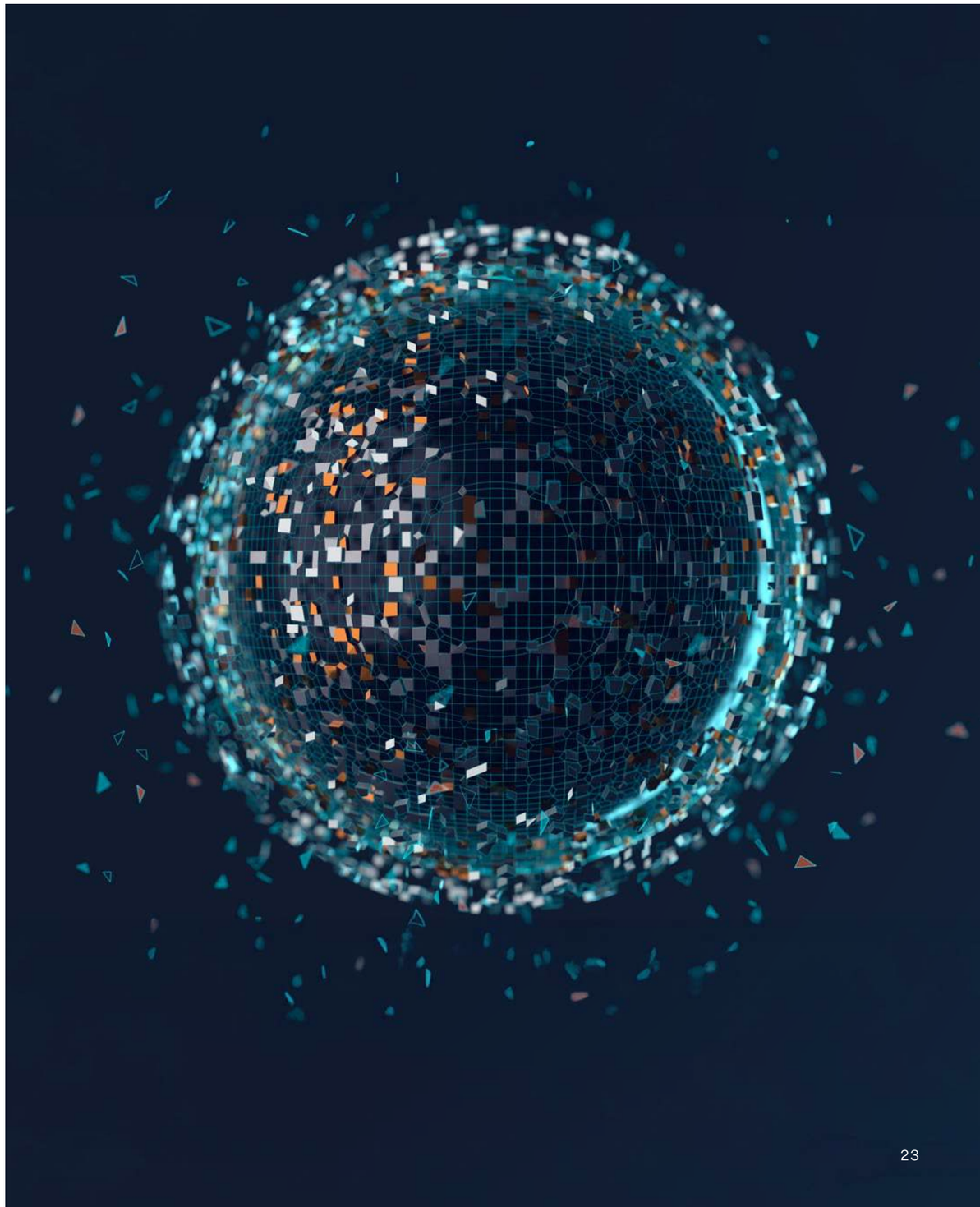
The data forming the results of the 2025 WDCR is from international, national, and regional sources.

A core part of the data making up the results of the 2025 World Digital Competitiveness Ranking is the IMD Executive Opinion Survey. Between January and March 2025, we asked 6,162 global executives 21 questions on the business climate in their location. In addition, this year we took the survey and disaggregated responses to one digitally related question (the only question that did not feed into the overall results, incidentally): "How do trade disputes affect the digital strategy of your company?"

We regrouped the answers from executives in each country by the sector of activity of the respondents and then looked for patterns that cross-cut them. We found that economies are not advancing digitally in a uniform way. The resulting digital divide is not only a matter of disparities between countries, but also within them.

These domestic gaps might be geographical – rural and urban areas being very different – or socioeconomic, reflecting variations across income groups. But what jumped out the most is that they are also sectoral, with the various industries experiencing and undertaking digital adoption at vastly different speeds. While some sectors move quickly to integrate digital tools, others lag, creating vulnerabilities for their country's long-term competitiveness.

These disparities matter deeply in the current global context. Ongoing geopolitical tensions are complicating national and company-level digital strategies. Meanwhile, trade disputes, diverging regulatory frameworks, and a growing desire for digital sovereignty – that is, boosting nations or firms' abilities to control their digital environment – are fragmenting global digital governance.



The result is increased uncertainty and complexity for firms and governments attempting to navigate an increasingly contested landscape. In this environment, understanding how digital enablers impact industries in different ways becomes an essential analytical tool for working out why some industries and countries will continue to benefit from a competitive edge in the digital economy.

Research by the World Competitiveness Center suggests that industry performance and country-level competitiveness in the digital arena are primarily influenced by three critical digital enablers that facilitate technology adoption and assimilation: (1) digital governance and policy frameworks, (2) company capabilities, and (3) human capital.

By analyzing all three, we can move beyond isolated indicators and highlight the systemic conditions through which industries convert digital opportunities into competitiveness. For each enabler, we examine survey-based industry results to understand how executives perceive their digital readiness, see where gaps emerge, and why these differences matter.

In the IMD Executive Opinion Survey, business leaders answer questions using a scale from 1 to 6. A score of 1 indicates that the factor being evaluated does not support competitiveness in its economy, and 6 means that it strongly does. For this analysis only, we have converted these scores into percentages to provide a clearer basis for comparison: a score of 0% reflects complete dissatisfaction, while 100% represents the highest possible level of support for competitiveness according to executives.

By grouping the 21 survey questions into three categories – the key digital enablers – our analysis moves beyond individual data points to highlight systemic strengths and weaknesses that are perceived at the industry level. This is supported by the supposition that the enablers provide the structural conditions through which firms and industries translate digital opportunities into tangible performance gains.

Enabler 1: Digital governance and policy frameworks

Effective digital governance creates the conditions for industries to adopt and scale digital tools. It encompasses the institutional and regulatory environment that shapes how firms can operate digitally, covering areas from cybersecurity to intellectual property protection, and can include public-private partnerships or the management of digital infrastructure. As global digital governance fragments, however, the outcomes of such frameworks diverge across industries.

Our analysis examines six survey questions related to this enabler: management of cities, banking and financial services, public-private partnerships, cybersecurity, laws relating to scientific research, and intellectual property rights. The results reveal significant variation in how executives perceive the quality of digital governance in their economies.

Banking and financial services consistently score highly across industries, with an average satisfaction rate of 62.2%. Executives in finance and insurance report the highest satisfaction at 69.5%, reflecting decades of regulatory attention and investment in digital infrastructure. At the other end of the spectrum, executives in agriculture (58%) and construction (57.8%) are least satisfied, suggesting that existing regulatory and financial frameworks are less responsive to the needs of more traditional sectors. The relative uniformity of scores across industries highlights the long-standing policy priority given to the digitalization of financial services in economies across the world, helping explain why the financial sector has often spearheaded digital adoption. However, the lower satisfaction in agriculture and construction signals potential blind spots: without targeted policies to extend governance benefits more evenly, economies risk entrenching a digital divide between highly digitized and lagging industries.

The small disparities observed in banking services satisfaction extend more prominently to other areas of digital governance, suggesting that institutional attention remains uneven across sectors. Traditional industries like agriculture score notably lower on important governance indicators such as intellectual property rights protection (61.2% compared to the industry-wide average of 67%) or the management of cities (59.8% versus 65.3%). This suggests that governance frameworks in the digital sphere may be optimized for certain sectors that are considered more profitable at the expense of more traditional ones, such as construction and education.

This pattern extends to opinions on the level of cybersecurity within each field: whereas agriculture, construction and education executives rate cybersecurity slightly below the global average of 60.2%, executives in finance, insurance, and real estate rate their level of cybersecurity at 65.4%, indicating that digital security governance may not adequately address emerging vulnerabilities in sectors undergoing digital transformation and may be overly focused on protecting the industries which have already undertaken such digitalization. This could also reflect cybersecurity policies that have evolved reactively around high-value sectors rather than proactively across the broader economy.

Public–private partnerships reveal further asymmetries. Transport and storage executives rate this dimension at 65.5%, above the cross-industry average of 62.6%, likely reflecting the infrastructure-intensive nature of the sector and its reliance on government coordination in areas such as port digitalization or smart traffic systems. Construction, hospitality, and manufacturing show similar levels of satisfaction, indicating that public investments are perceived as more effectively implemented in infrastructure-heavy industries. By contrast, satisfaction scores are lowest in the electricity, gas, and water sectors; industries that, despite being partly nationalized, often face complex governance structures that slow innovation. This could suggest that governments may prioritize PPPs where returns are most visible, leaving less profitable sectors under-supported.

Divergent regulatory approaches among major economies further complicate governance outcomes. The European Union's focus on data protection through frameworks such as the GDPR provides robust consumer safeguards but imposes compliance burdens that can weigh heavily on smaller firms and certain industries. Meanwhile, competition between the United States and China over technology exports has introduced new trade restrictions, which further fragment markets and increase uncertainty. As

this regulatory divergence deepens, industries operating across borders face growing complexity that risks slowing innovation diffusion and scale, two critical drivers of digital competitiveness.

Enabler 2: Company capabilities

Company capabilities refer to firm-level organizational attributes that enable digital adoption, literacy, and competitiveness more broadly. It includes indicators such as company agility, knowledge transfer, use of big data, access to venture capital, recognition of opportunities and threats, and flexibility and adaptability. Analysis of these six indicators reveals that digital capabilities are unevenly distributed across industries, with important implications for national competitiveness strategies.

The most striking finding is the universal challenge faced by firms when trying to access venture capital to develop their activities. The executive opinion survey suggests that every industry struggles in this dimension, with satisfaction scores ranging from a low of just 43.6% in the arts, entertainment, and recreation industries to a high of only 59.6% in accommodation and food services. Manufacturing, despite being the largest sector in our sample with over 1,100 respondents (21% of the total), scores just 51%. Executives in professional, scientific, and technical services, which should theoretically attract innovation capital, also report just 52.6% satisfaction with their access to venture capital. Similarly, in the IT and communications sectors, the core of the digital economy, executives' satisfaction is below average at 59%.

This industry-wide dissatisfaction points to a systemic financing gap. Venture capital remains concentrated in a few geographic hubs (like Silicon Valley) and narrow technology fields such as software or fintech, leaving most traditional industries digitally undercapitalized despite their potential for transformation. Digitalization in sectors such as manufacturing, agriculture, or transport requires financing models aligned with longer time horizons and higher capital intensity, yet current mechanisms are structurally misaligned with these needs. In short, venture capital markets appear ill-suited to enabling large-scale digital transformation beyond the startup ecosystem.

Company agility shows more variation and reveals some unexpected patterns that challenge common assumptions about digital readiness. Executives in the transport and storage industries scored 63.4% in company agility, matching manufacturing and slightly ahead of the finance, insurance, and real estate sector, which all exceeded the industry-wide average of 61.2%. Construction also achieves 60%, a strong result for a sector often characterized as resistant to change. These findings could suggest that operational pressures in logistics and global supply chains have driven higher organizational agility in sectors previously believed to be digitally conservative. The contrast with education is instructive: despite its knowledge-intensive nature, executives in education rate their sector just 58% on agility, likely reflecting frustration with institutional rigidity and regulatory constraints rather than the nature of the work itself. Ultimately, these results suggest that digital competitiveness depends as much on organizational flexibility and decision-making structures as on access to new technologies themselves.

Knowledge transfer presents perhaps one of the most concerning patterns for long-term digital competitiveness. In the education sector, responsible for developing and disseminating knowledge across society, executives only score 55.4% satisfaction with their ability to do that effectively, below the cross-industry average of 57.3% and behind professional, scientific, and technical services (56.4%). This result underscores structural rigidity with deep implications: if educational institutions face difficulty transferring knowledge within their own systems, their ability to prepare students and professionals for rapidly evolving digital careers is inherently limited. The challenge extends across the economy. Agriculture scores 55%, manufacturing 56.8%, and even the IT and communications sector, which is expected to lead in digital diffusion, registers just 58.2% from its executives. Such scores could point to a systemic weakness in moving knowledge from research to application, from innovators to adopters, and from early experimentation to broad operational use. In this sense, weak knowledge transfer mechanisms constrain the translation of national R&D capacity into productivity gains, particularly in traditional sectors where institutional collaboration is limited or fragmented.

The adoption of big data analytics shows clear sectoral stratification that correlates with both the availability of data and the clarity of use cases. For instance, the manufacturing sector has clear potential applications for big data use in predictive maintenance, quality control, and supply chain optimization. However, executives in the field only score a satisfaction of 55.8%, below the industry-wide average, potentially indicating dissatisfaction with data availability. On the other hand, the sector most satisfied with its use and application of big data is accommodation and food services, which outperforms expectations at 62.6%, possibly reflecting the sector's intensive collection and use of customer and operational data. It is interesting to note that, once again, executives in knowledge-intensive sectors such as education and scientific research are unhappy with the lack of data-driven decision-making that occurs in their field, scoring below the industry-wide average.

Cross-country comparisons reinforce the dynamics explored and support these arguments. In Germany's manufacturing sector, for example, executives report strong operational capabilities: employee training (72%), technology development (70%), and digital skills (72%) all exceed global averages and reflect decades of investment in vocational training, close university–industry collaboration, and structured initiatives to embed digital skills in production systems. Yet, despite this, weaknesses emerge in company capabilities. Most notably, venture capital access stands 7 percentage points below the average at just 44% and knowledge transfer scores 52%, versus 57% globally. This dual profile reveals a critical insight: strong institutional frameworks for workforce development and operational excellence don't automatically create innovation ecosystems at the company level or entrepreneurial dynamism. Germany excels at helping established manufacturers adopt and apply digital technologies, but struggles to generate funds for and scale disruptive digital innovations.

In the United States, the landscape of company capabilities shows even more variations between industries and, implicitly, between regions. IT and communications executives rate venture capital access at 64%, the highest value in the sample, and knowledge transfer at 66%, nearly ten percent above the global average. These high scores reflect the strength of innovation clusters such as Silicon Valley, Seattle, and Austin, where dense ecosystems of investors, accelerators, universities, and experienced entrepreneurs reinforce one another. However, traditional sectors tell a different story. US manufacturing

executives record only 42% satisfaction with venture capital access and 50% for big data analytics, below global averages and well under leading US industries. This internal divergence reflects both geographic concentration of digital capabilities and sector-specific institutional development. Technology hubs benefit from dense networks of investors, accelerators, universities, and experienced entrepreneurs. However, traditional industries in other regions lack these ecosystems, creating an internal digital divide, even within one of the world's leading digital economies.

These findings underscore that company capabilities are a foundational yet uneven enabler of digital competitiveness. They determine how effectively firms can absorb, adapt, and scale digital innovations, but also reveal structural asymmetries that shape national digital performance. Across industries, the persistent financing gap in venture capital and the systemic weakness in knowledge transfer point to a broader institutional misalignment between the digital economy's needs and existing market mechanisms. Meanwhile, differences in agility and big data adoption show that organizational flexibility and managerial culture remain critical to turning technological potential into productivity gains.

At the national level, contrasting examples highlight two distinct models of capability development. Germany's strength in skills formation and operational excellence demonstrates the power of long-term institutional investment but also exposes the limits of execution-driven systems that struggle to foster entrepreneurial experimentation. The United States, by contrast, illustrates how innovation ecosystems (which are dense, regionally concentrated networks of capital, talent, and research) can drive digital leadership in specific industries while leaving others behind. Both cases reveal that digital competitiveness increasingly depends not just on the presence of technology or talent, but on the ability of firms and institutions to integrate them into coherent, agile systems of innovation. Building inclusive digital economies requires fostering the organizational, financial, and knowledge-transfer mechanisms that allow all sectors, not just digital frontrunners, to participate in and benefit from technological progress.

Enabler 3: Human capital

Human capital encompasses the workforce skills and talent mobility necessary to develop digital competencies. Our analysis examines six indicators: employee training, digital skills, immigration laws, attitude towards globalization, foreign highly skilled personnel, and international experience of senior managers. The patterns that emerge challenge several conventional assumptions about which sectors possess strong digital human capital and reveal where economies risk structural skill mismatches.

Executive satisfaction with digital skills as an enabler of competitiveness shows a surprising hierarchy, with many industries scoring high marks compared to other indicators. Not surprisingly, IT and communications score amongst the highest with 70.4%, surpassed only by the transport industry (71.8%) and the finance, insurance, and real estate sector (71%). Even within more traditional sectors, satisfaction with digital skills is high with manufacturing (68.8%), construction (67.6%), and education (66.8%), all relatively close behind. The relatively strong performance of infrastructure-intensive sectors suggests a broader trend: industries with tangible efficiency gains from digitalization invest more successfully in workforce digital capabilities than those where the benefits are diffuse or harder to quantify.

On the other hand, executives' assessment of employee training reveals concerning disparities that hint at the existence of a growing digital divide with regard to human capital. With a cross-industry average of 62.3%, three industries stand out as notable weak performers in 2025: agriculture (60.6%), services (58%), and most concerningly, education (55.2%). Though such results are prone to the personal bias of respondents, the latter score is somewhat concerning, as it suggests that the sector responsible for training young professionals is itself underinvesting in digital skill development. This potential institutional weakness could have important cascading effects. If educators lack digital proficiency and pedagogical models remain outdated, they cannot effectively prepare future talent for digitally intensive careers. The issue here is not simply one of technical order through skill acquisition, but rather about the capacity for continuous learning and adaptation, which are attributes central to resilience in the face of technological change.

The strongest performers in employee training provide valuable contrasts. Transport and storage lead with 67.2%, followed by manufacturing (65.8%) and accommodation and food services (65.6%). These sectors face direct operational consequences from inadequate training, such as safety risks, service failures, or quality lapses, which create powerful incentives for workforce investment. Education, by contrast, experiences more diffuse and delayed feedback from training gaps, reducing the urgency for reform and modernization.

Recruitment of foreign highly skilled personnel shows the widest variation of any human capital indicator, exposing how industries integrate (or fail to integrate) into global talent markets. Agriculture ranks lowest at 51.4%, reflecting the relative geographic immobility of agricultural work and challenges in attracting international expertise. Construction follows at 59.4%, again showing how location-bound sectors struggle with global recruitment. In contrast, accommodation and food services reach 64.4%, benefiting from the global nature of hospitality careers. IT and communications score 59.2%, and professional, scientific, and technical services slightly lower at 58.6%, suggesting that immigration restrictions and regulatory hurdles constrain even knowledge-intensive and internationally integrated sectors.

International experience of senior managers follows a similar pattern. Accommodation and food services (63.0%) and transport (63.4%) lead agriculture (56.0%) and arts and entertainment (53.2%) by significant margins. The notion of international experience within an industry is extremely relevant because internationally experienced leadership correlates with awareness of global best practices, openness to external innovation, and access to transnational networks that facilitate knowledge transfer. Industries whose leadership has global exposure are better positioned to identify and adopt digital innovations, regardless of their origin. Attitudes toward globalization, while less dispersed, still vary meaningfully and range from 62.2% in arts and entertainment to 70.0% in accommodation and food services. This consistency across industries suggests that while executive sentiment about global integration remains generally positive, practical integration through skilled migration and cross-border managerial experience is less uniform.

Country examples illustrate how these dynamics play out in practice. Poland's professional, scientific, and technical services sector demonstrates both the progress and constraints of human capital development in emerging economies. Digital skills reach around 68%, close to Germany's 72%, and communications technology infrastructure scores near 74%, reflecting sustained investment in STEM education and an expanding technology services base. Yet venture capital access remains low at 36%, international managerial experience around 48%, and foreign talent recruitment approximately 56%. Poland's trajectory shows how strong domestic capability development can narrow execution gaps with advanced economies, but integration into global innovation networks and capital flows remains limited.

Japan offers a contrasting view. Executives rate technology development at 82% and digital skills at 72%, underscoring world-class technical education and engineering capacity. However, company agility is just 40% (versus a 61% global benchmark), decision-making using big data analytics is 39% (versus 56.2%), and the international experience of senior managers is a mere 30%. Knowledge transfer (50%) and attitudes toward globalization (57%) also fall below global averages. Hierarchical management cultures, consensus-oriented decision-making, and limited international exposure constrain Japan's ability to translate technical proficiency into organizational adaptability. An interesting takeaway from the Japanese scenario is that technical expertise alone is insufficient; digital competitiveness also requires adaptability, cross-cultural fluency, and institutional openness to experimentation and failure.

Human capital remains one of the most decisive enablers of digital competitiveness, but also one of the most complex. The data suggests that digital skills and training investments are unevenly distributed across sectors, often favoring those with immediate operational incentives. Meanwhile, barriers to global talent mobility and limited international experience constrain cross-border learning and innovation diffusion. Countries like Germany and Japan show that technical excellence does not guarantee agility, while emerging economies like Poland reveal that domestic capability-building must be paired with international integration to achieve lasting competitiveness. Building human capital for the digital age, therefore, requires more than skill accumulation; it demands institutional adaptability, openness to global exchange, and leadership capable of bridging technological potential with strategic execution.

Four sectoral trends shaping digital policy

Several cross-cutting themes emerge from the analysis of the role and impact of digital governance, company capabilities, and human capital as key enablers of digital competitiveness. From the insights of executives, here are four sectoral trends that are particularly relevant for future digital policy.

1. Infrastructure-intensive industries outperform expectations.

Transport, construction, and manufacturing display high digital readiness across communications technology, digital skills, and company agility. For instance, executives in construction rate their industry at 72.4% in communications technology, 67.6% in digital skills, and 66.4% in flexibility and adaptability. Operational imperatives such as efficiency, safety, and cost control may play an important role in accelerating digital adoption where the benefits are immediate and measurable. This challenges the long-standing narrative that traditional industries are resistant to digital transformation and illustrates that well-defined incentives and proven business cases can drive significant progress even in more conservative or manual sectors.

2. Knowledge-based sectors are underperforming despite their strategic importance.

According to executives in education, the industry is underperforming compared to other economic sectors in a few key metrics such as employee training (55.2%), knowledge transfer (55.4%), and digital skills (66.8%), revealing some important structural bottlenecks in the way economies address human capital accumulation in one of the most important industries for digital proficiency: teaching and education. As the sector tasked with enhancing human capital, its perceived inability to modernize could heavily undermine broader digital readiness. The issue appears institutional rather than technological: rigid governance, static employment structures, and risk-averse cultures inhibit reform even where awareness and resources exist. Without addressing these systemic barriers, economies risk reinforcing a digital skills deficit that limits innovation diffusion across all industries.

3. The lack of venture capital availability is a universal constraint.

Globally, executives across all industries demonstrate dissatisfaction with their access to venture capital. In fact, of all 21 survey questions, the global average for venture capital availability is the lowest in the sample (50.6%), nearly ten points behind executives' satisfaction with the availability of company funding for technological development (59.4%). Even leading industries such as IT and communications (50.8%), professional, scientific, and technical services (52.6%), and finance, insurance, and real estate (51.4%) report dissatisfaction. This could hint at a structural misalignment between existing venture capital models, which are generally designed for asset-light and rapidly scalable startups, and the capital-intensive realities of digital transformation in manufacturing, transport, or agriculture. Unless financing mechanisms evolve to support longer innovation cycles and physical investment needs, digital transformation could risk remaining concentrated in a narrow set of industries.

4. Governance frameworks remain uneven across sectors.

Banking, finance, and infrastructure benefit from decades of coordinated regulation, public investment, and institutional support for digital initiatives. In contrast, emerging digital sectors and transforming traditional industries face fragmented governance characterized by unclear regulatory pathways, weak IP protection, and limited public-private coordination. This unevenness generates uncertainty and slows digital diffusion beyond the most regulated sectors. Expanding governance frameworks to support a wider range of industries could strengthen national digital resilience and ensure more inclusive competitiveness.

Digital enablers at the industry level
Impacts and trends

We can see from these global patterns that different industries experience digital enablers in different ways. For business leaders, understanding both which industries and countries are successfully addressing specific digital challenges can inform partnership strategies, investment decisions, and talent development priorities. Recognizing that multiple pathways to competitiveness exist allows for learning from diverse models rather than assuming a single approach works universally.

Ultimately, digital competitiveness in a fragmented world depends on bridging divides. Success lies not in achieving headline scores in isolated sectors but in ensuring digital transformation spreads broadly, inclusively, and sustainably across the economic landscape. Economies that combine robust governance, adaptable companies, and continuous human capital development across all industries, not just priority sectors, will prove more resilient than those dependent on narrow excellence, however exceptional that excellence may be.

As geopolitical tensions continue to reshape the institutional environment for digital strategy, this broad-based resilience becomes ever more critical for sustained digital competitiveness.

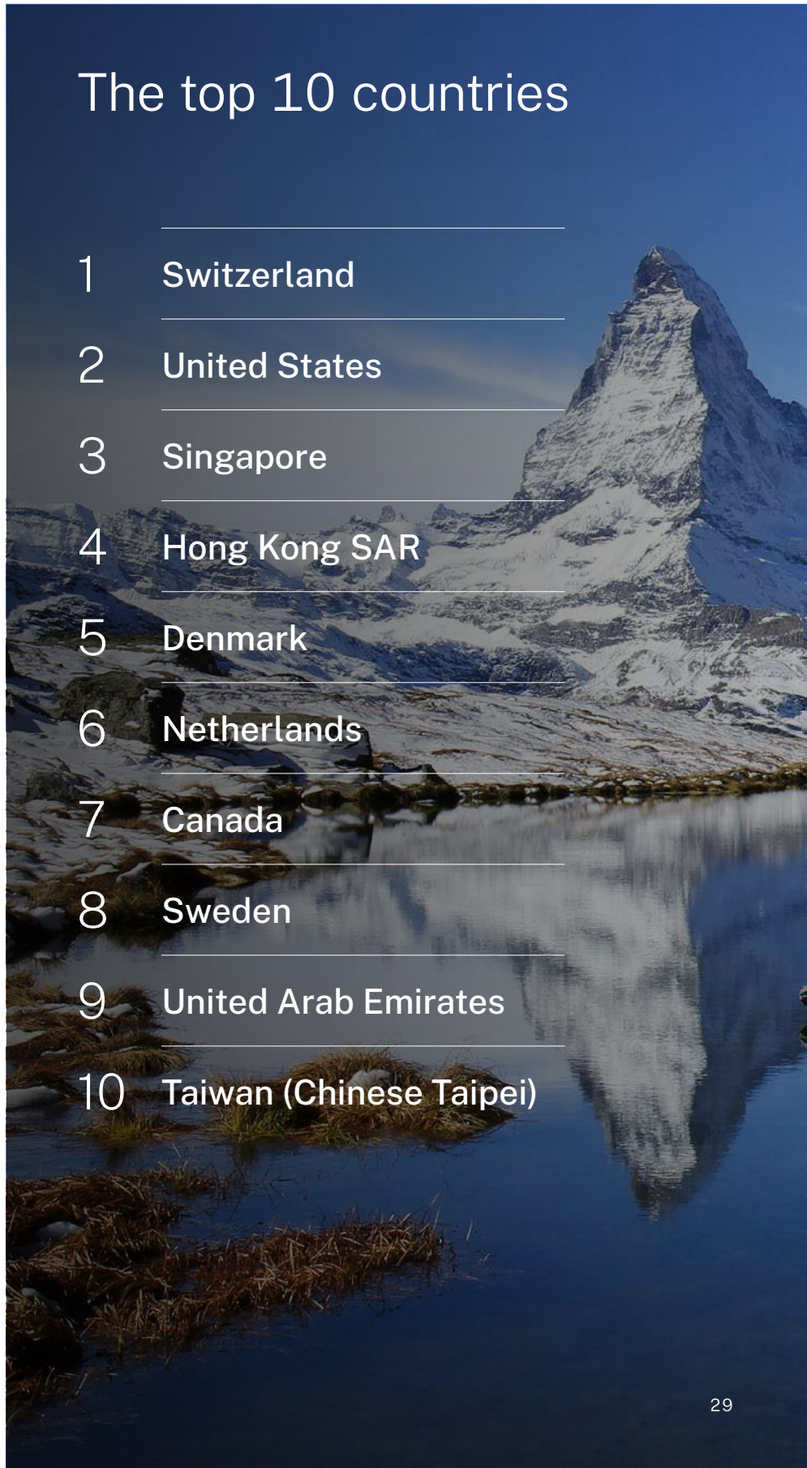
An analysis of the 2025 World Digital Competitiveness Ranking's Top 10

Switzerland climbs to the top of the 2025 edition of IMD's World Digital Competitiveness Ranking (WDCR), advancing one position from the previous year. It is followed by the US, which makes a significant leap of two positions to claim second place, and Singapore, which moves down two spots to complete this year's podium. Hong Kong SAR continues its ascent, gaining three positions to rank fourth, while Denmark slips two places to fifth. The Netherlands shows a solid improvement, moving up two positions to sixth overall. A notable new entrant to the top 10 is Canada, which jumps an impressive six positions to rank seventh. Sweden, however, experiences a decline, dropping three spots to eighth. The United Arab Emirates also enters the top 10 for the first time, climbing two positions to ninth. Finally, Taiwan (Chinese Taipei) moves down one position to complete the top 10. Korea Republic (previously sixth) and Norway (previously 10th) drop out of the top 10 in 2025, losing nine and three positions, respectively.

Switzerland secures the top spot in the 2025 WDCR, driven by its world-leading performance in the Knowledge factor, where it maintains first position, and a significant three-position jump in the Future Readiness factor to second place. While its Technology factor ranking saw a slight decline of three positions to seventh, the country's overall profile remains exceptionally strong and balanced. At the sub-factor level, Switzerland demonstrates leading performance in Talent (second), Training & Education (fifth), and Business Agility (third). Its ascent in Future Readiness is underpinned by improvements across its components, showcasing a society and business environment that is highly prepared for digital transformation. Switzerland's key strengths are deeply embedded in its human capital and institutional quality. It ranks first globally for the quality of employee training, the effectiveness of its scientific research legislation, its robust intellectual property rights, and its unparalleled capacity for knowledge transfer between companies and universities. However, the slight dip in the Technology factor can be attributed to relative declines in the Regulatory Framework (seventh, down from second) and Capital (15th, down from 11th) sub-factors. Specific areas for improvement include enforcing contracts, where Switzerland ranks 40th, and the penetration of wireless broadband, where it places a surprisingly low 55th.

The US makes a significant leap into second place overall, climbing two positions from 2024. This strong performance is driven by its undisputed leadership in the Technology factor, where it ranks first globally, and a strong showing in the Knowledge (sixth) and Future Readiness (eighth) factors. The US's core strength in Technology is built on its top-ranked Capital sub-factor, which is fueled by the world's largest pool of AI private investment (first), readily available funding for technological development (sixth), and a vibrant venture capital market as perceived by its executives (fourth). Its natural leadership in the Scientific Concentration sub-factor (second) is evidenced by top five ranks in five out of seven indicators, including second positions in both AI-related patent publications and the number of robots in education and R&D. At the indicator level, the US displays many strengths, including the world's largest volume of internet retailing (first), the highest protection against software piracy (first), and the world's best computer science education index (first). However, the country's overall performance is moderated by notable weaknesses in areas related to social adaptation and talent accessibility. It ranks poorly for its attitudes toward globalization (61st) and faces challenges with its immigration laws, which are perceived as a barrier to attracting talent (ranking 64th). Other areas for improvement include the quality of employee training (39th) and public expenditure on education (14th), suggesting that while the nation excels at high-end innovation, it could face future challenges linked to an inadequate framework for talent attraction and retention.

After leading the ranking in 2024, **Singapore** slides to third position in the 2025 WDCR. Despite this shift, it remains a digital powerhouse, securing top-tier rankings across all three factors: Knowledge (fourth), Technology (second), and Future Readiness (sixth). Singapore's performance is remarkably balanced, ranking in the top 10 for six of the nine sub-factors, and demonstrates exceptional strength in its Regulatory Framework (first), a testament to its business-friendly digital environment. At the indicator level, Singapore's strengths are widespread. It tops the number of high-tech patent grants per capita worldwide (first) and achieves the second rank for both its PISA math educational



assessment scores and the effectiveness of its banking and financial services. Additionally, Singapore demonstrates high levels of institutional support for IT Integration in its economy (sixth) with strong performances in E-government scores (third) and the government's cyber security capacity (third). Its business environment is further characterized by highly agile companies (ninth) and a positive attitude towards globalization (eighth). The decline in its overall rank can be mostly attributed to Singapore's weaker performance across all three sub-factors in Future Readiness, including a 10-position drop in both the Adaptive Attitudes and Business Agility sub-factors. Such results can be explained by lagging levels of internet retailing (28th), low perceptions of firm flexibility and adaptability (26th), low investment in telecommunications (61st). Other persistent weaknesses include its low total public expenditure on education (63rd) and a comparatively low proportion of female researchers (46th).

Hong Kong SAR continues its impressive upward trajectory in digital competitiveness, climbing three places to rank fourth overall. This strong performance in 2025 is built on top five positions in the Technology (third) and Knowledge (fifth) factors, complemented by a solid 10th place in Future Readiness, a five-position increase from the previous year. Hong Kong's technological prowess is highlighted by its first place ranking in the Technological Framework and Adaptive Attitudes sub-factors, as well as top 10 positions in the Talent (fifth), Training & Education (third), and Business Agility (Seventh) sub-factors. Hong Kong demonstrates world-leading scores in the Talent sub-factor, with top ranks in PISA math scores (fourth), the international experience of its managers (sixth), and scientific and technical employment (seventh). Its digital competitiveness is further supported by its large proportion of high-tech exports (second) coupled with the world's highest percentage of graduates in the sciences (first). At the indicator level, Hong Kong excels in several key areas, including the ease of starting a business (fourth), and the quality of its banking and financial services (eighth). Its Adaptive Attitudes scores are also a major asset, ranking first globally in this sub-factor, driven by the second highest smartphone possession rate and a highly positive attitude toward globalization (second). Despite these strengths, Hong Kong continues to fare poorly under the IT Integration sub-factor (29th), particularly in areas linked to institutional strength as demonstrated by low scores concerning government cybersecurity capacity (44th) and the legal framework for privacy protection (49th).

Denmark slips two positions to fifth in the 2025 ranking but remains one of the world's most digitally advanced economies. Its performance is balanced, with top 10 rankings in all three factors: Future Readiness (first), Technology (fifth), and Knowledge (ninth). Denmark's top position in Future Readiness is a testament to its highly adaptive society and agile business sector. It leads the world in E-Participation (first) and E-Government (first), demonstrating a seamless integration of digital tools into civic and public life. The Business Agility sub-factor (second) is another major strength, with Danish companies ranking fourth for their agility and second for their use of big data and analytics according to executives. In the Technology factor, Denmark excels in its Regulatory Framework (second) and boasts the highest number of secure internet servers per capita globally (first). The country's strengths are further evidenced by its top ranking for country credit rating and the quality of employee training (second). The minor drop in the overall ranking is partly due to a relative decline in the Knowledge factor, where weaknesses persist in the number of graduates in sciences (25th) and the proportion of female researchers (35th). Scientific Concentration appears to be a consistent area for improvement, with weak scores in R&D productivity by publication (47th) and a low number of high-tech patent grants (35th).

The Netherlands gains two ranks to secure sixth place in 2025. This advancement is driven by consistent improvements across all three digital factors, with the biggest gain achieved in Technology (fourth, up from eighth) followed by Future Readiness (fourth, up from seventh) and a solid seventh place in the Knowledge factor (up from ninth). The country's technological infrastructure is world-class, reflected in its sixth place rank for the Technological Framework sub-factor, which includes having the third most secure internet servers per capita. The Netherlands also boasts an exceptional environment for Capital, ranking third in this sub-factor, supported by the second largest IT & media stock market capitalization as a percentage of GDP. In Future Readiness, the country excels in Adaptive Attitudes (third) and IT Integration (ninth), with its population showing a highly positive attitude towards globalization (third) and a high degree of tablet possession (ninth). The Knowledge factor is bolstered by the Talent sub-factor (sixth), with managers possessing significant international experience (fourth) and the economy demonstrating a strong ability to attract foreign highly skilled personnel (seventh). Despite these strengths, the Netherlands shows room for improvement in Training & Education (25th), particularly concerning the quality of employee training (16th). Other weaknesses include a relatively low number of graduates in the sciences (45th) of which few are women (49th).

Canada makes a remarkable entry into the top 10, jumping six positions to seventh place overall. This significant leap is primarily fueled by a substantial improvement in the Future Readiness factor, climbing 10 positions to ninth, and in the Knowledge factor, where it climbs from sixth to second place. At the sub-factor level, Canada demonstrates world-leading performances in Training & Education (first), Talent (third), and IT Integration (fifth). The country ranks second for the percentage of women with degrees and sixth for higher education achievement, showcasing a highly educated workforce. The country excels in talent appeal, with a high net flow of international students (fifth) and a strong ability to attract foreign highly skilled personnel (ninth), in part due to its high levels of scientific and technical employment (third). In the Technology factor, Canada showcases a dynamic environment that attracts capital (second in the sub-factor) with significant private investment in AI (fifth) and access to venture capital that satisfies business executives (seventh). Further strengths at the indicator level include the government's cyber security capacity (fourth), and the knowledge transfer occurring in the economy (third). Canada's primary weaknesses lie in specific infrastructure indicators, such as wireless broadband penetration (59th) or its low proportion of high-tech exports (33rd). Further improvements could also be made in contract enforcement (53rd) and the number of AI policies passed into law (32nd).

Sweden experiences a three-position drop to eighth place in the 2025 ranking. Despite this decline, it retains strong digital attributes across all digital factors, particularly in Knowledge where it ranks third and achieves top 10 positions in all three subfactors. Sweden's most notable attributes include high public expenditure on education (third), high quality employee training (fourth), and its scientific and technical employment (first). In the

Technology factor, Sweden remains 10th, showcasing strengths in intellectual property rights (11th), its banking and financial services (fourth), the level of AI investment (fourth) as well as the country's credit rating (first). However, Sweden's overall rank was impacted by a sharp decline in the Future Readiness factor (down to 11th from fourth). The most notable drop is observed in the Business Agility sub-factor, falling from ninth to 16th as a result primarily of declining business sentiment relating to the detection of opportunities and threats (41st) and entrepreneurial fear of failure (23rd). At the indicator level, while the country remains a leader in the use of big data and analytics (eighth), perceptions of company agility have weakened (16th). Other challenges include a relatively low number of female researchers (38th) and low investment in telecommunications (53rd), which could hinder future infrastructure development.

The United Arab Emirates (UAE) enters the top 10 for the first time, climbing two spots to ninth place. This achievement is a testament to its focused strategy on digital transformation, reflected in outstanding performances in the Future Readiness (fifth) and Technology (sixth) factors. The UAE's key strength lies in its world-leading Talent sub-factor (first), where it ranks first for the international experience of its managers, first for digital/technological skills, and second for attracting foreign highly skilled personnel. This ability to attract and retain top global talent is the foundation of the UAE's digital economy. In the Technology factor, the UAE excels in its Regulatory Framework (fourth) and Capital environment (ninth). Its business-friendly policies include immigration laws that are conducive to a more productive economy (second) and the development and application of technology (third). Further strengths include the quality of public-private partnerships (first) and the highly positive attitudes of the business world to globalization (fourth). Despite these strengths, the UAE's performance in the Knowledge factor (12th) is held back by a weaker Scientific Concentration sub-factor (34th), performing relatively lower in R&D expenditure and personnel per capita compared to other top digital economies. At the institutional level, further improvements should be considered in increasing total public spending on education (51st) as well as a sharper focus on passing AI policies into law (57th) and implementing privacy protection laws (40th) to increase the general level of cyber security of the population.

Taiwan (Chinese Taipei) completes this year's top 10, though slipping one position from 2024. It continues to be a digital leader, particularly in the Future Readiness factor, where it ranks an impressive third globally. This is driven by its world-leading Business Agility sub-factor (first), with its companies ranking second for agility and third for their use of big data and analytics. Taiwan also demonstrates strengths in the Technology factor (11th), supported by a top-tier capital environment (fifth) that includes the world's largest IT & media stock market capitalization as a percentage of GDP (first). Its technological prowess is further highlighted by its high rank for high-tech exports (fourth). The Knowledge factor (16th) remains the area with the most room for improvement, although it performs strongly in Training & Education (sixth) and Scientific Concentration (10th), boasting the second highest R&D personnel per capita. Key weaknesses that temper its overall rank include a low proportion of female researchers (56th), a high pupil-teacher ratio in tertiary education (51st), and persistent challenges in the regulatory space, ranking last (68th) for having AI policies passed into law, indicating a need to formalize its governance of emerging technologies.

Rankings in a Nutshell

The 2025 IMD World Digital Competitiveness Ranking

The IMD World Digital Competitiveness Ranking presents the 2025 overall ranking for the 69 economies covered by the Center. The economies are ranked from the most to the least competitive. The Scores shown to the right are actually indices (0 to 100) generated for the unique purpose of constructing charts and graphics. The final column shows the improvement or decline from the previous year.

2025 Digital Competitiveness Ranking

		Score	
01	Switzerland	100.00	↗ 1
02	USA	99.29	↗ 2
03	Singapore	99.18	↙ 2
04	Hong Kong SAR	97.79	↗ 3
05	Denmark	97.23	↙ 2
06	Netherlands	96.82	↗ 2
07	Canada	96.19	↗ 6
08	Sweden	95.42	↙ 3
09	UAE	93.38	↗ 2
10	Taiwan (Chinese Taipei)	93.12	↙ 1
11	Finland	91.12	↗ 1
12	China	87.79	↗ 2
13	Norway	87.34	↙ 3
14	Iceland	87.28	↗ 5
15	Korea Rep.	86.55	↙ 9
16	Ireland	85.54	↗ 1
17	Lithuania	84.30	↗ 5
18	Germany	84.25	↗ 5
19	United Kingdom	83.65	↙ 1
20	Qatar	82.35	↗ 6
21	France	81.91	↙ 1
22	Saudi Arabia	80.09	↗ 5
23	Australia	79.90	↙ 8
24	Austria	79.85	↗ 1
25	Belgium	78.52	↙ 4
26	Estonia	77.84	↙ 2
27	Luxembourg	76.68	↗ 2
28	New Zealand	75.67	↗ 5
29	Spain	75.43	↙ 1
30	Japan	74.92	↗ 1
31	Latvia	74.87	↗ 7
32	Bahrain	74.65	↙ 2
33	Portugal	71.29	↗ 2
34	Malaysia	71.07	↗ 2
35	Czech Republic	71.06	↙ 3
36	Oman	70.31	-
37	Puerto Rico	69.35	↗ 7
38	Thailand	68.95	↙ 1
39	Kazakhstan	68.29	↙ 5
40	Italy	65.65	-
41	Slovenia	65.06	-
42	Kuwait	64.92	↗ 3
43	Chile	64.65	↙ 1
44	Jordan	60.33	↗ 6
45	Poland	60.22	↙ 6
46	Hungary	60.14	↗ 7
47	Romania	59.39	-
48	Cyprus	58.87	-
49	Greece	57.30	-
50	India	57.00	↗ 1
51	Indonesia	56.76	↙ 8
52	Croatia	55.18	↙ 6
53	Brazil	51.63	↗ 4
54	South Africa	51.34	-
55	Colombia	50.95	↗ 3
56	Philippines	50.87	↗ 5
57	Slovak Republic	50.72	↙ 5
58	Bulgaria	49.53	↙ 2
59	Mexico	49.29	-
60	Argentina	49.02	↗ 2
61	Botswana	48.30	↙ 1
62	Kenya	46.58	-
63	Türkiye	43.94	↙ 8
64	Peru	42.78	↙ 1
65	Ghana	42.57	-
66	Namibia	40.07	-
67	Mongolia	39.91	↙ 3
68	Nigeria	34.55	↙ 2
69	Venezuela	20.49	↙ 2

The IMD World Digital Competitiveness Ranking Methodology

The IMD World Digital Competitiveness Ranking (WDCR) analyzes and ranks the extent to which countries adopt and explore digital technologies leading to transformation in government practices, business models and society in general.

As in the case of the IMD World Competitiveness Ranking, we assume that digital transformation takes place primarily at enterprise level (whether private or state-owned) but it also occurs at the government and society levels.

Based on our research, the methodology of the WDCR ranking defines digital competitiveness into three main factors:

Knowledge

Technology

Future readiness

In turn, each of these factors is divided into 3 sub-factors which highlight every facet of the areas analyzed. Altogether, the WDCR features 9 such sub-factors. These 9 sub-factors comprise 61 criteria, although each sub-factor does not necessarily have the same number of criteria (for example, it takes more criteria to assess Training and Education than to evaluate IT integration).

Each sub-factor, independently of the number of criteria it contains, has the same weight in the overall consolidation of results, that is approximately 11.1% (100 ÷ 9 ~ 11.1).

Criteria can be hard data, which analyze digital competitiveness as it can be measured (e.g. Internet bandwidth speed) or soft data, which analyze competitiveness as it can be perceived (e.g. Agility of companies). Hard criteria represent a weight of 2/3 in the overall ranking whereas the survey data represent a weight of 1/3.

The 61 criteria include 25 new indicators which are only used in the assessment of the WDCR ranking. The rest of the indicators are shared with the IMD World Competitiveness Ranking.

In addition, two criteria are for background information only, which means that they are not used in calculating the overall competitiveness ranking (i.e., Population and GDP).

Finally, aggregating the results of the 9 sub-factors makes the total consolidation, which leads to the overall ranking of the WDCR.

What is the IMD World Digital Competitiveness Ranking?

Digital Competitiveness Factors and Sub-factors

Knowledge

Know-how necessary to discover, understand and build new technologies.

- Talent
- Training and Education
- Scientific Concentration

Technology

Overall context that enables the development of digital technologies.

- Regulatory Framework
- Capital
- Technological Framework

Future Readiness

Level of country preparedness to exploit digital transformation.

- Adaptive Attitudes
- Business Agility
- IT Integration

Table 1: Sample size (2021-2025)

Years	2021	2022	2023	2024	2025
Countries	63	63	64	67	69

Computing the Rankings

Hard Data

Statistics from international, regional, and national sources

40 Criteria

Survey Data

International Panel of Experts Executives Opinion Survey

21 Criteria

Compute STD Values

Individually, for all criteria used in the ranking

61 Criteria

Overall Rankings

Aggregates the STD values for all the 61 criteria

Factors Ranking

Knowledge, Technology, Future Readiness

Criteria Ranking

Each of the 61 criteria is individually ranked for the countries

The 2025 IMD World Digital Competitiveness Ranking

Selected breakdown

Europe - Middle East - Africa

		Score
01	Switzerland	100.00
02	Denmark	97.23
03	Netherlands	96.82
04	Sweden	95.42
05	UAE	93.38
06	Finland	91.12
07	Norway	87.34
08	Iceland	87.28
09	Ireland	85.54
10	Lithuania	84.30
11	Germany	84.25
12	United Kingdom	83.65
13	Qatar	82.35
14	France	81.91
15	Saudi Arabia	80.09
16	Austria	79.85
17	Belgium	78.52
18	Estonia	77.84
19	Luxembourg	76.68
20	Spain	75.43
21	Latvia	74.87
22	Bahrain	74.65
23	Portugal	71.29
24	Czech Republic	71.06
25	Oman	70.31
26	Kazakhstan	68.29
27	Italy	65.65
28	Slovenia	65.06
29	Kuwait	64.92
30	Jordan	60.33
31	Poland	60.22
32	Hungary	60.14
33	Romania	59.39
34	Cyprus	58.87
35	Greece	57.30
36	Croatia	55.18
37	South Africa	51.34
38	Slovak Republic	50.72
39	Bulgaria	49.53
40	Botswana	48.30
41	Kenya	46.58
42	Türkiye	43.94
43	Ghana	42.57
44	Namibia	40.07
45	Nigeria	34.55

Asia - Pacific

		Score
01	Singapore	99.18
02	Hong Kong SAR	97.79
03	Taiwan (Chinese Taipei)	93.12
04	China	87.79
05	Korea Rep.	86.55
06	Australia	79.90
07	New Zealand	75.67
08	Japan	74.92
09	Malaysia	71.07
10	Thailand	68.95
11	India	57.00
12	Indonesia	56.76
13	Philippines	50.87
14	Mongolia	39.91

The Americas

		Score
01	USA	99.29
02	Canada	96.19
03	Puerto Rico	69.35
04	Chile	64.65
05	Brazil	51.63
06	Colombia	50.95
07	Mexico	49.29
08	Argentina	49.02
09	Peru	42.78
10	Venezuela	20.49

Selected breakdown

GDP per capita greater than $20,000

		Score
01	Switzerland	100.00
02	USA	99.29
03	Singapore	99.18
04	Hong Kong SAR	97.79
05	Denmark	97.23
06	Netherlands	96.82
07	Canada	96.19
08	Sweden	95.42
09	UAE	93.38
10	Taiwan (Chinese Taipei)	93.12
11	Finland	91.12
12	Norway	87.34
13	Iceland	87.28
14	Korea Rep.	86.55
15	Ireland	85.54
16	Lithuania	84.30
17	Germany	84.25
18	United Kingdom	83.65
19	Qatar	82.35
20	France	81.91
21	Saudi Arabia	80.09
22	Australia	79.90
23	Austria	79.85
24	Belgium	78.52
25	Estonia	77.84
26	Luxembourg	76.68
27	New Zealand	75.67
28	Spain	75.43
29	Japan	74.92
30	Latvia	74.87
31	Bahrain	74.65
32	Portugal	71.29
33	Czech Republic	71.06
34	Oman	70.31
35	Puerto Rico	69.35
36	Italy	65.65
37	Slovenia	65.06
38	Kuwait	64.92
39	Poland	60.22
40	Hungary	60.14
41	Romania	59.39
42	Cyprus	58.87
43	Greece	57.30
44	Croatia	55.18
45	Slovak Republic	50.72

GDP per capita less than $20,000

		Score
01	China	87.79
02	Malaysia	71.07
03	Thailand	68.95
04	Kazakhstan	68.29
05	Chile	64.65
06	Jordan	60.33
07	India	57.00
08	Indonesia	56.76
09	Brazil	51.63
10	South Africa	51.34
11	Colombia	50.95
12	Philippines	50.87
13	Bulgaria	49.53
14	Mexico	49.29
15	Argentina	49.02
16	Botswana	48.30
17	Kenya	46.58
18	Türkiye	43.94
19	Peru	42.78
20	Ghana	42.57
21	Namibia	40.07
22	Mongolia	39.91
23	Nigeria	34.55
24	Venezuela	20.49

Selected breakdown

Population over 20 million

		Score
01	USA	99.29
02	Canada	96.19
03	Taiwan (Chinese Taipei)	93.12
04	China	87.79
05	Korea Rep.	86.55
06	Germany	84.25
07	United Kingdom	83.65
08	France	81.91
09	Saudi Arabia	80.09
10	Australia	79.90
11	Spain	75.43
12	Japan	74.92
13	Malaysia	71.07
14	Thailand	68.95
15	Kazakhstan	68.29
16	Italy	65.65
17	Chile	64.65
18	Poland	60.22
19	India	57.00
20	Indonesia	56.76
21	Brazil	51.63
22	South Africa	51.34
23	Colombia	50.95
24	Philippines	50.87
25	Mexico	49.29
26	Argentina	49.02
27	Kenya	46.58
28	Türkiye	43.94
29	Peru	42.78
30	Ghana	42.57
31	Nigeria	34.55
32	Venezuela	20.49

Population under 20 million

		Score
01	Switzerland	100.00
02	Singapore	99.18
03	Hong Kong SAR	97.79
04	Denmark	97.23
05	Netherlands	96.82
06	Sweden	95.42
07	UAE	93.38
08	Finland	91.12
09	Norway	87.34
10	Iceland	87.28
11	Ireland	85.54
12	Lithuania	84.30
13	Qatar	82.35
14	Austria	79.85
15	Belgium	78.52
16	Estonia	77.84
17	Luxembourg	76.68
18	New Zealand	75.67
19	Latvia	74.87
20	Bahrain	74.65
21	Portugal	71.29
22	Czech Republic	71.06
23	Oman	70.31
24	Puerto Rico	69.35
25	Slovenia	65.06
26	Kuwait	64.92
27	Jordan	60.33
28	Hungary	60.14
29	Romania	59.39
30	Cyprus	58.87
31	Greece	57.30
32	Croatia	55.18
33	Slovak Republic	50.72
34	Bulgaria	49.53
35	Botswana	48.30
36	Namibia	40.07
37	Mongolia	39.91

Selected breakdown

KNOWLEDGE

Know-how necessary to discover, understand and build new technologies

		Score		
01	Switzerland	98.22	-	
02	Canada	94.88	↗	4
03	Sweden	94.41	-	
04	Singapore	92.91	↙	2
05	Hong Kong SAR	92.29	-	
06	USA	90.60	↙	2
07	Netherlands	87.23	↗	2
08	Korea Rep.	86.71	-	
09	Denmark	85.93	↙	2
10	Finland	85.61	↗	2
11	United Kingdom	85.21	↙	1
12	UAE	82.95	↗	2
13	Germany	82.89	↗	7
14	China	82.42	↗	1
15	Austria	81.45	↗	6
16	Taiwan (Chinese Taipei)	80.78	↗	3
17	Norway	80.26	-	
18	Australia	79.46	↙	5
19	Ireland	78.54	↙	3
20	Belgium	77.16	↙	2
21	France	75.92	↗	1
22	Lithuania	74.62	↗	1
23	Japan	74.61	↗	8
24	Luxembourg	72.72	-	
25	Spain	71.57	↗	1
26	Saudi Arabia	70.17	↗	1
27	Estonia	68.70	↙	2
28	Portugal	67.13	↗	1
29	Malaysia	66.82	↗	5
30	New Zealand	66.46	↗	9
31	Iceland	66.17	↙	1
32	Slovenia	66.15	↙	4
33	Czech Republic	65.40	↙	1
34	Kazakhstan	63.66	↙	1
35	Latvia	62.62	↗	3
36	Qatar	61.23	-	
37	Thailand	60.62	↗	3
38	Bahrain	59.75	↙	3
39	Italy	59.18	↗	2
40	Poland	58.10	↙	3
41	Oman	56.60	-	
42	Hungary	55.88	↗	4
43	Kuwait	55.68	↗	5
44	Cyprus	54.68	↙	1
45	Croatia	52.51	↙	3
46	India	51.07	↙	1
47	Chile	50.84	-	
48	Romania	50.71	↗	3
49	Greece	50.64	↗	1
50	Jordan	49.41	↗	7
51	Puerto Rico	49.04	↗	1
52	Slovak Republic	49.01	↙	8
53	Colombia	47.62	↗	2
54	Brazil	45.07	↗	2
55	Bulgaria	44.86	↗	4
56	Mexico	44.12	↗	2
57	Kenya	43.78	-	
58	South Africa	41.88	↙	4
59	Namibia	41.76	-	
60	Türkiye	41.04	-	
61	Botswana	40.29	↙	12
62	Indonesia	39.45	↙	9
63	Argentina	38.88	↙	2
64	Mongolia	37.97	↙	2
65	Philippines	36.03	↙	1
66	Peru	34.75	↙	3
67	Nigeria	27.98	↙	2
68	Ghana	27.22	↙	2
69	Venezuela	15.65	↙	2

Selected breakdown

TECHNOLOGY

Overall context that enables the development of digital technologies

		Score		
01	USA	100.00	↗	1
02	Singapore	96.36	↙	1
03	Hong Kong SAR	94.60		-
04	Netherlands	92.21	↗	4
05	Denmark	90.62	↗	1
06	UAE	88.74	↗	3
07	Switzerland	88.68	↙	3
08	Iceland	88.24	↗	4
09	Canada	86.68	↗	4
10	Sweden	86.56		-
11	Taiwan (Chinese Taipei)	86.42	↙	4
12	Finland	84.70	↗	4
13	Qatar	82.97	↗	6
14	France	81.83	↗	4
15	China	81.58		-
16	Norway	80.80	↙	11
17	Ireland	77.37	↗	3
18	United Kingdom	76.48	↗	3
19	Puerto Rico	76.17	↗	19
20	Germany	75.91	↗	9
21	Lithuania	75.41	↗	7
22	Australia	74.61	↙	11
23	Saudi Arabia	74.55	↗	4
24	New Zealand	74.06	↙	7
25	Luxembourg	72.76	↙	3
26	Bahrain	71.83	↗	7
27	Japan	71.81	↙	1
28	Belgium	71.56	↙	3
29	Thailand	71.34	↙	6
30	Korea Rep.	71.03	↙	16
31	Austria	70.90	↗	1
32	Latvia	70.50	↗	10
33	Estonia	70.12	↙	3
34	Malaysia	68.38	↗	1
35	Spain	66.83	↙	4
36	Portugal	66.13		-
37	Hungary	65.65	↗	6
38	Oman	65.47		-
39	Czech Republic	64.82	↙	5
40	Kuwait	63.11	↗	4
41	Chile	59.55	↙	2
42	Kazakhstan	58.86	↗	4
43	Slovenia	58.74	↗	4
44	Romania	57.76	↗	6
45	Italy	57.15	↙	4
46	Cyprus	55.70	↗	5
47	Greece	55.54	↗	1
48	Indonesia	54.34	↙	8
49	Poland	54.34	↙	12
50	Croatia	54.04	↙	5
51	Jordan	53.87	↗	1
52	India	52.45	↗	1
53	Bulgaria	52.28	↙	4
54	Philippines	48.72	↗	2
55	Botswana	46.98	↗	2
56	Slovak Republic	44.15	↗	3
57	South Africa	43.42	↙	3
58	Brazil	41.33	↗	2
59	Mexico	38.66	↗	3
60	Ghana	38.22	↗	6
61	Kenya	37.86		-
62	Peru	35.61	↗	2
63	Mongolia	35.40	↙	8
64	Namibia	35.02		-
65	Colombia	34.68	↙	4
66	Nigeria	32.91	↙	3
67	Türkiye	31.76	↙	9
68	Argentina	30.28	↙	3
69	Venezuela	0.00	↙	2

Selected breakdown

FUTURE READINESS

Level of country preparedness to exploit digital transformation

		Score		
01	Denmark	97.01	↗	1
02	Switzerland	94.96	↗	3
03	Taiwan (Chinese Taipei)	94.02	↗	3
04	Netherlands	92.89	↗	3
05	UAE	90.31	↗	7
06	Singapore	90.12	↙	5
07	Iceland	89.27	↗	9
08	USA	89.15	-	-
09	Canada	88.86	↗	10
10	Hong Kong SAR	88.35	↗	5
11	Sweden	87.15	↙	7
12	Finland	84.92	↙	3
13	Lithuania	84.74	↗	4
14	Qatar	84.72	↗	7
15	Korea Rep.	83.77	↙	12
16	Norway	82.82	↙	6
17	Ireland	82.56	↙	6
18	China	81.23	↙	4
19	Saudi Arabia	77.41	↗	9
20	Estonia	76.57	↙	2
21	Germany	75.79	↗	1
22	Bahrain	74.21	↗	2
23	Latvia	73.35	↗	11
24	United Kingdom	71.11	↗	1
25	Oman	70.73	-	-
26	France	69.84	↙	3
27	Spain	69.77	↗	2
28	Austria	69.07	↗	3
29	Belgium	68.69	↙	3
30	New Zealand	68.36	↗	9
31	Australia	67.49	↙	11
32	Luxembourg	66.42	↗	8
33	Chile	65.42	-	-
34	Czech Republic	64.82	↙	2
35	Puerto Rico	64.70	↗	9
36	Kazakhstan	64.20	↙	9
37	Italy	62.48	↙	2
38	Portugal	62.45	↙	1
39	Japan	60.19	↙	1
40	Malaysia	59.87	↙	4
41	Argentina	59.74	↗	6
42	Jordan	59.58	↗	1
43	Indonesia	58.36	↙	13
44	Kuwait	57.84	↗	1
45	Thailand	56.76	↙	4
46	Colombia	52.41	↗	3
47	Slovenia	52.15	↗	1
48	Romania	51.56	↗	3
49	South Africa	50.56	↗	1
50	Brazil	50.36	↗	3
51	Poland	50.07	↙	9
52	Philippines	49.73	↗	6
53	India	49.35	↙	1
54	Cyprus	48.09	-	-
55	Greece	47.56	↗	1
56	Mexico	46.94	↙	1
57	Ghana	44.11	↗	8
58	Slovak Republic	40.86	↙	1
59	Türkiye	40.86	↙	13
60	Croatia	40.84	↙	1
61	Hungary	40.75	↗	2
62	Kenya	39.94	-	-
63	Peru	39.83	↙	3
64	Botswana	39.48	↙	2
65	Bulgaria	33.29	↙	4
66	Mongolia	28.22	↙	2
67	Venezuela	27.66	↙	1
68	Namibia	25.29	-	-
69	Nigeria	24.60	↙	2

Factor Rankings: five-year overview

	OVERALL					KNOWLEDGE					TECHNOLOGY					FUTURE READINESS				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
Argentina	61	59	61	62	60	55	58	62	61	63	62	62	63	65	68	52	46	49	47	41
Australia	20	14	16	15	23	19	14	15	13	18	18	15	18	11	22	22	17	20	20	31
Austria	16	18	22	25	24	10	13	16	21	15	32	36	35	32	31	16	13	19	31	28
Bahrain	-	32	38	30	32	-	34	36	35	38	-	23	30	33	26	-	36	46	24	22
Belgium	26	23	15	21	25	21	21	12	18	20	23	24	19	25	28	26	25	16	26	29
Botswana	63	61	60	60	61	64	55	52	49	61	63	59	52	57	55	63	61	63	62	64
Brazil	51	52	57	57	53	51	51	57	56	54	55	55	60	60	58	45	47	52	53	50
Bulgaria	52	48	55	56	58	53	48	53	59	55	51	51	56	49	53	55	50	58	61	65
Canada	13	10	11	13	07	07	03	04	06	02	15	14	13	13	09	15	11	11	19	09
Chile	39	41	42	42	43	49	50	47	47	47	35	41	38	39	41	36	33	38	33	33
China	15	17	19	14	12	06	17	21	15	14	20	18	22	15	15	17	15	13	14	18
Colombia	59	60	62	58	55	56	57	54	55	53	60	61	62	61	65	53	56	60	49	46
Croatia	55	43	44	46	52	47	40	40	42	45	50	42	42	45	50	60	48	50	59	60
Cyprus	43	45	51	48	48	39	39	48	43	44	53	52	53	51	46	34	39	53	54	54
Czech Republic	33	33	24	32	35	35	32	24	32	33	37	35	26	34	39	37	29	27	32	34
Denmark	04	01	04	03	05	08	06	09	07	09	09	07	07	06	05	02	01	03	02	01
Estonia	25	20	18	24	26	27	23	25	25	27	25	21	23	30	33	20	12	09	18	20
Finland	11	07	08	12	11	09	09	11	12	10	12	08	09	16	12	09	06	05	09	12
France	24	22	27	20	21	20	20	22	22	21	16	16	20	18	14	31	34	35	23	26
Germany	18	19	23	23	18	14	11	14	20	13	31	27	34	29	20	18	19	24	22	21
Ghana	-	-	-	65	65	-	-	-	66	68	-	-	-	66	60	-	-	-	65	57
Greece	44	50	52	49	49	45	47	51	50	49	46	47	47	48	47	43	60	57	56	55
Hong Kong SAR	02	09	10	07	04	05	07	06	05	05	01	02	02	03	03	10	18	17	15	10
Hungary	45	42	47	53	46	43	43	46	46	42	36	31	36	43	37	61	57	61	63	61
Iceland	21	21	17	19	14	33	31	32	30	31	10	11	08	12	08	25	21	14	16	07
India	46	44	49	51	50	41	46	45	45	46	44	43	50	53	52	50	42	51	52	53
Indonesia	53	51	45	43	51	60	60	60	53	62	49	45	39	40	48	48	52	43	30	43
Ireland	19	24	21	17	16	23	22	19	16	19	28	37	28	20	17	14	22	22	11	17
Italy	40	39	43	40	40	40	41	43	41	39	42	44	46	41	45	30	38	37	35	37
Japan	28	29	32	31	30	25	28	28	31	23	30	30	32	26	27	27	28	32	38	39
Jordan	49	53	50	50	44	48	53	59	57	50	43	50	48	52	51	56	55	45	43	42
Kazakhstan	32	36	34	34	39	36	30	30	33	34	40	40	41	46	42	28	30	31	27	36
Kenya	-	-	-	-	62	-	-	-	-	57	-	-	-	-	61	-	-	-	-	62
Korea Rep.	12	08	06	06	15	15	16	10	08	08	13	13	12	14	30	05	02	01	03	15
Kuwait	-	-	41	45	42	-	-	44	48	43	-	-	37	44	40	-	-	41	45	44
Latvia	37	34	40	38	31	34	36	39	38	35	34	34	43	42	32	42	32	34	34	23
Lithuania	30	25	28	22	17	26	24	23	23	22	29	32	33	28	21	33	24	28	17	13
Luxembourg	22	30	26	29	27	29	35	33	24	24	14	19	25	22	25	24	35	21	40	32
Malaysia	27	31	33	36	34	22	25	29	34	29	26	29	27	35	34	29	31	33	36	40
Mexico	56	55	54	59	59	54	52	50	58	56	57	56	58	62	59	51	53	54	55	56
Mongolia	62	62	63	64	67	58	61	56	62	64	61	60	61	55	63	62	62	62	64	66
Namibia	-	-	-	-	66	-	-	-	-	59	-	-	-	-	64	-	-	-	-	68
Netherlands	07	06	02	08	06	11	08	07	09	07	07	04	05	08	04	04	05	04	07	04
New Zealand	23	27	25	33	28	28	33	34	39	30	21	28	21	17	24	19	26	25	39	30
Nigeria	-	-	-	66	68	-	-	-	65	67	-	-	-	63	66	-	-	-	67	69
Norway	09	12	14	10	13	17	19	20	17	17	06	10	14	05	16	08	09	15	10	16
Oman	-	-	-	-	36	-	-	-	-	41	-	-	-	-	38	-	-	-	-	25
Peru	57	57	56	63	64	59	56	55	63	66	56	57	57	64	62	54	54	55	60	63
Philippines	58	56	59	61	56	63	62	63	64	65	54	49	51	56	54	57	58	59	58	52
Poland	41	46	39	39	45	38	42	37	37	40	41	46	44	37	49	39	43	40	42	51
Portugal	34	38	36	35	33	32	29	31	29	28	38	39	40	36	36	38	40	36	37	38
Puerto Rico	-	-	-	44	37	-	-	-	52	51	-	-	-	38	19	-	-	-	44	35
Qatar	29	26	29	26	20	44	38	38	36	36	19	17	16	19	13	23	23	26	21	14
Romania	50	49	48	47	47	52	49	49	51	48	47	48	49	50	44	49	51	47	51	48
Saudi Arabia	36	35	30	27	22	50	37	35	27	26	24	26	17	27	23	32	37	30	28	19
Singapore	05	04	03	01	03	04	05	03	02	04	03	01	01	01	02	11	10	10	01	06
Slovak Republic	47	47	46	52	57	46	44	42	44	52	45	53	54	59	56	46	45	48	57	58
Slovenia	35	37	37	41	41	30	26	27	28	32	39	38	45	47	43	40	41	39	48	47
South Africa	60	58	58	54	54	62	54	58	54	58	59	58	59	54	57	59	59	56	50	49
Spain	31	28	31	28	29	31	27	26	26	25	33	33	31	31	35	35	27	29	29	27
Sweden	03	03	07	05	08	02	02	05	03	03	08	05	11	10	10	06	04	08	04	11
Switzerland	06	05	05	02	01	01	01	01	01	01	11	12	10	04	07	03	07	06	05	02
Taiwan (Chinese Taipei)	08	11	09	09	10	16	18	18	19	16	02	06	03	07	11	07	08	07	06	03
Thailand	38	40	35	37	38	42	45	41	40	37	22	20	15	23	29	44	49	42	41	45
Türkiye	48	54	53	55	63	57	59	61	60	60	52	54	55	58	67	41	44	44	46	59
UAE	10	13	12	11	09	18	15	17	14	12	05	03	04	09	06	12	20	23	12	05
United Kingdom	14	16	20	18	19	13	12	13	10	11	17	25	29	21	18	13	16	18	25	24
USA	01	02	01	04	02	03	04	02	04	06	04	09	06	02	01	01	03	02	08	08
Venezuela	64	63	64	67	69	61	63	64	67	69	64	63	64	67	69	64	63	64	66	67

Sub-factor Rankings

	KNOWLEDGE			TECHNOLOGY			FUTURE READINESS			
	Talent	Training & education	Scientific concentration	Regulatory framework	Capital	Technological framework	Adaptive attitudes	Business agility	IT integration	
Argentina	46	66	57	58	68	56	46	26	46	Argentina
Australia	11	30	18	18	37	21	23	53	23	Australia
Austria	21	11	15	30	34	31	35	31	14	Austria
Bahrain	08	61	39	32	26	25	12	21	40	Bahrain
Belgium	23	22	19	22	25	39	37	22	31	Belgium
Botswana	42	58	66	52	42	61	65	45	62	Botswana
Brazil	68	56	29	59	64	53	44	57	45	Brazil
Bulgaria	58	51	54	56	51	50	59	69	60	Bulgaria
Canada	03	01	14	14	02	22	16	12	05	Canada
Chile	40	46	56	45	48	36	25	49	30	Chile
China	28	34	03	23	07	17	22	06	35	China
Colombia	62	41	55	66	59	64	52	34	58	Colombia
Croatia	55	39	45	51	38	51	56	66	56	Croatia
Cyprus	54	42	35	49	54	42	55	62	43	Cyprus
Czech Republic	29	36	28	34	33	41	43	35	24	Czech Republic
Denmark	09	13	13	02	22	04	04	02	04	Denmark
Estonia	30	10	38	29	40	27	14	36	13	Estonia
Finland	14	12	11	03	20	12	21	18	02	Finland
France	27	28	17	08	12	28	38	28	12	France
Germany	32	08	07	17	17	34	28	27	11	Germany
Ghana	52	67	67	50	66	65	61	42	63	Ghana
Greece	47	57	30	48	49	49	45	65	47	Greece
Hong Kong SAR	05	03	16	12	11	01	01	07	29	Hong Kong SAR
Hungary	48	38	36	31	50	32	68	56	37	Hungary
Iceland	22	27	42	19	23	02	02	10	19	Iceland
India	53	55	31	54	18	59	58	48	53	India
Indonesia	50	65	53	53	10	63	48	24	54	Indonesia
Ireland	16	23	21	06	41	13	10	13	28	Ireland
Italy	45	47	23	40	53	46	32	32	42	Italy
Japan	63	14	05	43	29	09	36	60	17	Japan
Jordan	57	48	41	42	31	57	57	15	50	Jordan
Kazakhstan	36	04	61	27	55	52	33	23	48	Kazakhstan
Kenya	44	63	49	44	56	68	63	44	64	Kenya
Korea Rep.	49	07	01	38	27	15	05	14	20	Korea Rep.
Kuwait	20	50	52	46	36	35	47	37	41	Kuwait
Latvia	18	29	60	21	43	30	27	29	18	Latvia
Lithuania	10	19	32	15	35	20	18	09	21	Lithuania
Luxembourg	35	09	24	16	39	26	41	30	25	Luxembourg
Malaysia	31	18	40	41	30	19	50	43	34	Malaysia
Mexico	60	59	47	64	60	55	42	51	61	Mexico
Mongolia	65	49	65	68	63	54	64	68	66	Mongolia
Namibia	43	44	69	61	58	66	66	55	68	Namibia
Netherlands	06	25	12	05	03	06	03	08	09	Netherlands
New Zealand	24	33	33	26	28	24	19	46	32	New Zealand
Nigeria	66	68	58	55	57	69	69	52	67	Nigeria
Norway	17	17	20	09	19	18	17	20	10	Norway
Oman	33	31	62	35	24	45	26	17	39	Oman
Peru	67	53	64	60	65	60	53	61	65	Peru
Philippines	56	62	63	67	46	47	40	50	57	Philippines
Poland	51	40	26	57	52	37	51	64	38	Poland
Portugal	25	37	25	20	45	43	29	59	26	Portugal
Puerto Rico	38	60	50	39	13	11	31	39	36	Puerto Rico
Qatar	15	43	51	24	06	14	24	04	22	Qatar
Romania	41	54	48	33	61	38	39	54	49	Romania
Saudi Arabia	13	24	44	13	16	44	09	25	33	Saudi Arabia
Singapore	04	21	04	01	08	03	11	11	06	Singapore
Slovak Republic	59	45	46	65	62	48	62	63	59	Slovak Republic
Slovenia	39	26	27	47	44	40	54	47	51	Slovenia
South Africa	61	52	59	62	47	58	49	58	44	South Africa
Spain	26	32	22	36	32	33	30	38	16	Spain
Sweden	07	02	08	11	04	16	13	16	03	Sweden
Switzerland	02	05	06	07	15	05	07	03	07	Switzerland
Taiwan (Chinese Taipei)	34	06	10	25	05	08	15	01	08	Taiwan (Chinese Taipei)
Thailand	37	35	43	37	21	23	34	33	55	Thailand
Türkiye	64	64	37	63	67	62	60	67	52	Türkiye
UAE	01	16	34	04	09	10	06	19	01	UAE
United Kingdom	12	20	09	28	14	29	20	41	27	United Kingdom
USA	19	15	02	10	01	07	08	05	15	USA
Venezuela	69	69	68	69	69	67	67	40	69	Venezuela

IMD World Digital Competitiveness Economy Profiles

The statistical tables are available for subscribers of IMD World Competitiveness Online.

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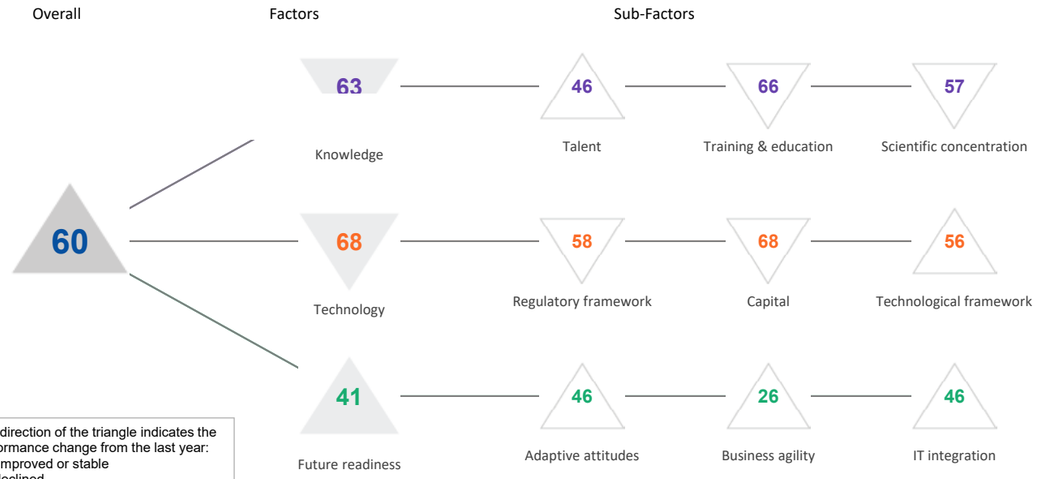
ARGENTINA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

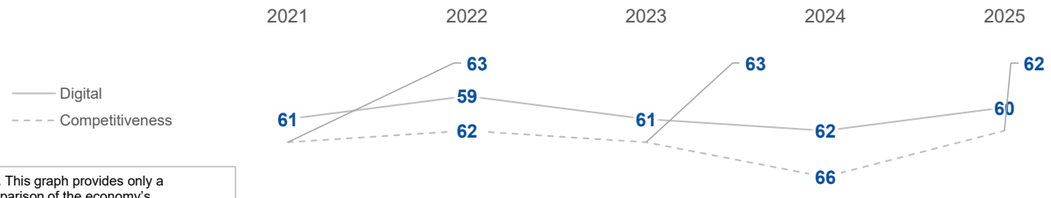


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	61	59	61	62	60
Knowledge	55	58	62	61	63
Technology	62	62	63	65	68
Future readiness	52	46	49	47	41

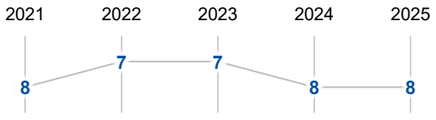
COMPETITIVENESS & DIGITAL RANKINGS



N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

THE AMERICAS (10 economies)



POPULATIONS > 20 MILLION (32 economies)

ARGENTINA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	62	61	61	62	46
Training & education	46	49	60	60	66
Scientific concentration	48	48	50	52	57

Talent	Rank
Educational assessment PISA - Math	54
International experience	41
Management of cities	57
Digital/Technological skills	54
Foreign highly skilled personnel	42
▶ Net flow of international students	23
▶ Female researchers	04
Scientific and technical employment	49

Training & education	Rank
▷ Employee training	66
Total public expenditure on education	33
Higher education achievement	60
Pupil-teacher ratio (tertiary education)	-
Graduates in Sciences	60
Women with degrees	49
Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	49
Total R&D personnel per capita	45
R&D productivity by publication	30
High-tech patent grants	56
AI-related patent publications	45
Robots in Education and R&D	37
AI articles	62

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	57	61	57	48	58
Capital	63	62	63	66	68
Technological framework	56	55	56	57	56

Regulatory framework	Rank
Starting a business	64
Enforcing contracts	52
▶ Immigration laws	03
Development & application of tech.	54
Scientific research legislation	65
Intellectual property rights	62
AI policies passed into law	52

Capital	Rank
IT & media stock market capitalization	47
Funding for technological development	65
▷ Banking and financial services	68
▷ Country credit rating	66
▷ Venture capital	67
Investment in Telecommunications	65
AI private investment	-

Technological framework	Rank
▷ Communications technology	67
Mobile broadband subscribers	54
Wireless broadband	61
Internet users	39
Internet bandwidth speed	54
High-tech exports (%)	54
Secure internet servers	47

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	50	49	55	53	46
Business agility	43	37	38	32	26
IT integration	59	53	53	53	46

Adaptive attitudes	Rank
E-Participation	53
Internet retailing	38
Tablet possession	35
Smartphone possession	43
Attitudes toward globalization	56
Flexibility and adaptability	29

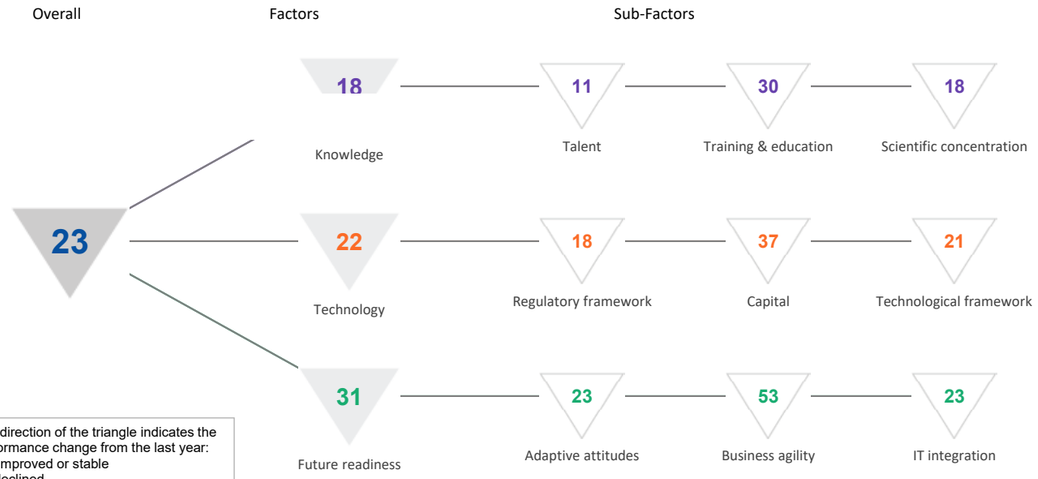
Business agility	Rank
Opportunities and threats	27
World robots distribution	36
Agility of companies	51
Use of big data and analytics	39
Knowledge transfer	51
▶ Entrepreneurial fear of failure	01

IT integration	Rank
E-Government	37
Public-private partnerships	47
Cyber security	58
Software piracy	60
Government cyber security capacity	37
▶ Privacy protection by law exists	08

AUSTRALIA

DIGITAL TRENDS - OVERALL

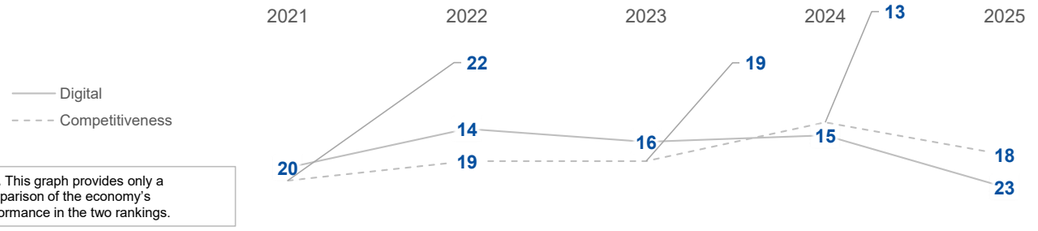
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

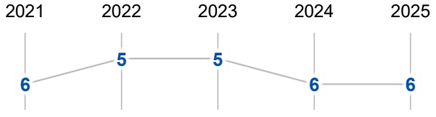
	2021	2022	2023	2024	2025
OVERALL	20	14	16	15	23
Knowledge	19	14	15	13	18
Technology	18	15	18	11	22
Future readiness	22	17	20	20	31

COMPETITIVENESS & DIGITAL RANKINGS

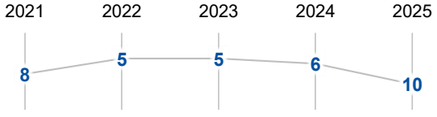


PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS > 20 MILLION (32 economies)



AUSTRALIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	08	07	08	09	11
Training & education	37	29	28	27	30
Scientific concentration	18	16	16	15	18

Talent	Rank
Educational assessment PISA - Math	16
▷ International experience	59
Management of cities	34
Digital/Technological skills	49
Foreign highly skilled personnel	15
▶ Net flow of international students	02
Female researchers	-
Scientific and technical employment	13

Training & education	Rank
▷ Employee training	60
Total public expenditure on education	21
Higher education achievement	15
Pupil-teacher ratio (tertiary education)	-
▷ Graduates in Sciences	52
Women with degrees	08
▶ Computer science education index	05

Scientific concentration	Rank
Total expenditure on R&D (%)	23
Total R&D personnel per capita	-
R&D productivity by publication	16
High-tech patent grants	31
AI-related patent publications	13
Robots in Education and R&D	19
AI articles	14

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	17	10	15	05	18
Capital	17	13	16	19	37
Technological framework	27	26	31	12	21

Regulatory framework	Rank
Starting a business	05
Enforcing contracts	06
Immigration laws	30
Development & application of tech.	38
Scientific research legislation	21
Intellectual property rights	15
AI policies passed into law	34

Capital	Rank
IT & media stock market capitalization	36
Funding for technological development	46
Banking and financial services	28
▶ Country credit rating	01
Venture capital	40
Investment in Telecommunications	45
AI private investment	19

Technological framework	Rank
Communications technology	46
▶ Mobile broadband subscribers	03
Wireless broadband	19
Internet users	13
Internet bandwidth speed	46
High-tech exports (%)	17
Secure internet servers	21

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	14	08	04	16	23
Business agility	55	40	42	38	53
IT integration	21	15	23	15	23

Adaptive attitudes	Rank
E-Participation	19
Internet retailing	06
Tablet possession	23
Smartphone possession	36
Attitudes toward globalization	38
Flexibility and adaptability	44

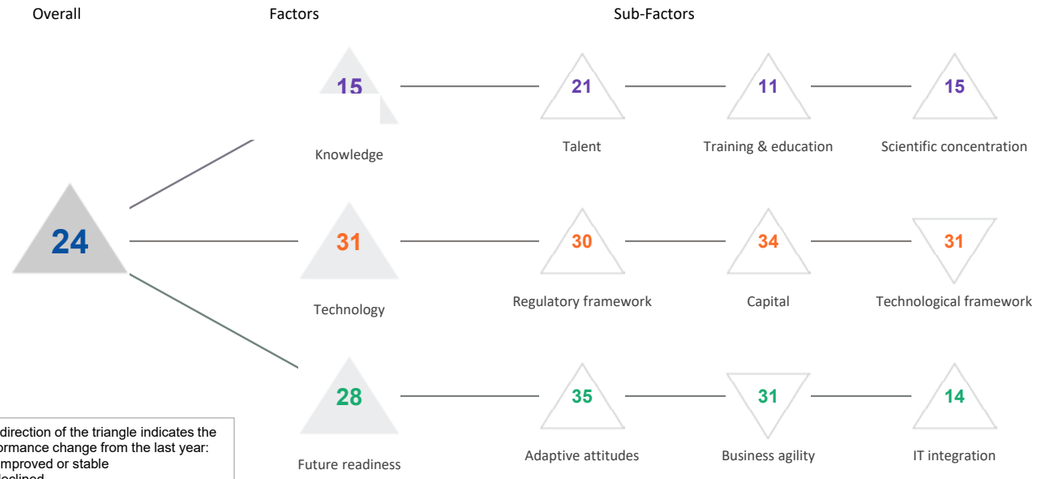
Business agility	Rank
▷ Opportunities and threats	57
World robots distribution	31
▷ Agility of companies	65
Use of big data and analytics	46
Knowledge transfer	32
Entrepreneurial fear of failure	30

IT integration	Rank
E-Government	08
Public-private partnerships	52
Cyber security	30
▶ Software piracy	05
Government cyber security capacity	45
Privacy protection by law exists	29

AUSTRIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

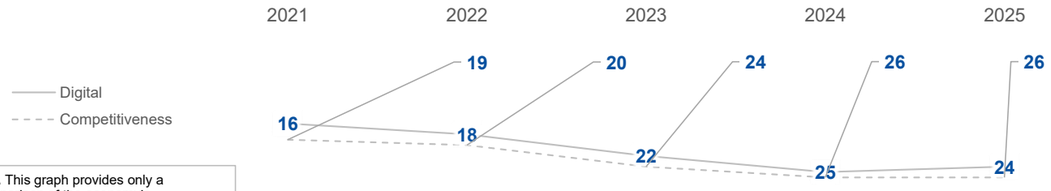


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	16	18	22	25	24
Knowledge	10	13	16	21	15
Technology	32	36	35	32	31
Future readiness	16	13	19	31	28

COMPETITIVENESS & DIGITAL RANKINGS



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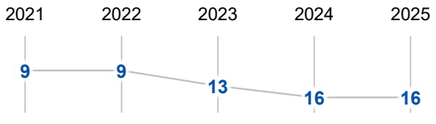
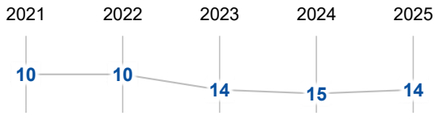
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



AUSTRIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	15	16	20	23	21
Training & education	05	12	11	18	11
Scientific concentration	15	15	17	17	15

Talent	Rank
Educational assessment PISA - Math	16
International experience	29
Management of cities	16
Digital/Technological skills	38
Foreign highly skilled personnel	39
Net flow of international students	07
Female researchers	47
Scientific and technical employment	16

Training & education	Rank
▶ Employee training	03
Total public expenditure on education	30
Higher education achievement	34
▶ Pupil-teacher ratio (tertiary education)	02
Graduates in Sciences	10
Women with degrees	35
Computer science education index	26

Scientific concentration	Rank
Total expenditure on R&D (%)	08
▶ Total R&D personnel per capita	07
R&D productivity by publication	50
High-tech patent grants	20
AI-related patent publications	17
Robots in Education and R&D	11
AI articles	16

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	26	29	34	32	30
Capital	32	36	34	41	34
Technological framework	38	37	38	23	31

Regulatory framework	Rank
▷ Starting a business	55
Enforcing contracts	10
▷ Immigration laws	55
Development & application of tech.	45
Scientific research legislation	22
Intellectual property rights	08
AI policies passed into law	15

Capital	Rank
IT & media stock market capitalization	45
Funding for technological development	24
Banking and financial services	29
Country credit rating	13
Venture capital	41
▷ Investment in Telecommunications	58
AI private investment	09

Technological framework	Rank
Communications technology	27
Mobile broadband subscribers	18
Wireless broadband	24
Internet users	21
Internet bandwidth speed	44
High-tech exports (%)	32
Secure internet servers	24

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	21	19	24	38	35
Business agility	18	21	22	28	31
IT integration	11	11	13	20	14

Adaptive attitudes	Rank
E-Participation	32
Internet retailing	16
Tablet possession	22
Smartphone possession	22
▷ Attitudes toward globalization	58
▷ Flexibility and adaptability	60

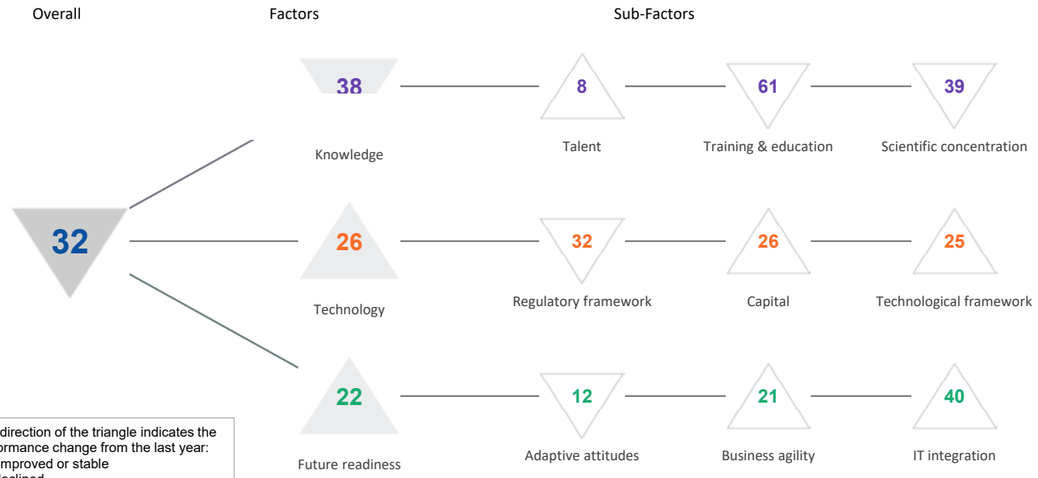
Business agility	Rank
Opportunities and threats	38
World robots distribution	23
Agility of companies	28
Use of big data and analytics	49
Knowledge transfer	19
Entrepreneurial fear of failure	20

IT integration	Rank
E-Government	22
Public-private partnerships	43
▶ Cyber security	05
▶ Software piracy	06
Government cyber security capacity	36
Privacy protection by law exists	43

BAHRAIN

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

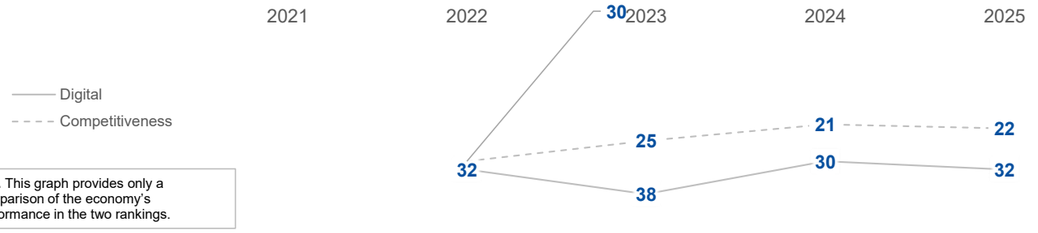


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	32	38	30	32
Knowledge	-	34	36	35	38
Technology	-	23	30	33	26
Future readiness	-	36	46	24	22

COMPETITIVENESS & DIGITAL RANKINGS



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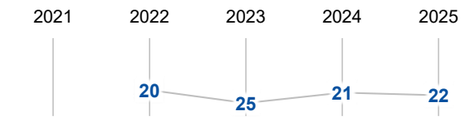
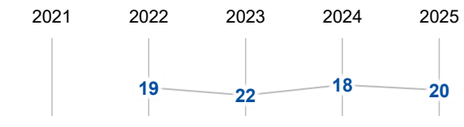
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



BAHRAIN

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	13	15	11	08
Training & education	-	48	55	59	61
Scientific concentration	-	31	34	31	39

Talent	Rank
Educational assessment PISA - Math	-
International experience	09
Management of cities	09
Digital/Technological skills	08
Foreign highly skilled personnel	08
Net flow of international students	36
▶ Female researchers	05
Scientific and technical employment	-

Training & education	Rank
Employee training	27
▷ Total public expenditure on education	62
Higher education achievement	59
Pupil-teacher ratio (tertiary education)	58
Graduates in Sciences	48
▶ Women with degrees	04
▷ Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	-
Total R&D personnel per capita	-
R&D productivity by publication	-
High-tech patent grants	44
AI-related patent publications	-
Robots in Education and R&D	-
AI articles	33

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	32	29	31	32
Capital	-	34	47	29	26
Technological framework	-	17	14	38	25

Regulatory framework	Rank
Starting a business	33
Enforcing contracts	42
▶ Immigration laws	01
Development & application of tech.	06
Scientific research legislation	32
Intellectual property rights	34
AI policies passed into law	60

Capital	Rank
IT & media stock market capitalization	19
Funding for technological development	14
Banking and financial services	06
▷ Country credit rating	61
Venture capital	18
Investment in Telecommunications	25
AI private investment	-

Technological framework	Rank
Communications technology	12
Mobile broadband subscribers	08
Wireless broadband	15
▶ Internet users	01
Internet bandwidth speed	33
▷ High-tech exports (%)	67
Secure internet servers	46

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	23	49	07	12
Business agility	-	29	32	26	21
IT integration	-	46	50	41	40

Adaptive attitudes	Rank
E-Participation	17
Internet retailing	-
Tablet possession	27
Smartphone possession	10
Attitudes toward globalization	16
▶ Flexibility and adaptability	03

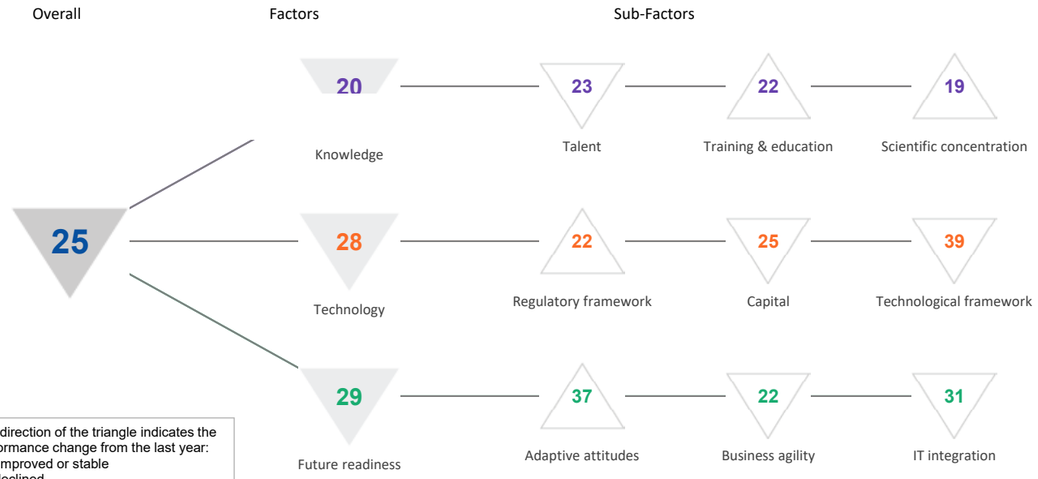
Business agility	Rank
Opportunities and threats	16
World robots distribution	-
Agility of companies	25
Use of big data and analytics	16
Knowledge transfer	23
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	18
Public-private partnerships	08
Cyber security	11
Software piracy	46
Government cyber security capacity	48
▷ Privacy protection by law exists	61

BELGIUM

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

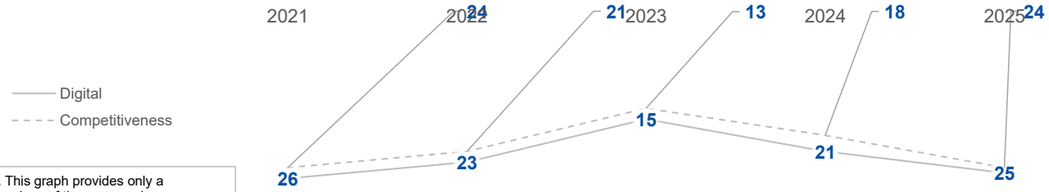


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	26	23	15	21	25
Knowledge	21	21	12	18	20
Technology	23	24	19	25	28
Future readiness	26	25	16	26	29

COMPETITIVENESS & DIGITAL RANKINGS



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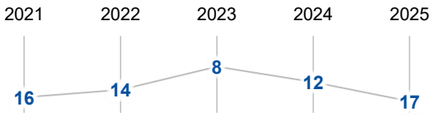
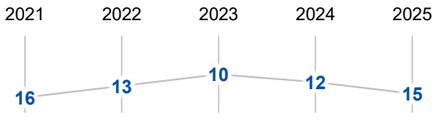
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



BELGIUM

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	20	17	07	15	23
Training & education	31	30	22	23	22
Scientific concentration	20	19	18	19	19

Talent	Rank
Educational assessment PISA - Math	12
International experience	19
Management of cities	41
Digital/Technological skills	25
Foreign highly skilled personnel	23
Net flow of international students	15
Female researchers	42
Scientific and technical employment	18

	Training & education	Rank
	Employee training	15
▶	Total public expenditure on education	05
	Higher education achievement	24
	Pupil-teacher ratio (tertiary education)	33
▷	Graduates in Sciences	49
	Women with degrees	24
	Computer science education index	29

	Scientific concentration	Rank
▶	Total expenditure on R&D (%)	04
▶	Total R&D personnel per capita	05
	R&D productivity by publication	49
	High-tech patent grants	33
	AI-related patent publications	22
	Robots in Education and R&D	18
	AI articles	22

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	18	17	05	30	22
Capital	20	23	18	18	25
Technological framework	37	39	39	33	39

Regulatory framework	Rank
Starting a business	27
Enforcing contracts	39
Immigration laws	34
Development & application of tech.	27
Scientific research legislation	14
Intellectual property rights	17
AI policies passed into law	15

Capital	Rank
IT & media stock market capitalization	42
Funding for technological development	31
Banking and financial services	19
Country credit rating	22
Venture capital	29
Investment in Telecommunications	20
AI private investment	24

	Technological framework	Rank
	Communications technology	19
	Mobile broadband subscribers	27
▷	Wireless broadband	62
	Internet users	23
	Internet bandwidth speed	34
	High-tech exports (%)	22
	Secure internet servers	28

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	22	28	39	39	37
Business agility	38	27	09	15	22
IT integration	26	22	15	29	31

	Adaptive attitudes	Rank
▷	E-Participation	60
▶	Internet retailing	10
	Tablet possession	39
	Smartphone possession	49
	Attitudes toward globalization	29
▷	Flexibility and adaptability	54

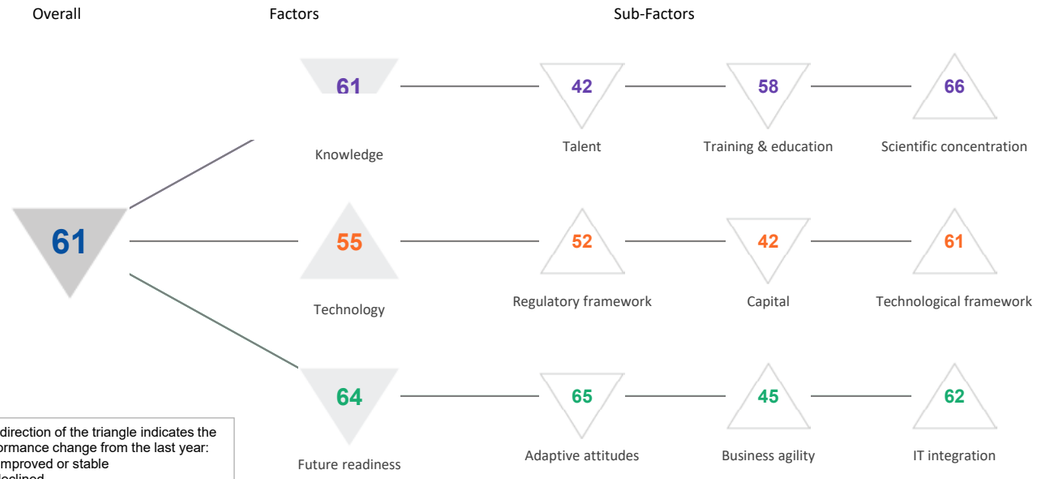
Business agility	Rank
Opportunities and threats	24
World robots distribution	26
Agility of companies	13
Use of big data and analytics	31
▶ Knowledge transfer	12
Entrepreneurial fear of failure	-

	IT integration	Rank
	E-Government	48
	Public-private partnerships	40
	Cyber security	20
	Software piracy	13
▷	Government cyber security capacity	53
	Privacy protection by law exists	12

BOTSWANA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

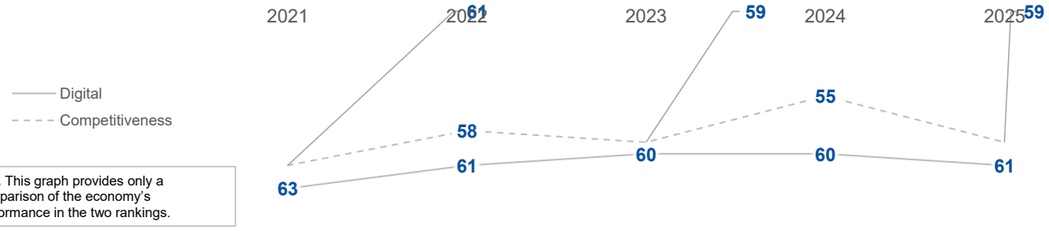


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	63	61	60	60	61
Knowledge	64	55	52	49	61
Technology	63	59	52	57	55
Future readiness	63	61	63	62	64

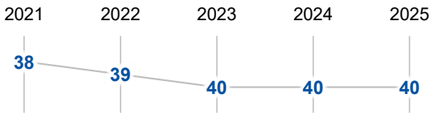
COMPETITIVENESS & DIGITAL RANKINGS



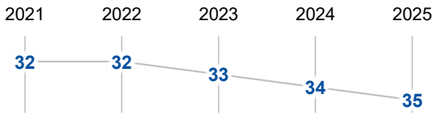
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



BOTSWANA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	53	42	37	31	42
Training & education	48	39	41	37	58
Scientific concentration	63	63	64	66	66

Talent	Rank
Educational assessment PISA - Math	-
International experience	31
Management of cities	31
Digital/Technological skills	46
▶ Foreign highly skilled personnel	11
Net flow of international students	47
Female researchers	-
Scientific and technical employment	54

Training & education	Rank
Employee training	50
Total public expenditure on education	-
Higher education achievement	-
▶ Pupil-teacher ratio (tertiary education)	24
Graduates in Sciences	54
Women with degrees	-
Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	-
Total R&D personnel per capita	-
R&D productivity by publication	-
▷ High-tech patent grants	65
AI-related patent publications	-
Robots in Education and R&D	-
AI articles	58

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	63	54	54	56	52
Capital	56	47	06	26	42
Technological framework	64	62	63	64	61

Regulatory framework	Rank
▷ Starting a business	65
Enforcing contracts	61
▶ Immigration laws	16
Development & application of tech.	34
Scientific research legislation	35
Intellectual property rights	35
AI policies passed into law	53

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	47
Banking and financial services	51
Country credit rating	41
Venture capital	42
▶ Investment in Telecommunications	22
AI private investment	-

Technological framework	Rank
Communications technology	57
Mobile broadband subscribers	59
Wireless broadband	47
Internet users	56
▷ Internet bandwidth speed	67
▷ High-tech exports (%)	66
Secure internet servers	58

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	63	59	63	63	65
Business agility	46	51	46	51	45
IT integration	63	61	63	62	62

Adaptive attitudes	Rank
▷ E-Participation	64
Internet retailing	-
Tablet possession	-
Smartphone possession	-
Attitudes toward globalization	50
Flexibility and adaptability	49

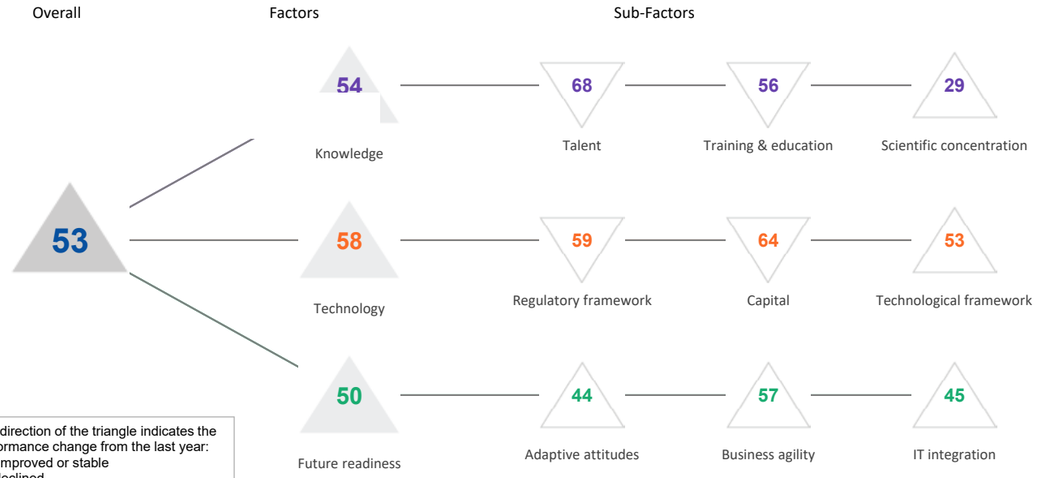
Business agility	Rank
Opportunities and threats	53
World robots distribution	-
Agility of companies	60
Use of big data and analytics	48
▶ Knowledge transfer	29
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	63
Public-private partnerships	35
Cyber security	51
Software piracy	63
Government cyber security capacity	57
Privacy protection by law exists	33

BRAZIL

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

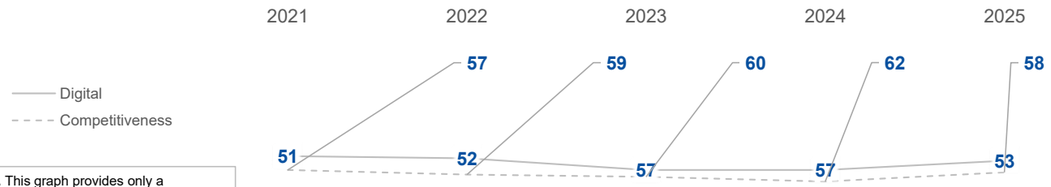


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	51	52	57	57	53
Knowledge	51	51	57	56	54
Technology	55	55	60	60	58
Future readiness	45	47	52	53	50

COMPETITIVENESS & DIGITAL RANKINGS



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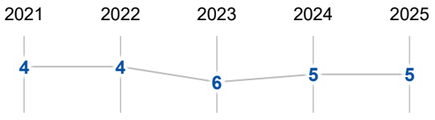
PEER GROUPS RANKINGS

THE AMERICAS (10 economies)



POPULATIONS > 20 MILLION (32 economies)

BRAZIL

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	63	62	64	66	68
Training & education	58	51	57	51	56
Scientific concentration	21	25	25	29	29

Talent	Rank
Educational assessment PISA - Math	53
▷ International experience	64
▷ Management of cities	64
Digital/Technological skills	60
▷ Foreign highly skilled personnel	63
Net flow of international students	49
Female researchers	-
Scientific and technical employment	37

Training & education	Rank
Employee training	51
Total public expenditure on education	26
Higher education achievement	56
Pupil-teacher ratio (tertiary education)	48
Graduates in Sciences	59
Women with degrees	52
Computer science education index	31

Scientific concentration	Rank
Total expenditure on R&D (%)	35
Total R&D personnel per capita	-
▶ R&D productivity by publication	09
High-tech patent grants	46
AI-related patent publications	31
▶ Robots in Education and R&D	17
AI articles	55

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	51	55	58	53	59
Capital	59	57	62	59	64
Technological framework	51	51	51	54	53

Regulatory framework	Rank
Starting a business	61
Enforcing contracts	41
Immigration laws	35
Development & application of tech.	58
Scientific research legislation	60
Intellectual property rights	60
AI policies passed into law	44

Capital	Rank
IT & media stock market capitalization	46
Funding for technological development	62
Banking and financial services	60
Country credit rating	57
▷ Venture capital	64
Investment in Telecommunications	49
AI private investment	16

Technological framework	Rank
Communications technology	55
Mobile broadband subscribers	53
Wireless broadband	54
Internet users	52
Internet bandwidth speed	35
High-tech exports (%)	44
Secure internet servers	45

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	40	43	51	47	44
Business agility	42	52	61	63	57
IT integration	49	43	45	50	45

Adaptive attitudes	Rank
▶ E-Participation	19
Internet retailing	45
Tablet possession	56
▶ Smartphone possession	19
Attitudes toward globalization	46
Flexibility and adaptability	40

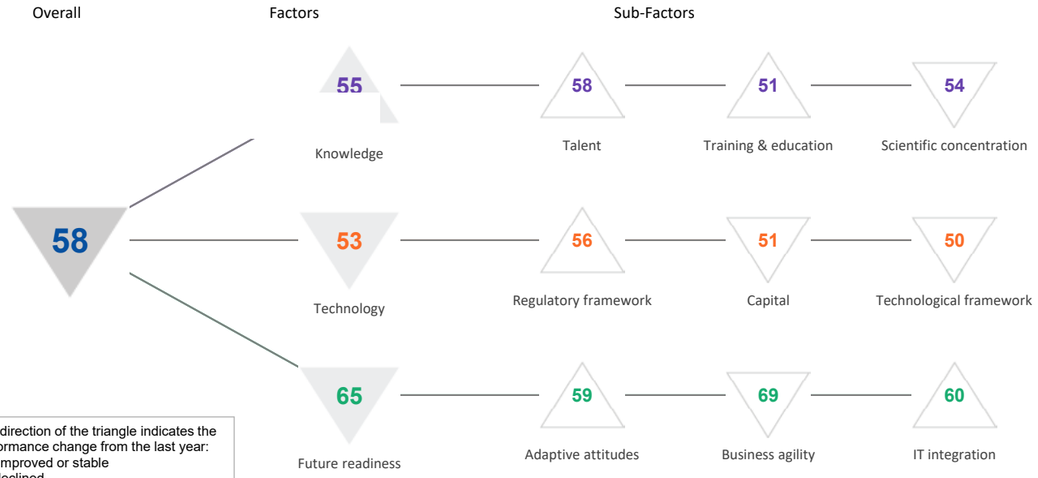
Business agility	Rank
Opportunities and threats	47
World robots distribution	20
Agility of companies	42
Use of big data and analytics	57
▷ Knowledge transfer	65
Entrepreneurial fear of failure	41

IT integration	Rank
E-Government	42
Public-private partnerships	55
Cyber security	59
Software piracy	36
▶ Government cyber security capacity	26
Privacy protection by law exists	44

BULGARIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

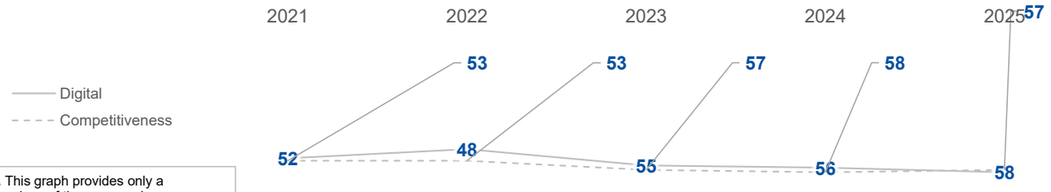


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	52	48	55	56	58
Knowledge	53	48	53	59	55
Technology	51	51	56	49	53
Future readiness	55	50	58	61	65

COMPETITIVENESS & DIGITAL RANKINGS



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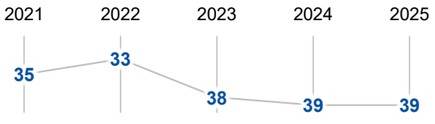
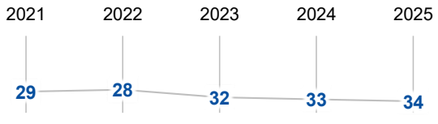
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



BULGARIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	54	56	58	61	58
Training & education	53	52	46	54	51
Scientific concentration	46	40	44	47	54

Talent	Rank
Educational assessment PISA - Math	44
International experience	65
Management of cities	61
Digital/Technological skills	43
Foreign highly skilled personnel	64
Net flow of international students	42
▶ Female researchers	15
Scientific and technical employment	38

Training & education	Rank
▷ Employee training	69
Total public expenditure on education	46
Higher education achievement	46
▶ Pupil-teacher ratio (tertiary education)	12
Graduates in Sciences	47
Women with degrees	32
Computer science education index	53

Scientific concentration	Rank
Total expenditure on R&D (%)	43
Total R&D personnel per capita	38
R&D productivity by publication	40
High-tech patent grants	24
AI-related patent publications	52
Robots in Education and R&D	47
AI articles	46

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	55	52	60	61	56
Capital	53	52	54	37	51
Technological framework	42	46	50	49	50

Regulatory framework	Rank
Starting a business	48
Enforcing contracts	31
Immigration laws	61
Development & application of tech.	60
Scientific research legislation	59
Intellectual property rights	65
AI policies passed into law	27

Capital	Rank
▶ IT & media stock market capitalization	16
Funding for technological development	55
Banking and financial services	62
Country credit rating	44
Venture capital	43
Investment in Telecommunications	23
AI private investment	46

Technological framework	Rank
Communications technology	42
Mobile broadband subscribers	43
▶ Wireless broadband	17
Internet users	58
Internet bandwidth speed	48
High-tech exports (%)	39
Secure internet servers	17

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	45	39	50	61	59
Business agility	61	56	62	57	69
IT integration	53	49	57	60	60

Adaptive attitudes	Rank
E-Participation	47
Internet retailing	47
Tablet possession	37
Smartphone possession	33
Attitudes toward globalization	63
Flexibility and adaptability	61

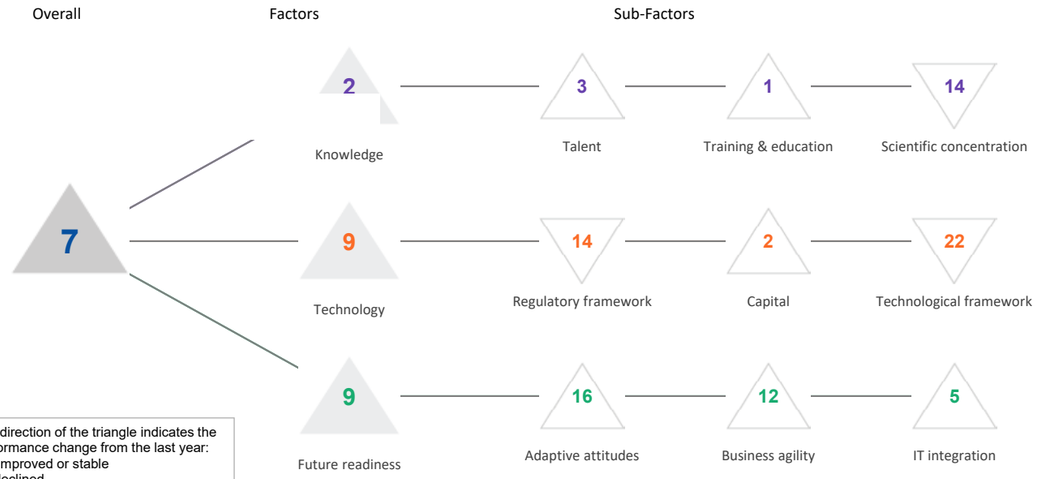
Business agility	Rank
▷ Opportunities and threats	68
World robots distribution	42
▷ Agility of companies	68
▷ Use of big data and analytics	69
▷ Knowledge transfer	67
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	47
Public-private partnerships	62
Cyber security	63
Software piracy	51
Government cyber security capacity	61
▶ Privacy protection by law exists	04

CANADA

DIGITAL TRENDS - OVERALL

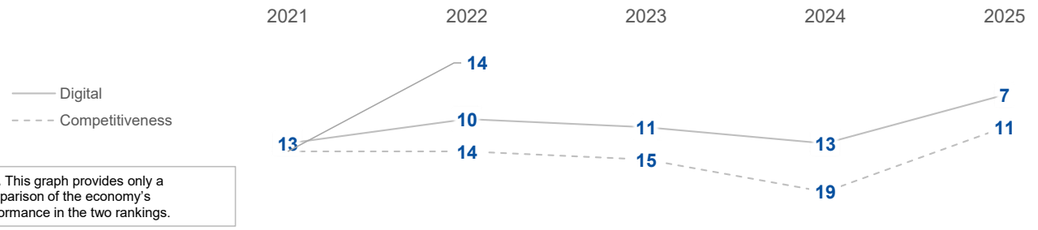
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	13	10	11	13	07
Knowledge	07	03	04	06	02
Technology	15	14	13	13	09
Future readiness	15	11	11	19	09

COMPETITIVENESS & DIGITAL RANKINGS



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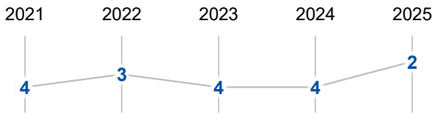
PEER GROUPS RANKINGS

THE AMERICAS (10 economies)

POPULATIONS > 20 MILLION (32 economies)



CANADA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	09	08	09	14	03
Training & education	10	03	02	03	01
Scientific concentration	05	04	05	06	14

Talent	Rank
Educational assessment PISA - Math	09
International experience	15
Management of cities	13
Digital/Technological skills	11
Foreign highly skilled personnel	09
Net flow of international students	05
Female researchers	-
▶ Scientific and technical employment	03

Training & education	Rank
Employee training	24
Total public expenditure on education	40
Higher education achievement	06
Pupil-teacher ratio (tertiary education)	07
Graduates in Sciences	12
▶ Women with degrees	02
Computer science education index	09

Scientific concentration	Rank
Total expenditure on R&D (%)	21
Total R&D personnel per capita	20
R&D productivity by publication	14
High-tech patent grants	13
AI-related patent publications	08
Robots in Education and R&D	09
AI articles	24

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	13	13	19	09	14
Capital	09	06	04	12	02
Technological framework	29	31	26	16	22

Regulatory framework	Rank
▶ Starting a business	02
▷ Enforcing contracts	53
Immigration laws	14
Development & application of tech.	07
Scientific research legislation	10
Intellectual property rights	12
AI policies passed into law	32

Capital	Rank
IT & media stock market capitalization	25
Funding for technological development	04
Banking and financial services	10
Country credit rating	10
Venture capital	07
Investment in Telecommunications	16
AI private investment	05

Technological framework	Rank
Communications technology	25
Mobile broadband subscribers	07
▷ Wireless broadband	59
Internet users	26
Internet bandwidth speed	06
▷ High-tech exports (%)	33
Secure internet servers	23

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	17	18	18	23	16
Business agility	20	19	24	29	12
IT integration	14	02	04	11	05

Adaptive attitudes	Rank
E-Participation	14
Internet retailing	08
Tablet possession	16
▷ Smartphone possession	50
Attitudes toward globalization	23
Flexibility and adaptability	18

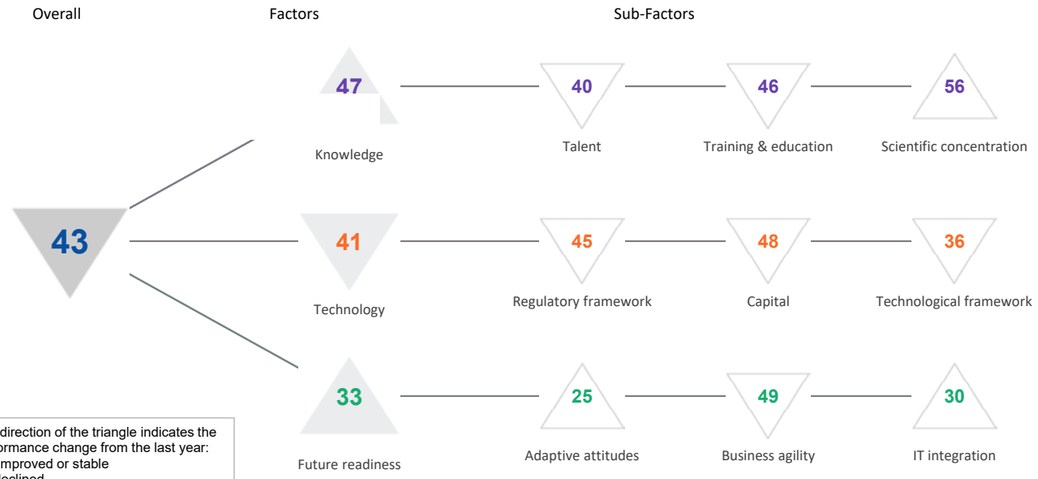
Business agility	Rank
Opportunities and threats	14
World robots distribution	14
Agility of companies	20
Use of big data and analytics	04
▶ Knowledge transfer	03
Entrepreneurial fear of failure	33

IT integration	Rank
▷ E-Government	40
Public-private partnerships	10
Cyber security	10
Software piracy	13
▶ Government cyber security capacity	04
Privacy protection by law exists	24

CHILE

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

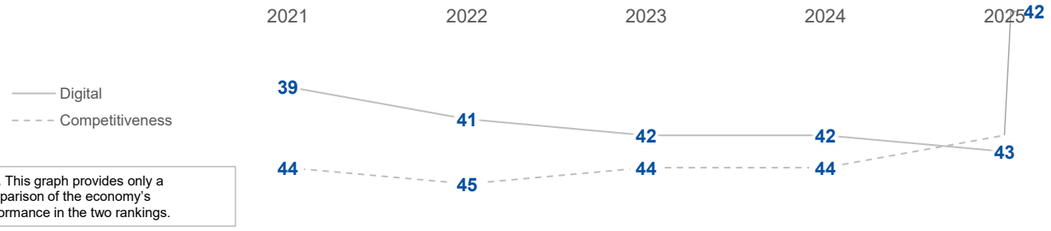


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	39	41	42	42	43
Knowledge	49	50	47	47	47
Technology	35	41	38	39	41
Future readiness	36	33	38	33	33

COMPETITIVENESS & DIGITAL RANKINGS



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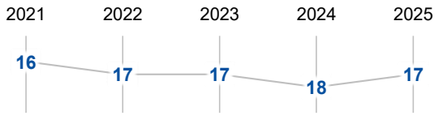
PEER GROUPS RANKINGS

THE AMERICAS (10 economies)

POPULATIONS > 20 MILLION (32 economies)



CHILE

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	36	39	41	38	40
Training & education	51	54	45	45	46
Scientific concentration	57	55	56	58	56

Talent	Rank
Educational assessment PISA - Math	46
International experience	21
Management of cities	39
Digital/Technological skills	31
Foreign highly skilled personnel	14
Net flow of international students	43
Female researchers	43
Scientific and technical employment	40

Training & education	Rank
▷ Employee training	59
Total public expenditure on education	29
Higher education achievement	37
Pupil-teacher ratio (tertiary education)	-
Graduates in Sciences	38
Women with degrees	40
Computer science education index	45

Scientific concentration	Rank
Total expenditure on R&D (%)	53
Total R&D personnel per capita	52
R&D productivity by publication	24
High-tech patent grants	54
AI-related patent publications	35
Robots in Education and R&D	40
AI articles	47

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	33	41	37	33	45
Capital	38	43	50	46	48
Technological framework	36	36	30	35	36

Regulatory framework	Rank
Starting a business	30
Enforcing contracts	37
Immigration laws	13
Development & application of tech.	46
▷ Scientific research legislation	57
Intellectual property rights	37
AI policies passed into law	44

Capital	Rank
▷ IT & media stock market capitalization	54
Funding for technological development	54
Banking and financial services	30
Country credit rating	34
Venture capital	44
▶ Investment in Telecommunications	11
AI private investment	45

Technological framework	Rank
Communications technology	21
Mobile broadband subscribers	38
Wireless broadband	48
Internet users	24
▶ Internet bandwidth speed	11
High-tech exports (%)	41
Secure internet servers	40

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	24	26	25	25	25
Business agility	54	43	52	40	49
IT integration	39	34	34	33	30

Adaptive attitudes	Rank
E-Participation	24
Internet retailing	37
Tablet possession	23
▶ Smartphone possession	11
▶ Attitudes toward globalization	05
▷ Flexibility and adaptability	56

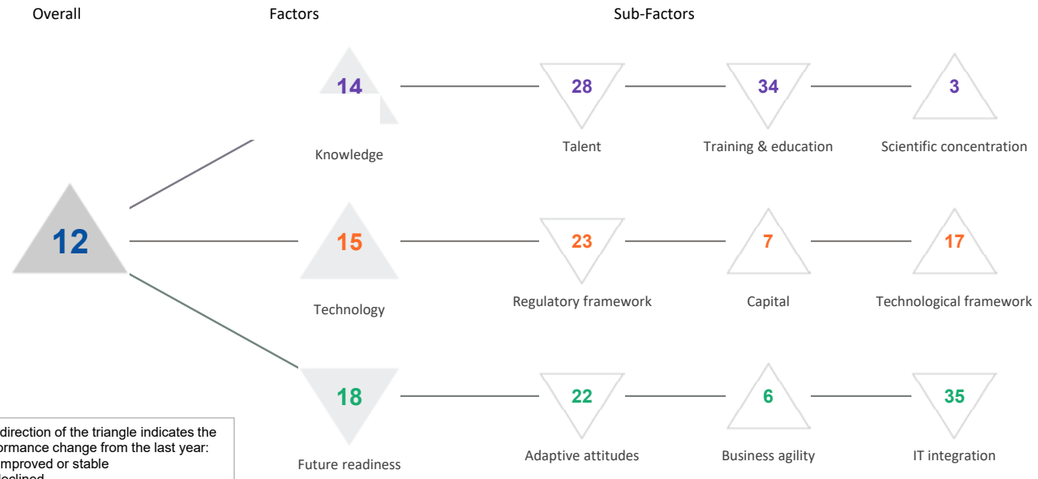
Business agility	Rank
Opportunities and threats	34
World robots distribution	48
Agility of companies	26
▷ Use of big data and analytics	59
Knowledge transfer	54
Entrepreneurial fear of failure	28

IT integration	Rank
E-Government	27
Public-private partnerships	20
Cyber security	50
Software piracy	47
▶ Government cyber security capacity	07
Privacy protection by law exists	39

CHINA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

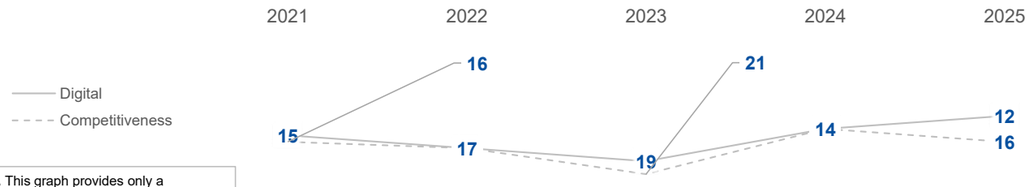


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	15	17	19	14	12
Knowledge	06	17	21	15	14
Technology	20	18	22	15	15
Future readiness	17	15	13	14	18

COMPETITIVENESS & DIGITAL RANKINGS



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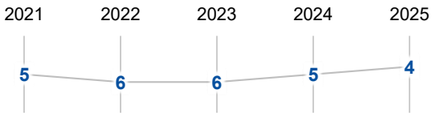
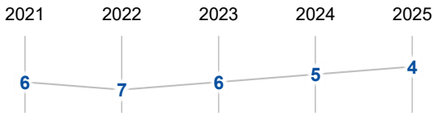
PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS > 20 MILLION (32 economies)



CHINA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	12	12	14	10	28
Training & education	35	33	43	32	34
Scientific concentration	01	09	09	10	03

Talent	Rank
▶ Educational assessment PISA - Math	01
International experience	52
Management of cities	05
Digital/Technological skills	17
Foreign highly skilled personnel	52
Net flow of international students	53
▷ Female researchers	55
Scientific and technical employment	41

Training & education	Rank
Employee training	21
▷ Total public expenditure on education	57
Higher education achievement	10
Pupil-teacher ratio (tertiary education)	44
Graduates in Sciences	-
Women with degrees	55
Computer science education index	03

Scientific concentration	Rank
Total expenditure on R&D (%)	14
Total R&D personnel per capita	34
▶ R&D productivity by publication	01
High-tech patent grants	07
▶ AI-related patent publications	01
▶ Robots in Education and R&D	01
AI articles	49

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	15	16	20	04	23
Capital	27	27	26	20	07
Technological framework	28	24	20	25	17

Regulatory framework	Rank
Starting a business	16
Enforcing contracts	05
Immigration laws	50
Development & application of tech.	22
Scientific research legislation	23
Intellectual property rights	39
AI policies passed into law	30

Capital	Rank
IT & media stock market capitalization	24
Funding for technological development	18
Banking and financial services	24
Country credit rating	28
Venture capital	31
Investment in Telecommunications	33
AI private investment	02

Technological framework	Rank
Communications technology	13
Mobile broadband subscribers	01
Wireless broadband	13
▷ Internet users	60
Internet bandwidth speed	23
High-tech exports (%)	14
Secure internet servers	52

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	19	22	20	19	22
Business agility	03	03	04	08	06
IT integration	32	32	32	26	35

Adaptive attitudes	Rank
E-Participation	11
Internet retailing	20
Tablet possession	40
Smartphone possession	52
Attitudes toward globalization	10
Flexibility and adaptability	20

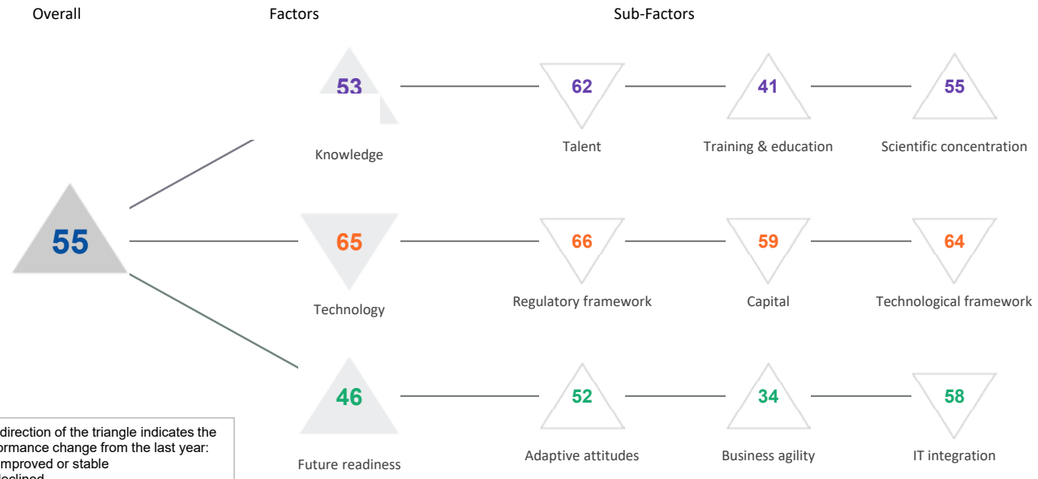
Business agility	Rank
Opportunities and threats	12
▶ World robots distribution	01
Agility of companies	21
Use of big data and analytics	11
Knowledge transfer	24
Entrepreneurial fear of failure	49

IT integration	Rank
E-Government	31
Public-private partnerships	14
Cyber security	14
▷ Software piracy	58
Government cyber security capacity	02
▷ Privacy protection by law exists	64

COLOMBIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

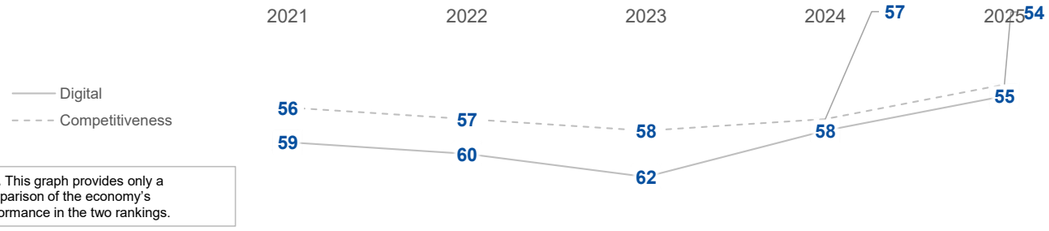


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	59	60	62	58	55
Knowledge	56	57	54	55	53
Technology	60	61	62	61	65
Future readiness	53	56	60	49	46

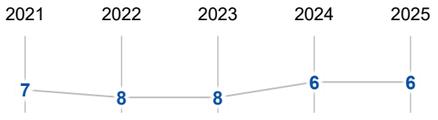
COMPETITIVENESS & DIGITAL RANKINGS



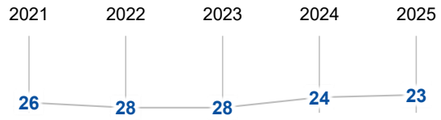
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

THE AMERICAS (10 economies)



POPULATIONS > 20 MILLION (32 economies)



COLOMBIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	57	58	57	56	62
Training & education	50	46	42	43	41
Scientific concentration	58	56	57	59	55

Talent	Rank
Educational assessment PISA - Math	52
International experience	49
Management of cities	50
Digital/Technological skills	51
Foreign highly skilled personnel	56
Net flow of international students	56
Female researchers	29
Scientific and technical employment	43

Training & education	Rank
Employee training	22
▶ Total public expenditure on education	16
Higher education achievement	48
Pupil-teacher ratio (tertiary education)	36
Graduates in Sciences	33
Women with degrees	45
Computer science education index	54

Scientific concentration	Rank
Total expenditure on R&D (%)	54
Total R&D personnel per capita	51
▶ R&D productivity by publication	17
High-tech patent grants	55
AI-related patent publications	35
Robots in Education and R&D	37
AI articles	50

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	61	59	62	59	66
Capital	49	56	57	57	59
Technological framework	59	61	62	60	64

Regulatory framework	Rank
Starting a business	40
▷ Enforcing contracts	68
Immigration laws	40
Development & application of tech.	52
▷ Scientific research legislation	61
Intellectual property rights	51
AI policies passed into law	53

Capital	Rank
IT & media stock market capitalization	57
Funding for technological development	56
Banking and financial services	59
Country credit rating	55
Venture capital	58
▶ Investment in Telecommunications	03
AI private investment	44

Technological framework	Rank
Communications technology	56
▷ Mobile broadband subscribers	62
▷ Wireless broadband	67
Internet users	61
Internet bandwidth speed	43
High-tech exports (%)	50
Secure internet servers	53

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	58	48	58	59	52
Business agility	47	54	59	36	34
IT integration	46	58	58	52	58

Adaptive attitudes	Rank
E-Participation	40
Internet retailing	53
Tablet possession	60
Smartphone possession	34
Attitudes toward globalization	24
Flexibility and adaptability	36

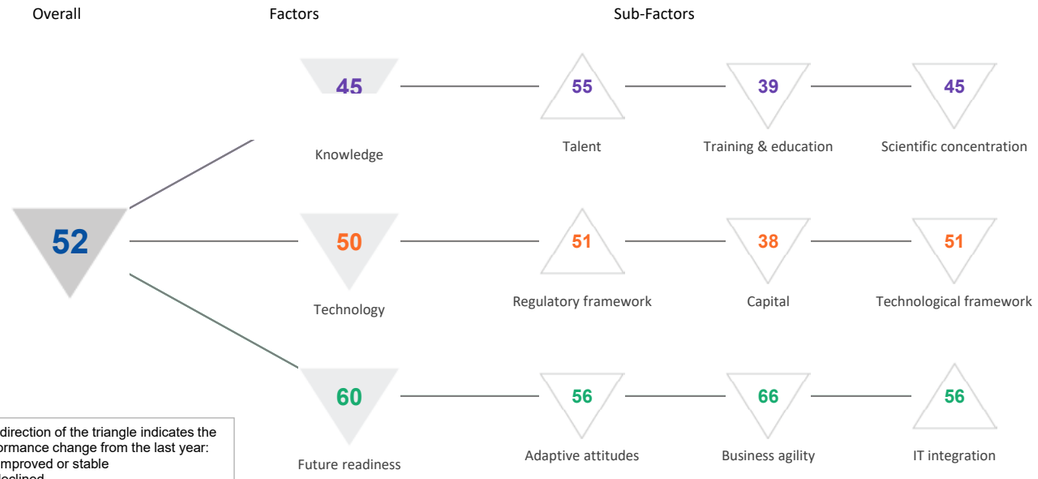
Business agility	Rank
Opportunities and threats	51
World robots distribution	45
Agility of companies	28
Use of big data and analytics	35
Knowledge transfer	43
▶ Entrepreneurial fear of failure	04

IT integration	Rank
E-Government	56
Public-private partnerships	32
Cyber security	56
Software piracy	40
▷ Government cyber security capacity	68
▶ Privacy protection by law exists	05

CROATIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

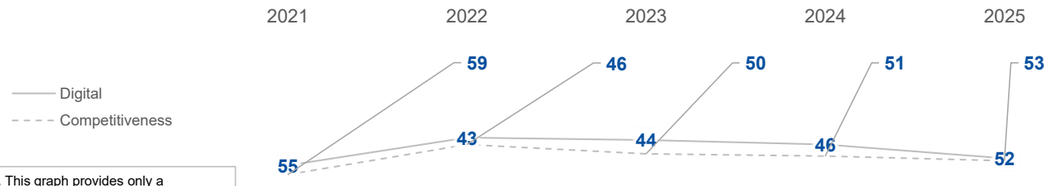


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	55	43	44	46	52
Knowledge	47	40	40	42	45
Technology	50	42	42	45	50
Future readiness	60	48	50	59	60

COMPETITIVENESS & DIGITAL RANKINGS



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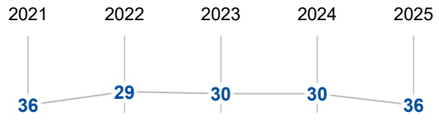
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)

CROATIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	61	52	54	57	55
Training & education	42	34	36	38	39
Scientific concentration	34	34	32	38	45

Talent	Rank
Educational assessment PISA - Math	35
International experience	66
Management of cities	63
Digital/Technological skills	50
▷ Foreign highly skilled personnel	66
Net flow of international students	54
▶ Female researchers	13
Scientific and technical employment	30

Training & education	Rank
Employee training	64
▶ Total public expenditure on education	15
Higher education achievement	44
▶ Pupil-teacher ratio (tertiary education)	15
Graduates in Sciences	16
Women with degrees	42
Computer science education index	51

Scientific concentration	Rank
Total expenditure on R&D (%)	31
Total R&D personnel per capita	37
R&D productivity by publication	51
High-tech patent grants	21
AI-related patent publications	48
Robots in Education and R&D	37
AI articles	34

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	56	46	47	54	51
Capital	50	35	33	33	38
Technological framework	41	42	44	47	51

Regulatory framework	Rank
Starting a business	49
Enforcing contracts	23
Immigration laws	56
▷ Development & application of tech.	66
Scientific research legislation	54
Intellectual property rights	55
AI policies passed into law	25

Capital	Rank
IT & media stock market capitalization	22
Funding for technological development	52
Banking and financial services	63
Country credit rating	38
Venture capital	53
▶ Investment in Telecommunications	04
AI private investment	27

Technological framework	Rank
Communications technology	41
Mobile broadband subscribers	31
Wireless broadband	53
Internet users	54
Internet bandwidth speed	59
High-tech exports (%)	40
Secure internet servers	31

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	39	40	41	45	56
Business agility	64	58	57	62	66
IT integration	58	44	48	59	56

Adaptive attitudes	Rank
▶ E-Participation	14
Internet retailing	50
Tablet possession	32
Smartphone possession	27
▷ Attitudes toward globalization	68
▷ Flexibility and adaptability	67

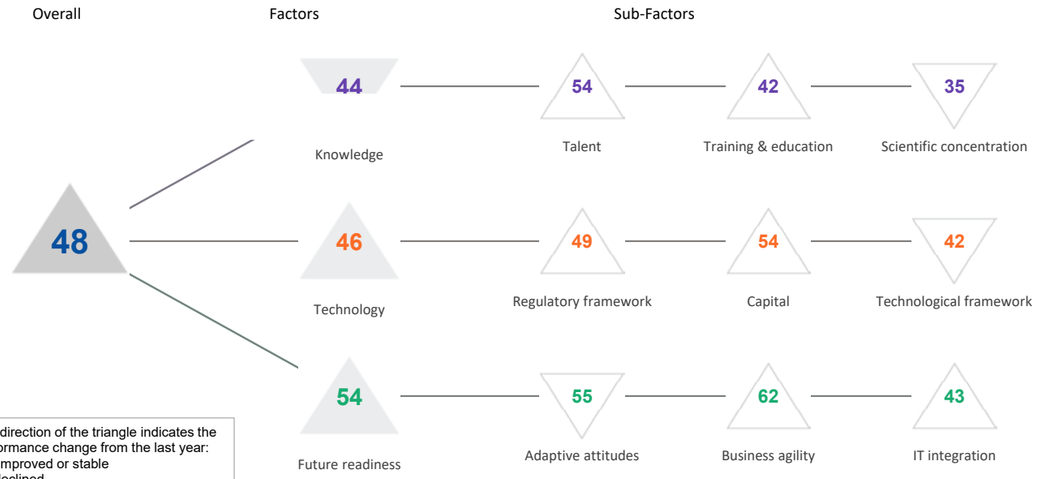
Business agility	Rank
Opportunities and threats	65
World robots distribution	45
Agility of companies	64
Use of big data and analytics	65
Knowledge transfer	63
Entrepreneurial fear of failure	26

IT integration	Rank
E-Government	28
▷ Public-private partnerships	67
Cyber security	46
Software piracy	43
Government cyber security capacity	49
Privacy protection by law exists	55

CYPRUS

DIGITAL TRENDS - OVERALL

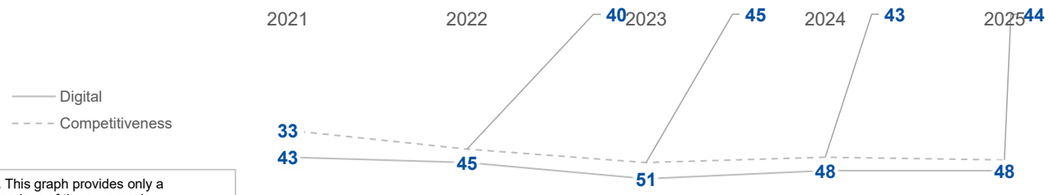
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	43	45	51	48	48
Knowledge	39	39	48	43	44
Technology	53	52	53	51	46
Future readiness	34	39	53	54	54

COMPETITIVENESS & DIGITAL RANKINGS



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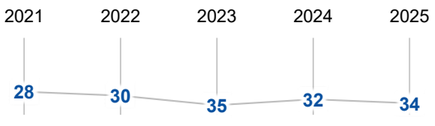
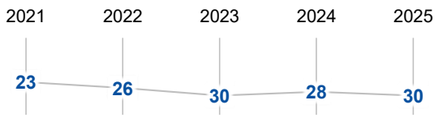
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



CYPRUS

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	56	53	55	63	54
Training & education	29	40	44	44	42
Scientific concentration	29	26	40	25	35

Talent	Rank
Educational assessment PISA - Math	43
International experience	39
Management of cities	59
Digital/Technological skills	55
Foreign highly skilled personnel	31
▷ Net flow of international students	62
Female researchers	26
▶ Scientific and technical employment	06

Training & education	Rank
Employee training	49
Total public expenditure on education	18
▶ Higher education achievement	09
Pupil-teacher ratio (tertiary education)	55
Graduates in Sciences	61
▶ Women with degrees	15
Computer science education index	33

Scientific concentration	Rank
Total expenditure on R&D (%)	45
Total R&D personnel per capita	42
R&D productivity by publication	54
High-tech patent grants	18
AI-related patent publications	39
Robots in Education and R&D	-
▶ AI articles	04

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	47	50	53	60	49
Capital	54	54	56	58	54
Technological framework	52	49	49	36	42

Regulatory framework	Rank
Starting a business	28
▷ Enforcing contracts	63
Immigration laws	60
Development & application of tech.	53
Scientific research legislation	50
Intellectual property rights	45
AI policies passed into law	25

Capital	Rank
IT & media stock market capitalization	41
Funding for technological development	53
Banking and financial services	58
Country credit rating	42
▷ Venture capital	62
▶ Investment in Telecommunications	12
AI private investment	50

Technological framework	Rank
Communications technology	48
Mobile broadband subscribers	41
Wireless broadband	21
Internet users	36
Internet bandwidth speed	51
High-tech exports (%)	23
Secure internet servers	16

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	27	36	46	40	55
Business agility	50	53	63	66	62
IT integration	33	29	39	47	43

Adaptive attitudes	Rank
E-Participation	43
Internet retailing	-
Tablet possession	-
Smartphone possession	-
Attitudes toward globalization	55
Flexibility and adaptability	50

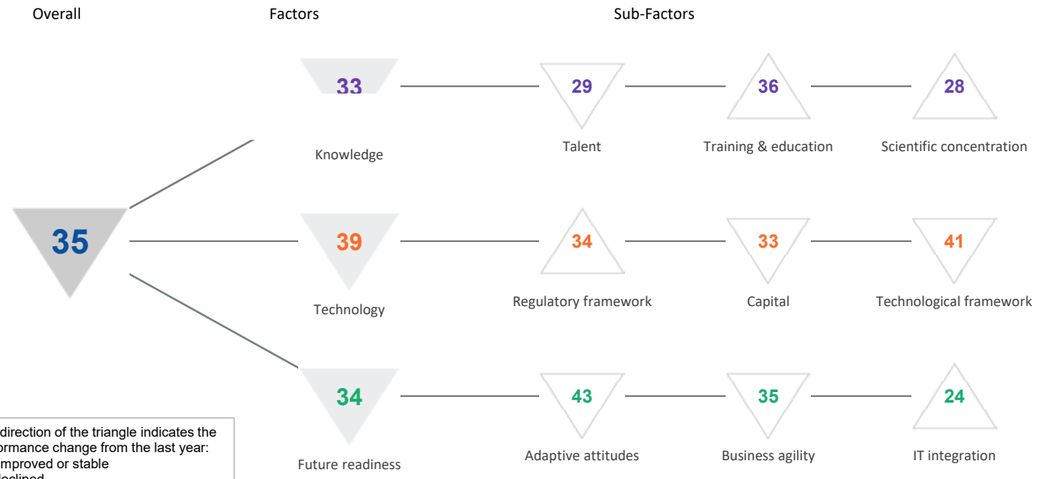
Business agility	Rank
Opportunities and threats	59
World robots distribution	-
▷ Agility of companies	62
Use of big data and analytics	61
Knowledge transfer	55
Entrepreneurial fear of failure	39

IT integration	Rank
E-Government	34
▷ Public-private partnerships	64
Cyber security	55
Software piracy	34
Government cyber security capacity	43
Privacy protection by law exists	21

CZECH REPUBLIC

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

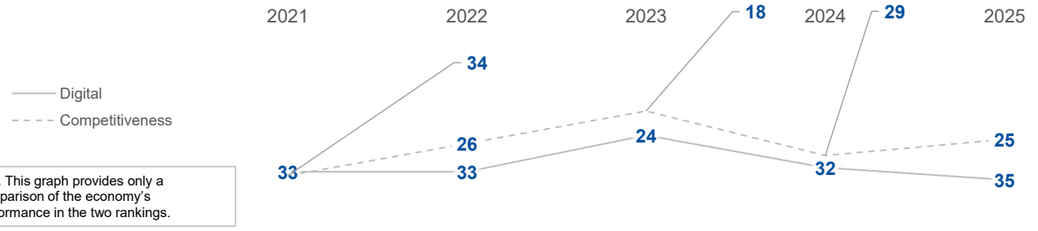


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	33	33	24	32	35
Knowledge	35	32	24	32	33
Technology	37	35	26	34	39
Future readiness	37	29	27	32	34

COMPETITIVENESS & DIGITAL RANKINGS



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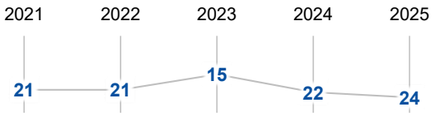
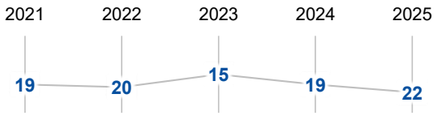
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



CZECH REPUBLIC

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	28	22	17	26	29
Training & education	45	38	33	36	36
Scientific concentration	30	29	27	32	28

Talent	Rank
Educational assessment PISA - Math	16
▶ International experience	11
Management of cities	43
Digital/Technological skills	27
Foreign highly skilled personnel	38
▶ Net flow of international students	10
▷ Female researchers	54
Scientific and technical employment	25

Training & education	Rank
Employee training	20
Total public expenditure on education	37
Higher education achievement	49
Pupil-teacher ratio (tertiary education)	32
Graduates in Sciences	27
Women with degrees	46
Computer science education index	36

Scientific concentration	Rank
Total expenditure on R&D (%)	20
Total R&D personnel per capita	19
R&D productivity by publication	37
High-tech patent grants	32
AI-related patent publications	41
Robots in Education and R&D	15
AI articles	42

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	44	37	33	38	34
Capital	29	26	13	22	33
Technological framework	32	30	28	39	41

Regulatory framework	Rank
▷ Starting a business	59
▷ Enforcing contracts	55
▶ Immigration laws	11
Development & application of tech.	44
Scientific research legislation	20
Intellectual property rights	47
AI policies passed into law	15

Capital	Rank
IT & media stock market capitalization	23
Funding for technological development	29
Banking and financial services	42
Country credit rating	23
Venture capital	17
Investment in Telecommunications	50
AI private investment	49

Technological framework	Rank
Communications technology	50
Mobile broadband subscribers	35
Wireless broadband	28
Internet users	48
Internet bandwidth speed	49
High-tech exports (%)	21
Secure internet servers	13

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	35	31	34	34	43
Business agility	32	24	12	27	35
IT integration	36	36	30	30	24

Adaptive attitudes	Rank
▷ E-Participation	56
Internet retailing	24
Tablet possession	45
▶ Smartphone possession	12
Attitudes toward globalization	47
Flexibility and adaptability	47

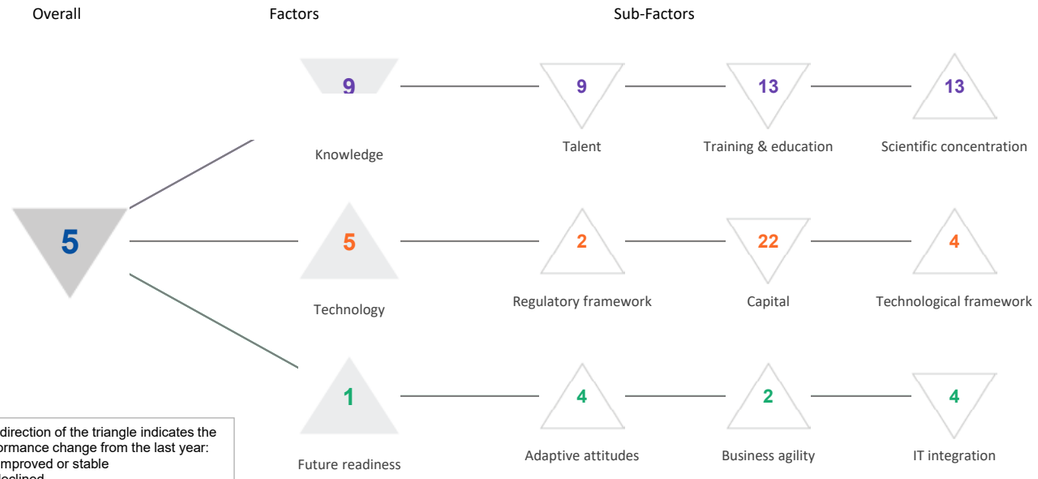
Business agility	Rank
Opportunities and threats	37
World robots distribution	16
▷ Agility of companies	52
Use of big data and analytics	25
Knowledge transfer	36
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	46
Public-private partnerships	45
Cyber security	23
Software piracy	19
Government cyber security capacity	21
▶ Privacy protection by law exists	07

DENMARK

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

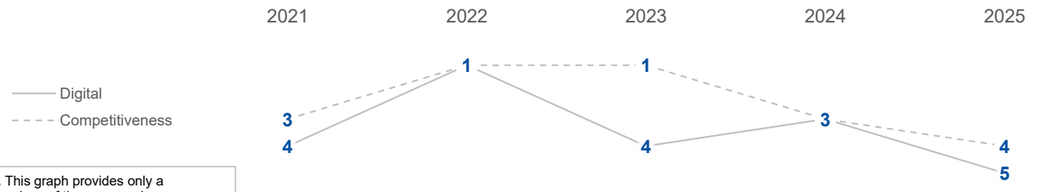


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	04	01	04	03	05
Knowledge	08	06	09	07	09
Technology	09	07	07	06	05
Future readiness	02	01	03	02	01

COMPETITIVENESS & DIGITAL RANKINGS



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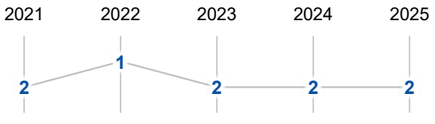
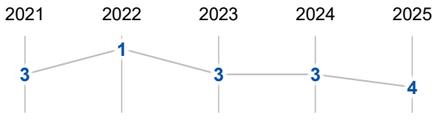
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



DENMARK

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	05	05	05	05	09
Training & education	04	07	12	12	13
Scientific concentration	17	17	20	14	13

Talent	Rank
Educational assessment PISA - Math	12
International experience	10
Management of cities	07
Digital/Technological skills	07
Foreign highly skilled personnel	12
Net flow of international students	12
▷ Female researchers	35
Scientific and technical employment	19

Training & education	Rank
Employee training	02
Total public expenditure on education	11
Higher education achievement	25
Pupil-teacher ratio (tertiary education)	18
Graduates in Sciences	25
Women with degrees	23
Computer science education index	28

Scientific concentration	Rank
Total expenditure on R&D (%)	11
Total R&D personnel per capita	03
▷ R&D productivity by publication	47
▷ High-tech patent grants	35
AI-related patent publications	18
Robots in Education and R&D	25
AI articles	05

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	04	06	10	07	02
Capital	13	14	10	09	22
Technological framework	06	06	06	08	04

Regulatory framework	Rank
Starting a business	25
Enforcing contracts	13
Immigration laws	25
Development & application of tech.	09
Scientific research legislation	06
Intellectual property rights	05
AI policies passed into law	08

Capital	Rank
▷ IT & media stock market capitalization	55
Funding for technological development	12
Banking and financial services	09
▶ Country credit rating	01
Venture capital	12
Investment in Telecommunications	21
AI private investment	26

Technological framework	Rank
Communications technology	11
▷ Mobile broadband subscribers	48
Wireless broadband	12
Internet users	09
Internet bandwidth speed	03
High-tech exports (%)	29
▶ Secure internet servers	01

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	04	05	08	04	04
Business agility	07	01	06	03	02
IT integration	01	01	02	02	04

Adaptive attitudes	Rank
▶ E-Participation	01
Internet retailing	07
Tablet possession	38
Smartphone possession	44
▶ Attitudes toward globalization	01
Flexibility and adaptability	10

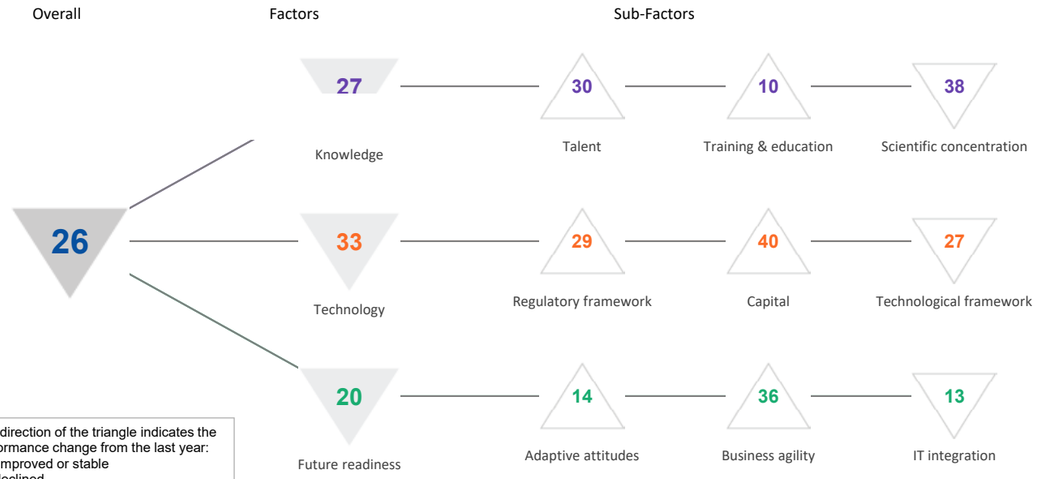
Business agility	Rank
Opportunities and threats	05
World robots distribution	29
Agility of companies	04
Use of big data and analytics	02
Knowledge transfer	03
Entrepreneurial fear of failure	-

IT integration	Rank
▶ E-Government	01
Public-private partnerships	13
Cyber security	19
Software piracy	08
Government cyber security capacity	23
Privacy protection by law exists	14

ESTONIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

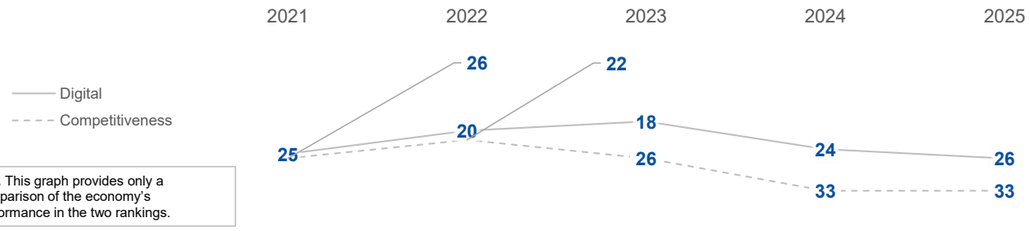


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	25	20	18	24	26
Knowledge	27	23	25	25	27
Technology	25	21	23	30	33
Future readiness	20	12	09	18	20

COMPETITIVENESS & DIGITAL RANKINGS



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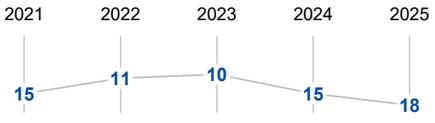
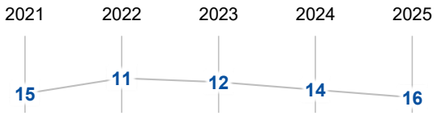
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



ESTONIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	29	30	28	33	30
Training & education	08	05	08	11	10
Scientific concentration	45	43	43	36	38

Talent	Rank
Educational assessment PISA - Math	07
▷ International experience	54
Management of cities	42
Digital/Technological skills	29
Foreign highly skilled personnel	36
Net flow of international students	32
Female researchers	22
Scientific and technical employment	28

Training & education	Rank
Employee training	14
Total public expenditure on education	08
Higher education achievement	35
Pupil-teacher ratio (tertiary education)	11
Graduates in Sciences	22
Women with degrees	18
Computer science education index	32

Scientific concentration	Rank
Total expenditure on R&D (%)	19
Total R&D personnel per capita	28
▷ R&D productivity by publication	60
High-tech patent grants	11
AI-related patent publications	52
Robots in Education and R&D	49
AI articles	17

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	28	30	18	29	29
Capital	33	29	35	43	40
Technological framework	20	21	13	20	27

Regulatory framework	Rank
Starting a business	07
Enforcing contracts	08
▷ Immigration laws	62
Development & application of tech.	25
Scientific research legislation	47
Intellectual property rights	27
AI policies passed into law	12

Capital	Rank
IT & media stock market capitalization	52
Funding for technological development	34
Banking and financial services	22
Country credit rating	27
Venture capital	28
Investment in Telecommunications	41
AI private investment	40

Technological framework	Rank
Communications technology	39
▷ Mobile broadband subscribers	55
▶ Wireless broadband	04
Internet users	28
Internet bandwidth speed	40
High-tech exports (%)	31
Secure internet servers	10

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	20	14	09	17	14
Business agility	25	20	23	37	36
IT integration	25	07	05	10	13

Adaptive attitudes	Rank
▶ E-Participation	06
Internet retailing	18
▶ Tablet possession	05
Smartphone possession	07
Attitudes toward globalization	40
Flexibility and adaptability	27

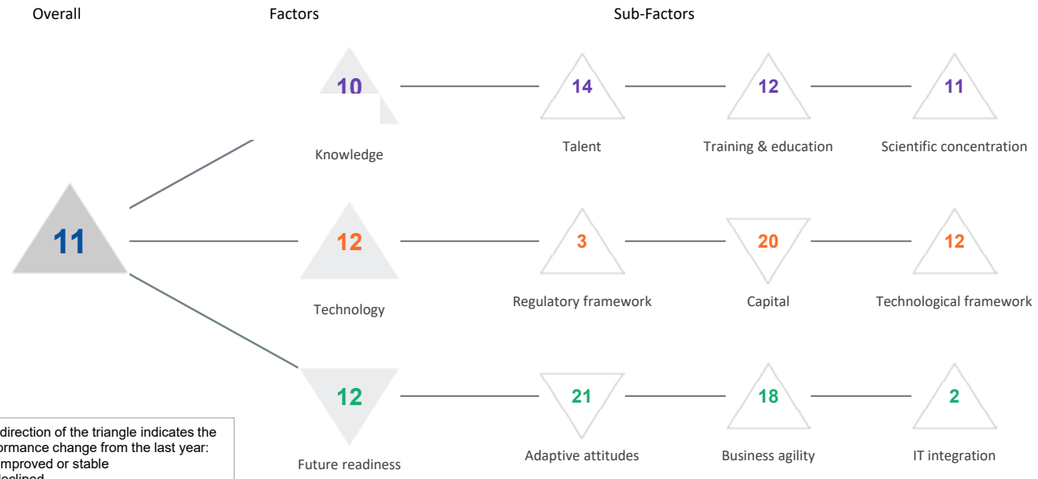
Business agility	Rank
Opportunities and threats	25
World robots distribution	47
Agility of companies	15
Use of big data and analytics	47
Knowledge transfer	45
Entrepreneurial fear of failure	21

IT integration	Rank
▶ E-Government	02
▷ Public-private partnerships	65
Cyber security	21
Software piracy	29
▶ Government cyber security capacity	01
Privacy protection by law exists	18

FINLAND

DIGITAL TRENDS - OVERALL

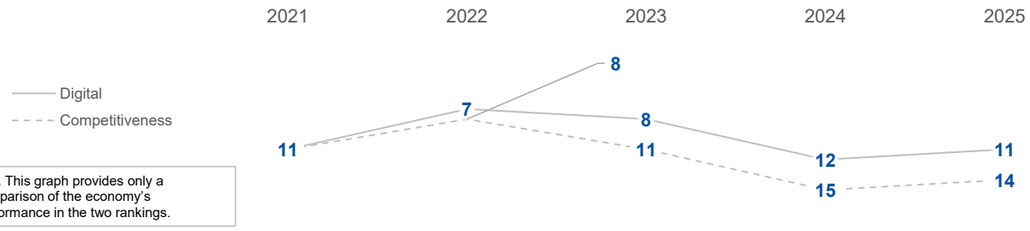
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	11	07	08	12	11
Knowledge	09	09	11	12	10
Technology	12	08	09	16	12
Future readiness	09	06	05	09	12

COMPETITIVENESS & DIGITAL RANKINGS



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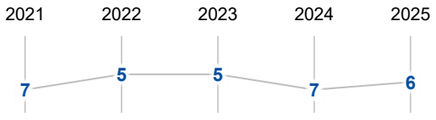
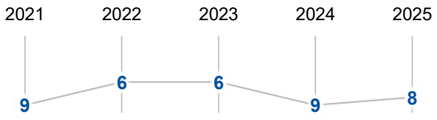
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



FINLAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	10	09	11	16	14
Training & education	19	17	19	17	12
Scientific concentration	10	10	13	12	11

Talent	Rank
Educational assessment PISA - Math	20
International experience	25
Management of cities	08
▶ Digital/Technological skills	05
▷ Foreign highly skilled personnel	47
Net flow of international students	13
Female researchers	41
Scientific and technical employment	08

Training & education	Rank
▶ Employee training	05
Total public expenditure on education	07
▷ Higher education achievement	43
Pupil-teacher ratio (tertiary education)	43
Graduates in Sciences	13
Women with degrees	19
Computer science education index	14

Scientific concentration	Rank
Total expenditure on R&D (%)	10
Total R&D personnel per capita	08
▷ R&D productivity by publication	53
High-tech patent grants	10
AI-related patent publications	14
Robots in Education and R&D	26
AI articles	11

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	11	05	03	19	03
Capital	10	05	07	14	20
Technological framework	14	12	11	18	12

Regulatory framework	Rank
Starting a business	17
Enforcing contracts	33
Immigration laws	26
Development & application of tech.	10
Scientific research legislation	05
▶ Intellectual property rights	02
AI policies passed into law	09

Capital	Rank
IT & media stock market capitalization	15
Funding for technological development	10
Banking and financial services	14
Country credit rating	14
Venture capital	22
▷ Investment in Telecommunications	62
AI private investment	34

Technological framework	Rank
▶ Communications technology	02
Mobile broadband subscribers	39
Wireless broadband	08
Internet users	27
Internet bandwidth speed	31
▷ High-tech exports (%)	45
Secure internet servers	06

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	07	03	03	10	21
Business agility	21	16	21	24	18
IT integration	02	03	03	04	02

Adaptive attitudes	Rank
E-Participation	18
Internet retailing	14
Tablet possession	33
Smartphone possession	24
Attitudes toward globalization	14
Flexibility and adaptability	41

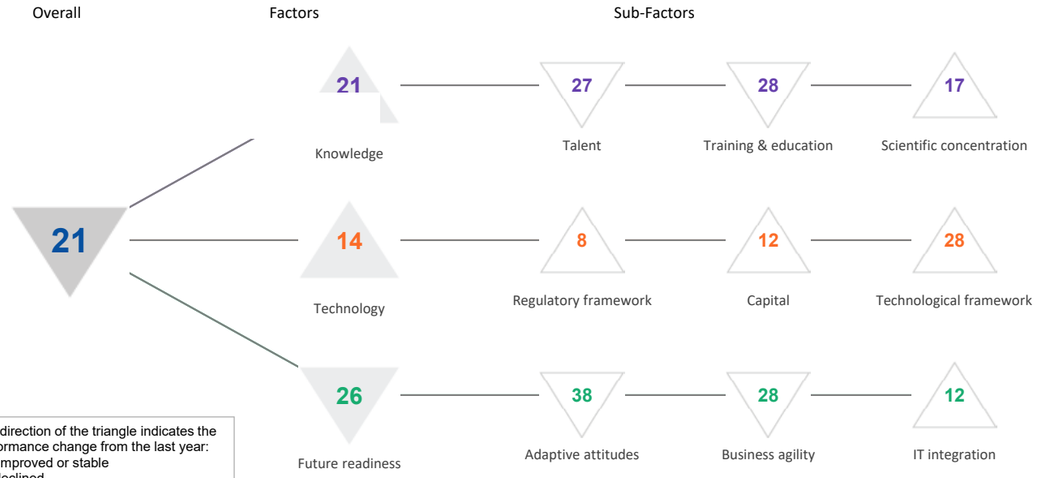
Business agility	Rank
Opportunities and threats	36
World robots distribution	35
Agility of companies	23
Use of big data and analytics	05
Knowledge transfer	09
Entrepreneurial fear of failure	19

IT integration	Rank
E-Government	09
Public-private partnerships	09
▶ Cyber security	03
Software piracy	13
Government cyber security capacity	39
Privacy protection by law exists	36

FRANCE

DIGITAL TRENDS - OVERALL

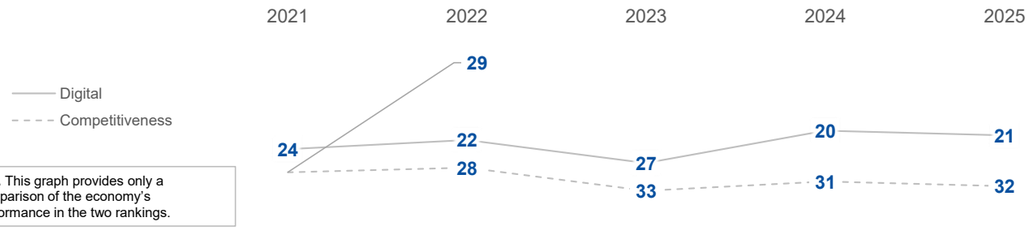
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	24	22	27	20	21
Knowledge	20	20	22	22	21
Technology	16	16	20	18	14
Future readiness	31	34	35	23	26

COMPETITIVENESS & DIGITAL RANKINGS



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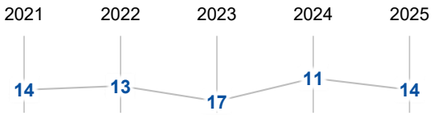
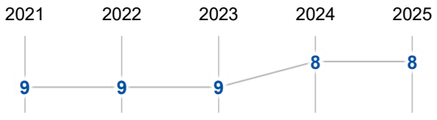
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS > 20 MILLION (32 economies)



FRANCE

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	23	23	24	25	27
Training & education	27	27	29	21	28
Scientific concentration	12	13	14	20	17

Talent	Rank
Educational assessment PISA - Math	27
International experience	37
Management of cities	24
Digital/Technological skills	30
Foreign highly skilled personnel	21
Net flow of international students	24
▷ Female researchers	51
Scientific and technical employment	10

Training & education	Rank
Employee training	41
Total public expenditure on education	24
Higher education achievement	21
Pupil-teacher ratio (tertiary education)	39
Graduates in Sciences	26
Women with degrees	27
Computer science education index	11

Scientific concentration	Rank
Total expenditure on R&D (%)	16
Total R&D personnel per capita	24
R&D productivity by publication	18
High-tech patent grants	17
▶ AI-related patent publications	07
▶ Robots in Education and R&D	05
AI articles	44

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	10	15	21	15	08
Capital	21	19	28	21	12
Technological framework	17	20	19	31	28

Regulatory framework	Rank
Starting a business	20
Enforcing contracts	15
Immigration laws	15
Development & application of tech.	36
Scientific research legislation	24
Intellectual property rights	25
▶ AI policies passed into law	03

Capital	Rank
IT & media stock market capitalization	31
Funding for technological development	26
▷ Banking and financial services	47
Country credit rating	23
Venture capital	23
▶ Investment in Telecommunications	07
AI private investment	06

Technological framework	Rank
Communications technology	33
Mobile broadband subscribers	34
Wireless broadband	41
▷ Internet users	46
▶ Internet bandwidth speed	04
High-tech exports (%)	19
Secure internet servers	20

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	48	41	43	35	38
Business agility	33	38	41	23	28
IT integration	22	21	24	16	12

Adaptive attitudes	Rank
E-Participation	28
Internet retailing	21
Tablet possession	19
Smartphone possession	32
▷ Attitudes toward globalization	60
▷ Flexibility and adaptability	63

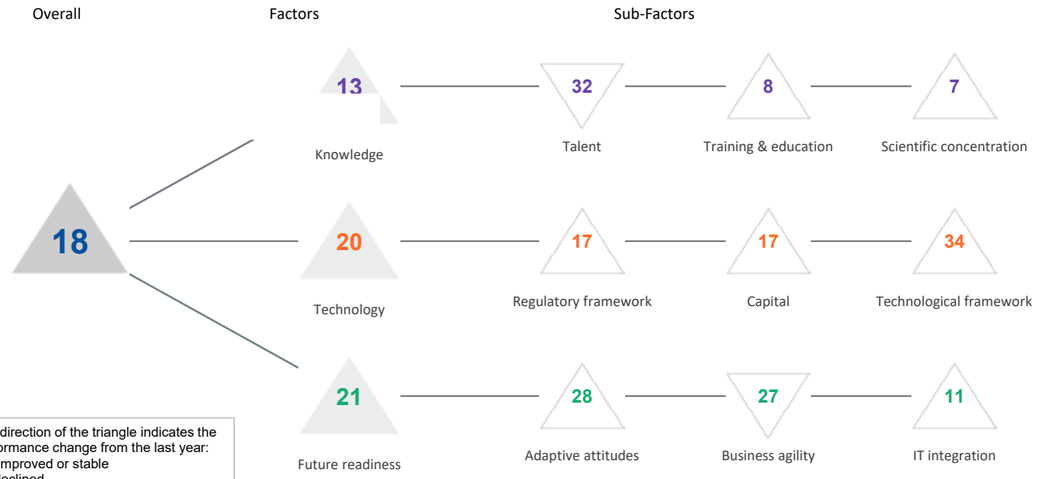
Business agility	Rank
Opportunities and threats	44
World robots distribution	08
Agility of companies	38
Use of big data and analytics	32
Knowledge transfer	26
Entrepreneurial fear of failure	13

IT integration	Rank
E-Government	30
Public-private partnerships	27
Cyber security	25
Software piracy	19
Government cyber security capacity	14
Privacy protection by law exists	10

GERMANY

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

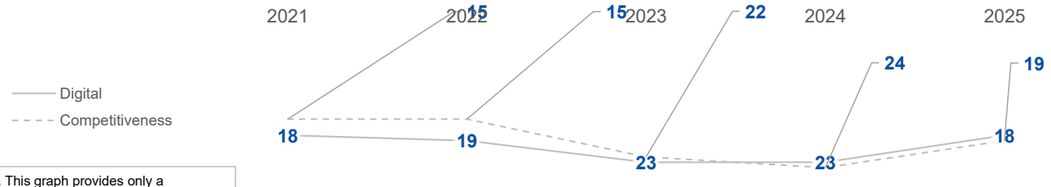


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	18	19	23	23	18
Knowledge	14	11	14	20	13
Technology	31	27	34	29	20
Future readiness	18	19	24	22	21

COMPETITIVENESS & DIGITAL RANKINGS



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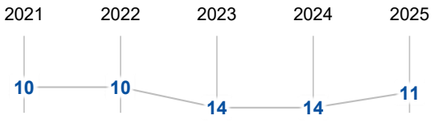
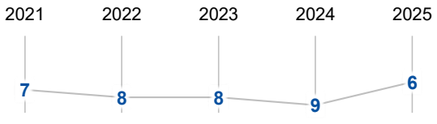
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS > 20 MILLION (32 economies)



GERMANY

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	21	20	26	29	32
Training & education	17	15	14	10	08
Scientific concentration	06	07	07	13	07

Talent	Rank
Educational assessment PISA - Math	25
International experience	24
Management of cities	20
▷ Digital/Technological skills	58
Foreign highly skilled personnel	40
Net flow of international students	14
Female researchers	52
Scientific and technical employment	24

Training & education	Rank
Employee training	08
Total public expenditure on education	39
Higher education achievement	45
Pupil-teacher ratio (tertiary education)	04
Graduates in Sciences	05
Women with degrees	44
Computer science education index	04

Scientific concentration	Rank
Total expenditure on R&D (%)	09
Total R&D personnel per capita	14
R&D productivity by publication	15
High-tech patent grants	16
AI-related patent publications	05
▶ Robots in Education and R&D	03
AI articles	30

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	25	20	32	22	17
Capital	23	16	21	25	17
Technological framework	43	43	47	43	34

Regulatory framework	Rank
Starting a business	53
Enforcing contracts	12
Immigration laws	36
Development & application of tech.	51
Scientific research legislation	31
▶ Intellectual property rights	03
▶ AI policies passed into law	02

Capital	Rank
IT & media stock market capitalization	08
Funding for technological development	39
Banking and financial services	34
▶ Country credit rating	01
Venture capital	47
Investment in Telecommunications	29
AI private investment	07

Technological framework	Rank
▷ Communications technology	53
Mobile broadband subscribers	33
Wireless broadband	45
Internet users	32
Internet bandwidth speed	37
High-tech exports (%)	26
Secure internet servers	08

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	23	27	28	32	28
Business agility	15	15	20	19	27
IT integration	20	19	18	18	11

Adaptive attitudes	Rank
▶ E-Participation	03
Internet retailing	13
Tablet possession	30
Smartphone possession	53
Attitudes toward globalization	26
▷ Flexibility and adaptability	62

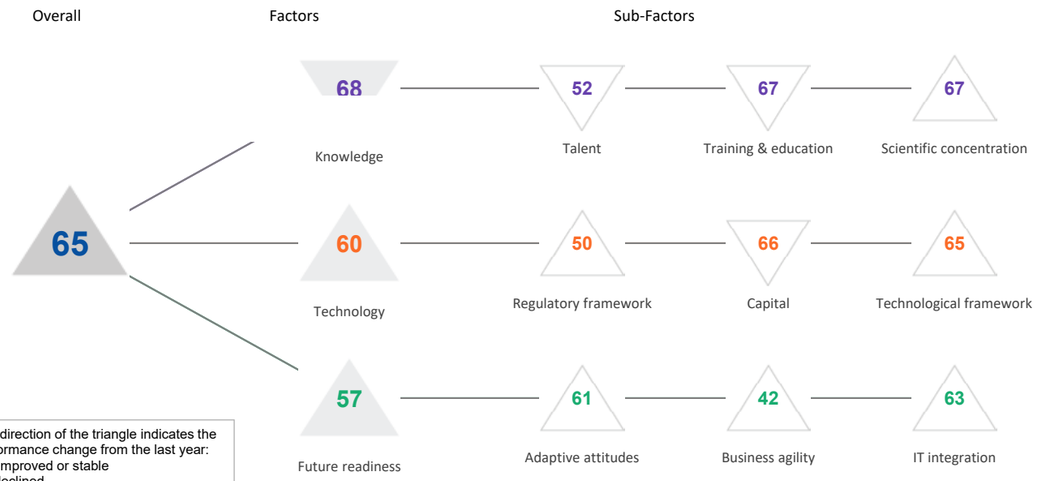
Business agility	Rank
▷ Opportunities and threats	60
World robots distribution	05
Agility of companies	41
▷ Use of big data and analytics	53
Knowledge transfer	15
Entrepreneurial fear of failure	22

IT integration	Rank
E-Government	12
Public-private partnerships	44
Cyber security	28
Software piracy	08
Government cyber security capacity	13
Privacy protection by law exists	35

GHANA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)



The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	-	-	65	65
Knowledge	-	-	-	66	68
Technology	-	-	-	66	60
Future readiness	-	-	-	65	57

COMPETITIVENESS & DIGITAL RANKINGS

N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS > 20 MILLION (32 economies)

GHANA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	-	-	47	52
Training & education	-	-	-	65	67
Scientific concentration	-	-	-	67	67

Talent	Rank
Educational assessment PISA - Math	-
International experience	35
Management of cities	36
Digital/Technological skills	52
Foreign highly skilled personnel	32
Net flow of international students	52
Female researchers	-
Scientific and technical employment	60

Training & education	Rank
Employee training	52
Total public expenditure on education	64
Higher education achievement	64
Pupil-teacher ratio (tertiary education)	56
Graduates in Sciences	58
Women with degrees	63
Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	-
Total R&D personnel per capita	-
R&D productivity by publication	-
▷ High-tech patent grants	65
AI-related patent publications	-
Robots in Education and R&D	-
AI articles	63

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	-	-	57	50
Capital	-	-	-	65	66
Technological framework	-	-	-	65	65

Regulatory framework	Rank
Starting a business	50
Enforcing contracts	59
▶ Immigration laws	22
Development & application of tech.	35
▶ Scientific research legislation	25
Intellectual property rights	59
AI policies passed into law	50

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	50
Banking and financial services	53
▷ Country credit rating	67
Venture capital	60
Investment in Telecommunications	46
AI private investment	38

Technological framework	Rank
Communications technology	62
▷ Mobile broadband subscribers	66
Wireless broadband	34
Internet users	63
Internet bandwidth speed	64
High-tech exports (%)	62
▷ Secure internet servers	68

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	-	-	64	61
Business agility	-	-	-	55	42
IT integration	-	-	-	64	63

Adaptive attitudes	Rank
E-Participation	58
Internet retailing	61
Tablet possession	61
Smartphone possession	41
▶ Attitudes toward globalization	31
▶ Flexibility and adaptability	28

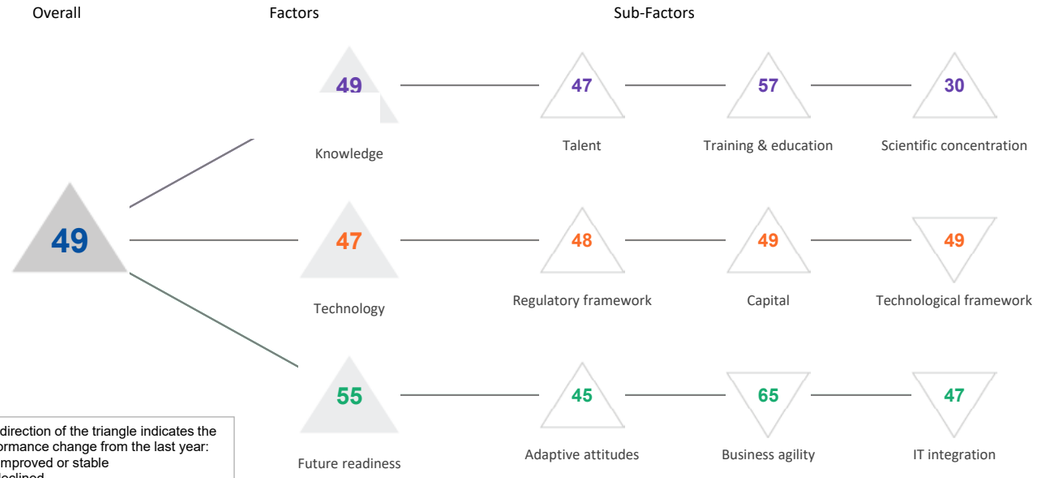
Business agility	Rank
Opportunities and threats	33
World robots distribution	-
Agility of companies	54
Use of big data and analytics	36
Knowledge transfer	41
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	61
▶ Public-private partnerships	25
Cyber security	48
Software piracy	-
▷ Government cyber security capacity	66
Privacy protection by law exists	52

GREECE

DIGITAL TRENDS - OVERALL

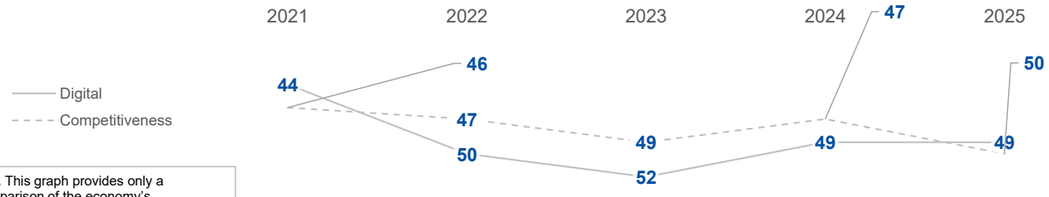
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	44	50	52	49	49
Knowledge	45	47	51	50	49
Technology	46	47	47	48	47
Future readiness	43	60	57	56	55

COMPETITIVENESS & DIGITAL RANKINGS



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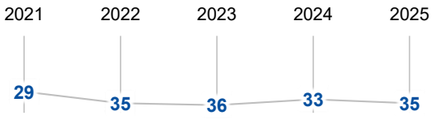
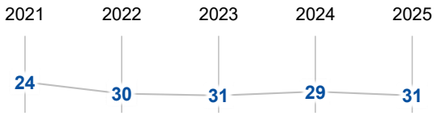
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



GREECE

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	42	49	53	54	47
Training & education	55	59	59	58	57
Scientific concentration	35	33	31	35	30

Talent	Rank
Educational assessment PISA - Math	39
International experience	53
Management of cities	56
Digital/Technological skills	48
Foreign highly skilled personnel	58
Net flow of international students	55
Female researchers	23
▶ Scientific and technical employment	12

Training & education	Rank
Employee training	54
Total public expenditure on education	47
Higher education achievement	32
▷ Pupil-teacher ratio (tertiary education)	62
Graduates in Sciences	23
Women with degrees	36
Computer science education index	22

Scientific concentration	Rank
Total expenditure on R&D (%)	28
Total R&D personnel per capita	27
R&D productivity by publication	34
High-tech patent grants	47
AI-related patent publications	26
Robots in Education and R&D	40
AI articles	23

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	43	42	46	50	48
Capital	52	46	37	51	49
Technological framework	50	50	52	48	49

Regulatory framework	Rank
▶ Starting a business	06
▷ Enforcing contracts	64
Immigration laws	53
Development & application of tech.	47
Scientific research legislation	49
Intellectual property rights	53
▶ AI policies passed into law	20

Capital	Rank
IT & media stock market capitalization	21
Funding for technological development	40
▷ Banking and financial services	61
Country credit rating	52
Venture capital	49
▶ Investment in Telecommunications	18
AI private investment	37

Technological framework	Rank
Communications technology	52
Mobile broadband subscribers	22
▶ Wireless broadband	16
Internet users	51
▷ Internet bandwidth speed	58
High-tech exports (%)	34
Secure internet servers	39

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	43	60	61	57	45
Business agility	51	61	60	60	65
IT integration	41	41	43	44	47

Adaptive attitudes	Rank
E-Participation	47
Internet retailing	31
Tablet possession	26
Smartphone possession	58
Attitudes toward globalization	48
Flexibility and adaptability	37

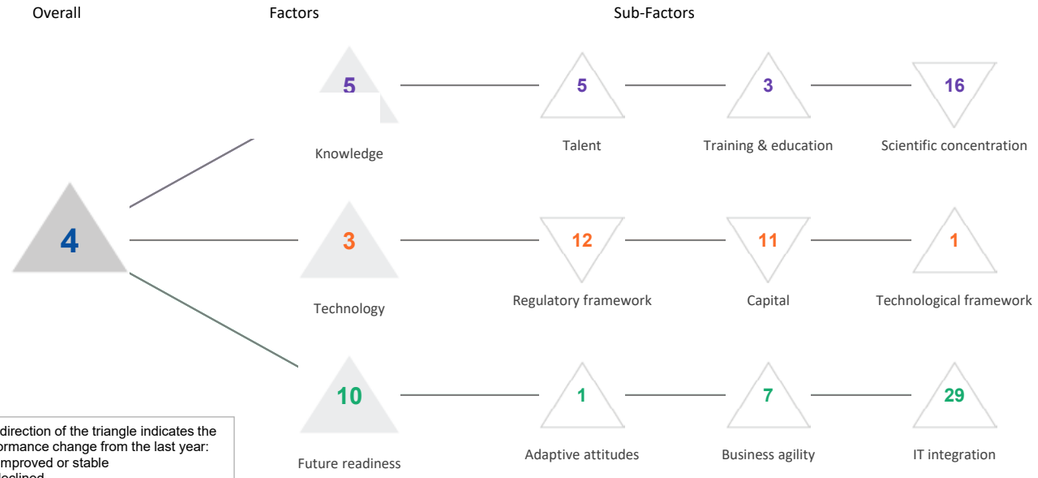
Business agility	Rank
Opportunities and threats	58
World robots distribution	44
Agility of companies	48
▷ Use of big data and analytics	62
Knowledge transfer	57
Entrepreneurial fear of failure	45

IT integration	Rank
E-Government	32
Public-private partnerships	51
Cyber security	52
Software piracy	55
Government cyber security capacity	30
Privacy protection by law exists	41

HONG KONG SAR

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

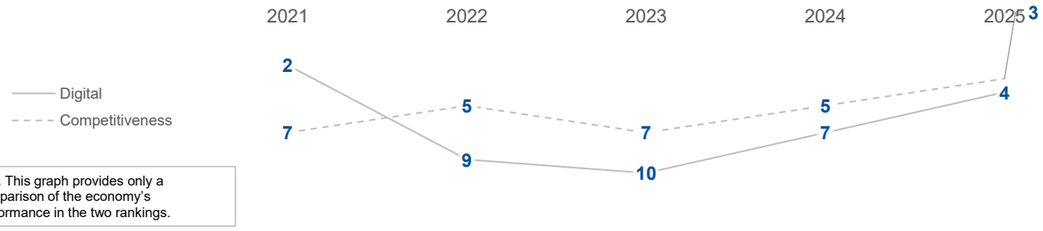


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	02	09	10	07	04
Knowledge	05	07	06	05	05
Technology	01	02	02	03	03
Future readiness	10	18	17	15	10

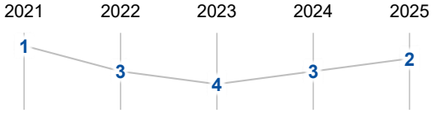
COMPETITIVENESS & DIGITAL RANKINGS



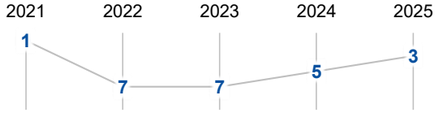
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS < 20 MILLION (37 economies)



HONG KONG SAR

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	06	10	06	08	05
Training & education	01	02	05	04	03
Scientific concentration	14	18	08	08	16

Talent	Rank
Educational assessment PISA - Math	04
International experience	06
Management of cities	03
Digital/Technological skills	14
Foreign highly skilled personnel	16
Net flow of international students	18
Female researchers	-
Scientific and technical employment	07

Training & education	Rank
Employee training	18
▷ Total public expenditure on education	49
Higher education achievement	04
Pupil-teacher ratio (tertiary education)	28
▶ Graduates in Sciences	01
Women with degrees	-
Computer science education index	17

Scientific concentration	Rank
Total expenditure on R&D (%)	36
Total R&D personnel per capita	31
R&D productivity by publication	28
▶ High-tech patent grants	02
AI-related patent publications	22
Robots in Education and R&D	28
AI articles	08

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	06	09	06	08	12
Capital	07	08	14	07	11
Technological framework	01	01	01	01	01

Regulatory framework	Rank
Starting a business	04
Enforcing contracts	24
Immigration laws	06
Development & application of tech.	08
Scientific research legislation	07
Intellectual property rights	06
▷ AI policies passed into law	58

Capital	Rank
IT & media stock market capitalization	04
Funding for technological development	09
Banking and financial services	08
Country credit rating	19
Venture capital	10
▷ Investment in Telecommunications	57
AI private investment	21

Technological framework	Rank
Communications technology	06
Mobile broadband subscribers	12
Wireless broadband	03
Internet users	18
Internet bandwidth speed	19
▶ High-tech exports (%)	02
Secure internet servers	09

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	03	09	05	03	01
Business agility	09	11	16	12	07
IT integration	17	45	47	36	29

Adaptive attitudes	Rank
E-Participation	-
Internet retailing	12
Tablet possession	11
Smartphone possession	02
▶ Attitudes toward globalization	02
Flexibility and adaptability	04

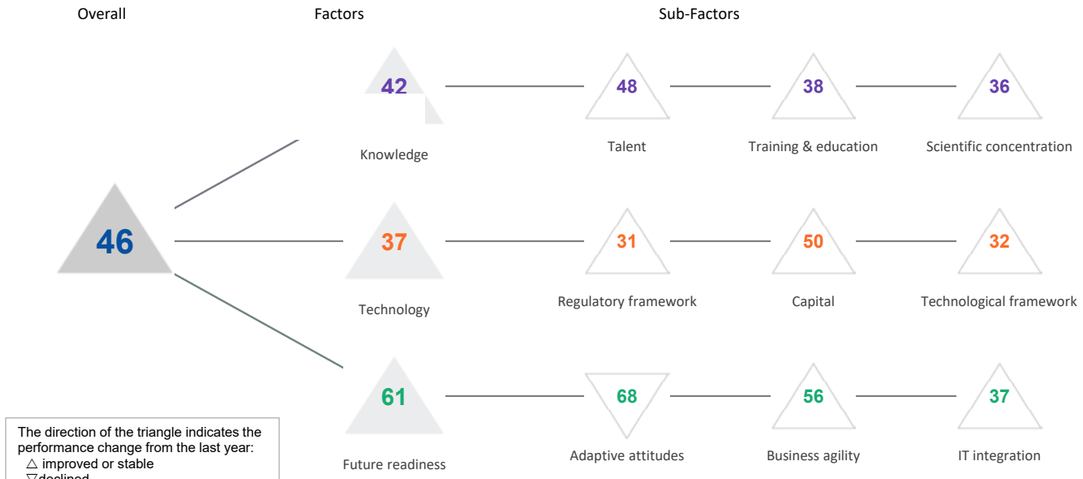
Business agility	Rank
▶ Opportunities and threats	02
World robots distribution	37
Agility of companies	05
Use of big data and analytics	07
Knowledge transfer	06
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	-
Public-private partnerships	05
Cyber security	07
Software piracy	27
▷ Government cyber security capacity	44
▷ Privacy protection by law exists	49

HUNGARY

DIGITAL TRENDS - OVERALL

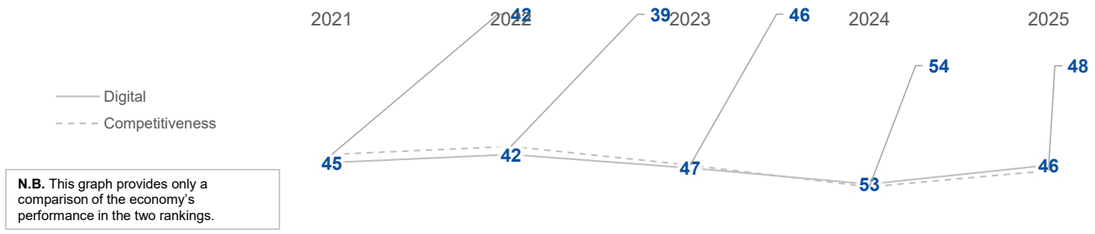
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	45	42	47	53	46
Knowledge	43	43	46	46	42
Technology	36	31	36	43	37
Future readiness	61	57	61	63	61

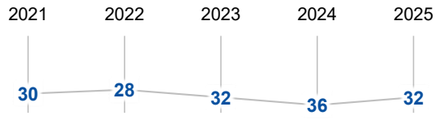
COMPETITIVENESS & DIGITAL RANKINGS



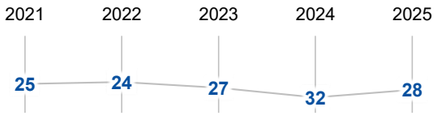
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



HUNGARY

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	43	40	45	55	48
Training & education	47	44	47	41	38
Scientific concentration	42	38	42	44	36

Talent	Rank
Educational assessment PISA - Math	28
International experience	42
Management of cities	48
Digital/Technological skills	53
Foreign highly skilled personnel	60
Net flow of international students	19
Female researchers	53
Scientific and technical employment	33

Training & education	Rank
Employee training	42
Total public expenditure on education	19
Higher education achievement	51
▶ Pupil-teacher ratio (tertiary education)	13
Graduates in Sciences	39
Women with degrees	37
Computer science education index	42

Scientific concentration	Rank
Total expenditure on R&D (%)	32
Total R&D personnel per capita	29
R&D productivity by publication	42
High-tech patent grants	40
AI-related patent publications	35
Robots in Education and R&D	34
AI articles	31

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	36	26	35	40	31
Capital	45	42	46	54	50
Technological framework	21	19	29	40	32

Regulatory framework	Rank
Starting a business	38
Enforcing contracts	21
Immigration laws	32
Development & application of tech.	40
Scientific research legislation	43
Intellectual property rights	33
AI policies passed into law	20

Capital	Rank
IT & media stock market capitalization	28
Funding for technological development	42
Banking and financial services	41
Country credit rating	51
Venture capital	54
Investment in Telecommunications	24
AI private investment	54

Technological framework	Rank
Communications technology	30
Mobile broadband subscribers	32
Wireless broadband	43
Internet users	35
▶ Internet bandwidth speed	15
High-tech exports (%)	25
▶ Secure internet servers	18

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	62	62	62	66	68
Business agility	62	48	55	65	56
IT integration	42	35	37	42	37

Adaptive attitudes	Rank
E-Participation	57
Internet retailing	39
Tablet possession	49
Smartphone possession	61
▷ Attitudes toward globalization	69
▷ Flexibility and adaptability	68

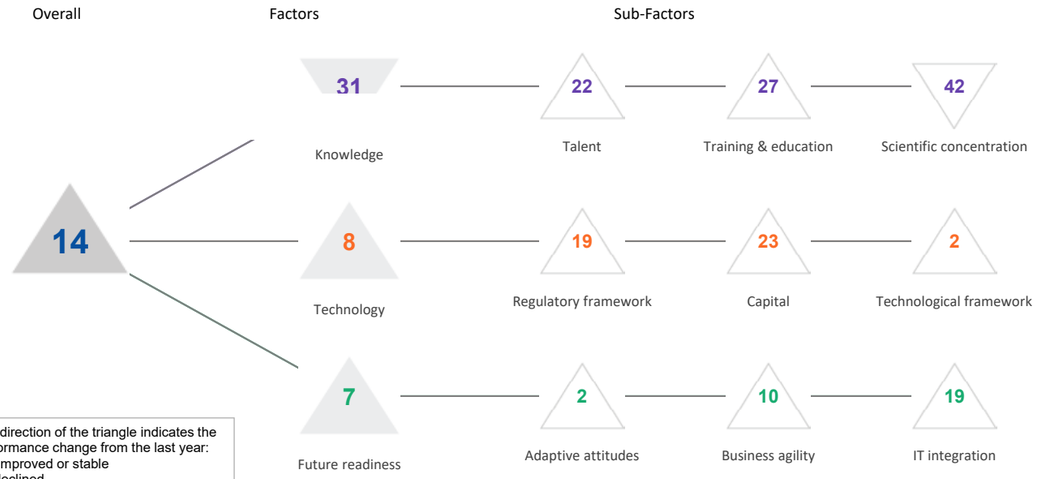
Business agility	Rank
▷ Opportunities and threats	66
World robots distribution	25
▷ Agility of companies	63
▷ Use of big data and analytics	63
Knowledge transfer	50
▶ Entrepreneurial fear of failure	06

IT integration	Rank
E-Government	51
Public-private partnerships	49
Cyber security	34
Software piracy	26
Government cyber security capacity	29
▶ Privacy protection by law exists	09

ICELAND

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

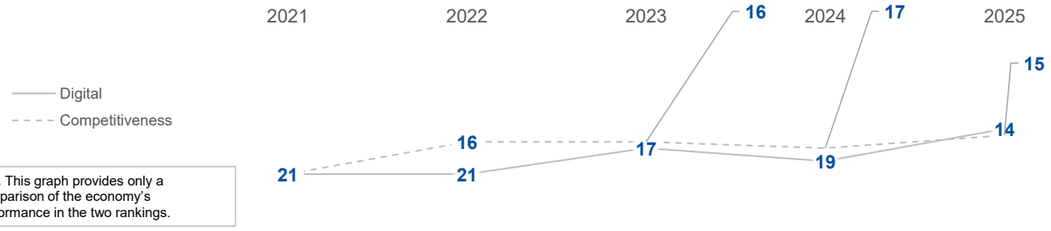


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	21	21	17	19	14
Knowledge	33	31	32	30	31
Technology	10	11	08	12	08
Future readiness	25	21	14	16	07

COMPETITIVENESS & DIGITAL RANKINGS



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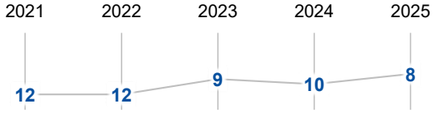
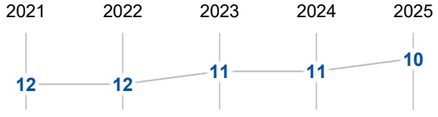
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



ICELAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	35	24	32	35	22
Training & education	22	26	26	30	27
Scientific concentration	39	45	37	30	42

Talent	Rank
Educational assessment PISA - Math	36
International experience	48
Management of cities	32
▶ Digital/Technological skills	03
Foreign highly skilled personnel	26
▷ Net flow of international students	57
Female researchers	16
Scientific and technical employment	21

Training & education	Rank
Employee training	33
Total public expenditure on education	04
Higher education achievement	33
Pupil-teacher ratio (tertiary education)	27
▷ Graduates in Sciences	57
Women with degrees	12
Computer science education index	27

Scientific concentration	Rank
Total expenditure on R&D (%)	13
Total R&D personnel per capita	09
▷ R&D productivity by publication	62
High-tech patent grants	49
AI-related patent publications	48
▷ Robots in Education and R&D	53
AI articles	07

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	14	11	11	20	19
Capital	26	17	27	24	23
Technological framework	03	05	04	02	02

Regulatory framework	Rank
Starting a business	32
Enforcing contracts	25
Immigration laws	04
Development & application of tech.	12
Scientific research legislation	17
Intellectual property rights	09
AI policies passed into law	53

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	15
Banking and financial services	03
Country credit rating	29
Venture capital	14
▷ Investment in Telecommunications	55
AI private investment	41

Technological framework	Rank
Communications technology	05
Mobile broadband subscribers	04
Wireless broadband	14
Internet users	04
▶ Internet bandwidth speed	01
High-tech exports (%)	08
Secure internet servers	12

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	31	21	11	02	02
Business agility	16	12	13	16	10
IT integration	27	30	31	34	19

Adaptive attitudes	Rank
E-Participation	06
Internet retailing	23
Tablet possession	-
▶ Smartphone possession	01
Attitudes toward globalization	09
▶ Flexibility and adaptability	01

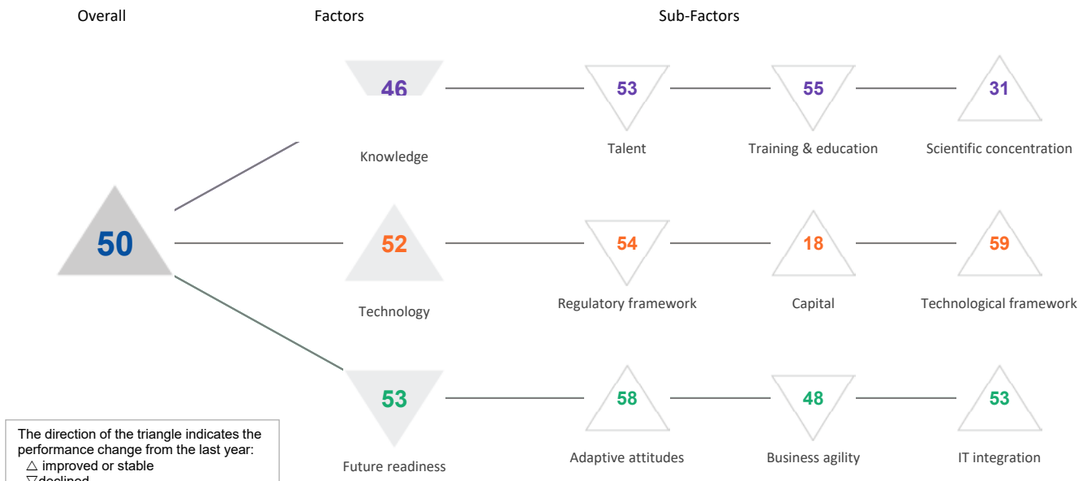
Business agility	Rank
Opportunities and threats	06
World robots distribution	52
▶ Agility of companies	03
Use of big data and analytics	09
Knowledge transfer	16
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	05
Public-private partnerships	48
Cyber security	13
Software piracy	34
Government cyber security capacity	24
Privacy protection by law exists	37

INDIA

DIGITAL TRENDS - OVERALL

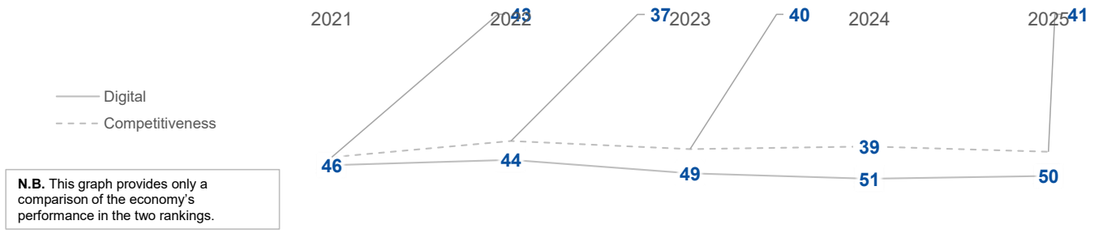
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

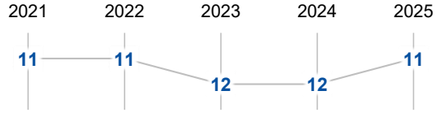
	2021	2022	2023	2024	2025
OVERALL	46	44	49	51	50
Knowledge	41	46	45	45	46
Technology	44	43	50	53	52
Future readiness	50	42	51	52	53

COMPETITIVENESS & DIGITAL RANKINGS

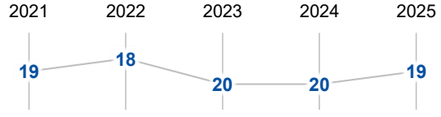


PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS > 20 MILLION (32 economies)



INDIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	38	34	34	30	53
Training & education	43	56	48	52	55
Scientific concentration	47	50	52	53	31

Talent	Rank
Educational assessment PISA - Math	-
International experience	43
Management of cities	47
Digital/Technological skills	22
Foreign highly skilled personnel	46
Net flow of international students	51
Female researchers	-
▷ Scientific and technical employment	61

Training & education	Rank
Employee training	44
Total public expenditure on education	59
Higher education achievement	57
Pupil-teacher ratio (tertiary education)	54
Graduates in Sciences	21
Women with degrees	60
▶ Computer science education index	06

Scientific concentration	Rank
Total expenditure on R&D (%)	47
Total R&D personnel per capita	56
▶ R&D productivity by publication	02
High-tech patent grants	41
▶ AI-related patent publications	15
Robots in Education and R&D	23
▷ AI articles	61

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	52	48	52	49	54
Capital	04	01	23	39	18
Technological framework	62	58	60	63	59

Regulatory framework	Rank
Starting a business	60
▷ Enforcing contracts	67
Immigration laws	37
Development & application of tech.	21
Scientific research legislation	36
Intellectual property rights	49
AI policies passed into law	35

Capital	Rank
▶ IT & media stock market capitalization	13
Funding for technological development	27
Banking and financial services	27
Country credit rating	52
Venture capital	19
Investment in Telecommunications	17
AI private investment	11

Technological framework	Rank
Communications technology	32
Mobile broadband subscribers	52
▷ Wireless broadband	63
▷ Internet users	66
Internet bandwidth speed	53
High-tech exports (%)	35
Secure internet servers	54

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	55	56	60	62	58
Business agility	36	25	30	34	48
IT integration	51	48	52	57	53

Adaptive attitudes	Rank
E-Participation	49
Internet retailing	58
Tablet possession	55
Smartphone possession	59
Attitudes toward globalization	17
Flexibility and adaptability	24

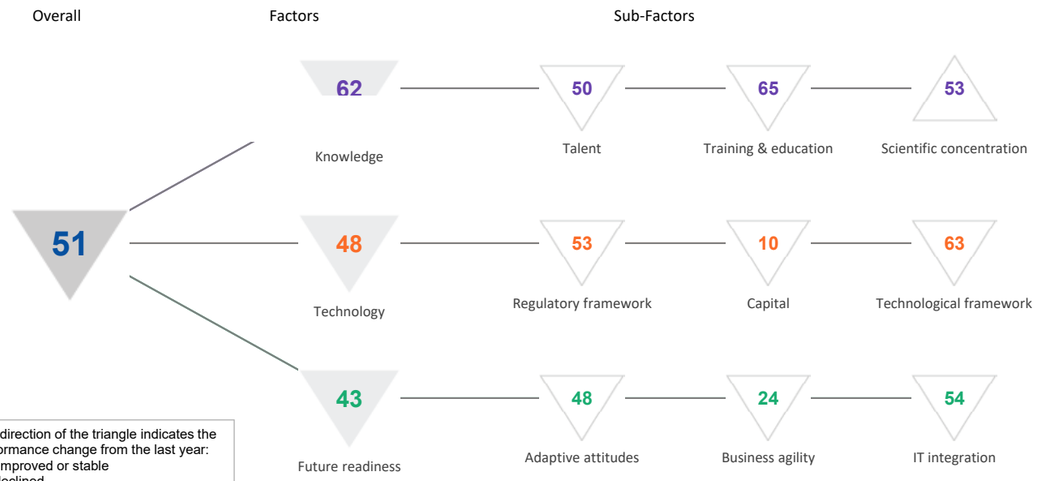
Business agility	Rank
Opportunities and threats	21
▶ World robots distribution	12
Agility of companies	28
Use of big data and analytics	22
Knowledge transfer	42
Entrepreneurial fear of failure	51

IT integration	Rank
E-Government	60
Public-private partnerships	29
Cyber security	32
Software piracy	49
Government cyber security capacity	28
Privacy protection by law exists	60

INDONESIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

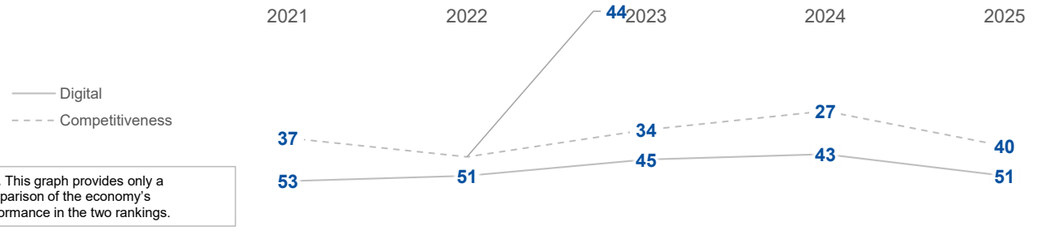


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	53	51	45	43	51
Knowledge	60	60	60	53	62
Technology	49	45	39	40	48
Future readiness	48	52	43	30	43

COMPETITIVENESS & DIGITAL RANKINGS



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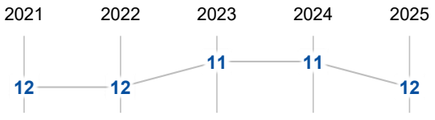
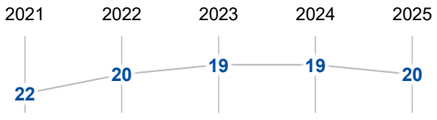
PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS > 20 MILLION (32 economies)



INDONESIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	48	45	42	27	50
Training & education	64	62	61	63	65
Scientific concentration	44	54	59	60	53

Talent	Rank
Educational assessment PISA - Math	55
International experience	27
Management of cities	38
Digital/Technological skills	42
Foreign highly skilled personnel	27
Net flow of international students	-
Female researchers	19
Scientific and technical employment	62

Training & education	Rank
Employee training	29
▷ Total public expenditure on education	66
Higher education achievement	61
Pupil-teacher ratio (tertiary education)	59
Graduates in Sciences	-
Women with degrees	59
Computer science education index	47

Scientific concentration	Rank
Total expenditure on R&D (%)	59
Total R&D personnel per capita	-
▶ R&D productivity by publication	03
▷ High-tech patent grants	64
AI-related patent publications	52
Robots in Education and R&D	43
AI articles	64

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	50	49	45	45	53
Capital	25	18	03	01	10
Technological framework	55	56	57	59	63

Regulatory framework	Rank
Starting a business	63
Enforcing contracts	62
Immigration laws	18
Development & application of tech.	29
Scientific research legislation	53
Intellectual property rights	54
AI policies passed into law	37

Capital	Rank
▶ IT & media stock market capitalization	14
Funding for technological development	35
▶ Banking and financial services	17
Country credit rating	48
Venture capital	20
▶ Investment in Telecommunications	01
AI private investment	35

Technological framework	Rank
Communications technology	49
Mobile broadband subscribers	57
Wireless broadband	51
▷ Internet users	64
▷ Internet bandwidth speed	66
High-tech exports (%)	49
Secure internet servers	49

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	57	55	54	41	48
Business agility	26	22	10	10	24
IT integration	60	60	59	39	54

Adaptive attitudes	Rank
E-Participation	30
Internet retailing	49
Tablet possession	57
Smartphone possession	55
Attitudes toward globalization	28
Flexibility and adaptability	25

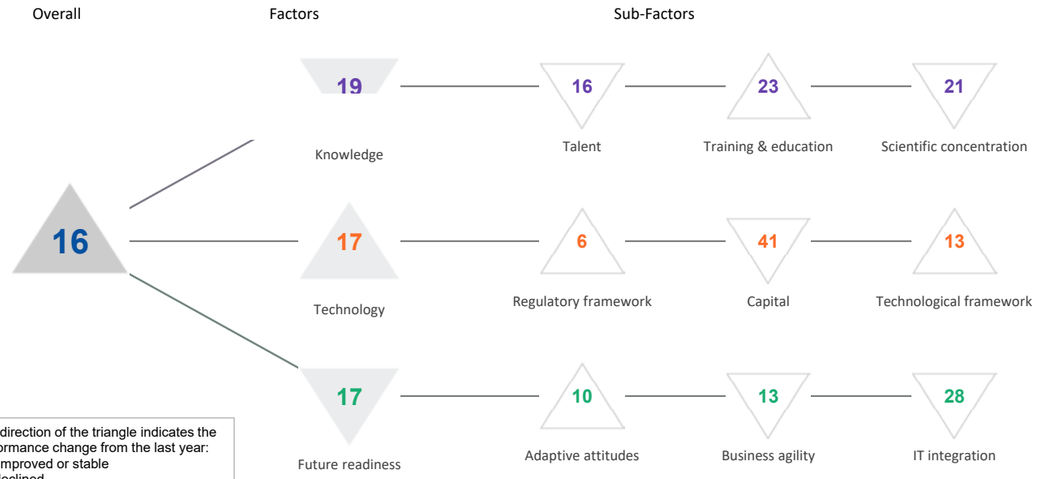
Business agility	Rank
Opportunities and threats	17
World robots distribution	27
Agility of companies	27
Use of big data and analytics	25
Knowledge transfer	34
▶ Entrepreneurial fear of failure	07

IT integration	Rank
E-Government	53
Public-private partnerships	31
Cyber security	47
▷ Software piracy	65
Government cyber security capacity	25
Privacy protection by law exists	53

IRELAND

DIGITAL TRENDS - OVERALL

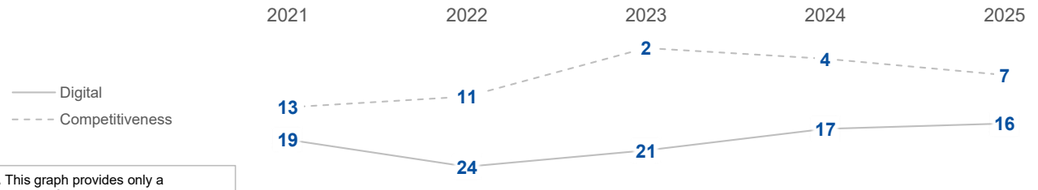
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	19	24	21	17	16
Knowledge	23	22	19	16	19
Technology	28	37	28	20	17
Future readiness	14	22	22	11	17

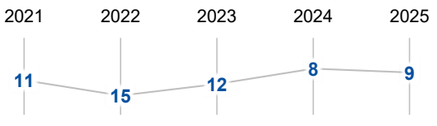
COMPETITIVENESS & DIGITAL RANKINGS



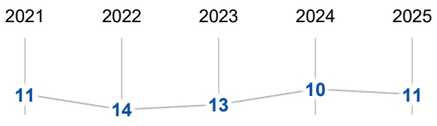
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



IRELAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	18	19	16	12	16
Training & education	32	31	24	25	23
Scientific concentration	26	24	24	18	21

Talent	Rank
Educational assessment PISA - Math	11
International experience	12
Management of cities	52
Digital/Technological skills	26
Foreign highly skilled personnel	10
Net flow of international students	27
Female researchers	31
Scientific and technical employment	14

Training & education	Rank
Employee training	09
▷ Total public expenditure on education	60
Higher education achievement	08
Pupil-teacher ratio (tertiary education)	47
Graduates in Sciences	18
Women with degrees	07
Computer science education index	15

Scientific concentration	Rank
Total expenditure on R&D (%)	25
Total R&D personnel per capita	25
R&D productivity by publication	45
▶ High-tech patent grants	06
AI-related patent publications	19
Robots in Education and R&D	27
AI articles	12

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	19	22	09	16	06
Capital	35	44	42	40	41
Technological framework	34	38	35	19	13

Regulatory framework	Rank
Starting a business	12
Enforcing contracts	51
Immigration laws	07
Development & application of tech.	17
▶ Scientific research legislation	04
Intellectual property rights	19
AI policies passed into law	10

Capital	Rank
▷ IT & media stock market capitalization	59
Funding for technological development	16
Banking and financial services	31
Country credit rating	17
Venture capital	08
▷ Investment in Telecommunications	60
AI private investment	25

Technological framework	Rank
Communications technology	35
Mobile broadband subscribers	36
Wireless broadband	52
Internet users	15
Internet bandwidth speed	28
High-tech exports (%)	07
Secure internet servers	07

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	12	11	19	11	10
Business agility	14	18	15	11	13
IT integration	19	38	35	24	28

Adaptive attitudes	Rank
E-Participation	14
▶ Internet retailing	05
Tablet possession	41
▷ Smartphone possession	57
Attitudes toward globalization	11
▶ Flexibility and adaptability	02

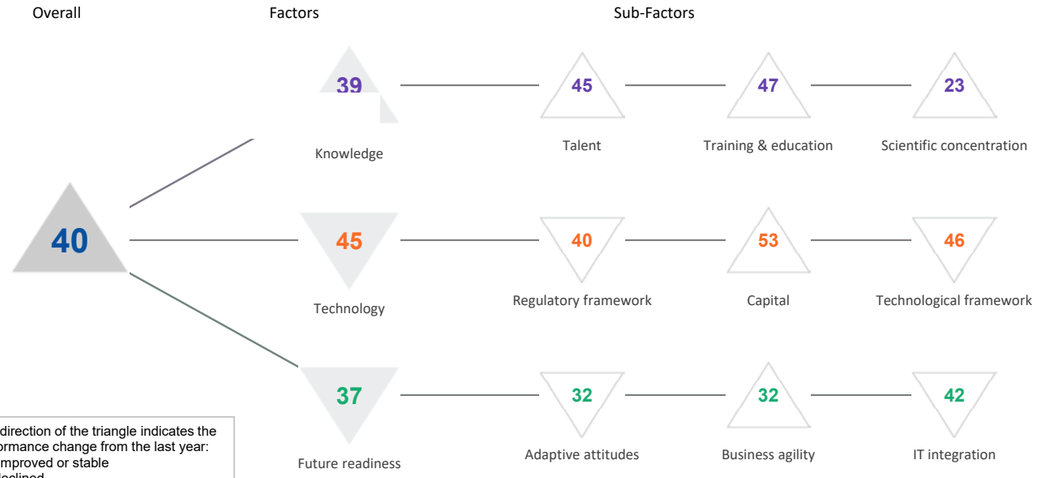
Business agility	Rank
Opportunities and threats	07
World robots distribution	40
Agility of companies	12
Use of big data and analytics	20
▶ Knowledge transfer	05
Entrepreneurial fear of failure	38

IT integration	Rank
E-Government	20
Public-private partnerships	28
Cyber security	26
Software piracy	18
▷ Government cyber security capacity	59
Privacy protection by law exists	17

ITALY

DIGITAL TRENDS - OVERALL

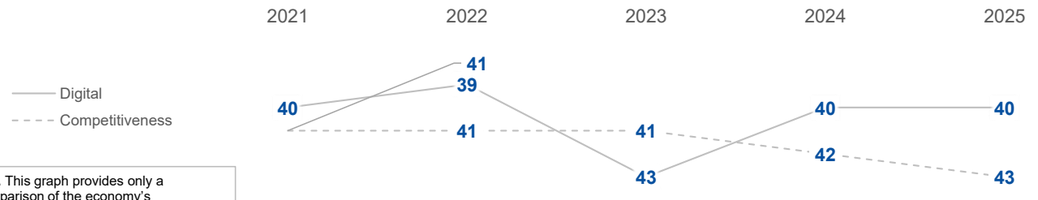
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	40	39	43	40	40
Knowledge	40	41	43	41	39
Technology	42	44	46	41	45
Future readiness	30	38	37	35	37

COMPETITIVENESS & DIGITAL RANKINGS



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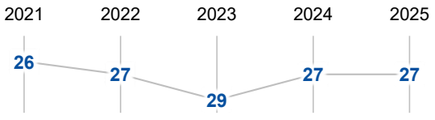
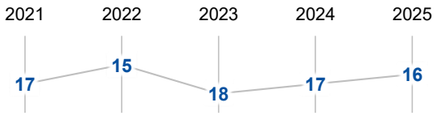
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS > 20 MILLION (32 economies)



ITALY

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	40	43	46	50	45
Training & education	60	58	58	48	47
Scientific concentration	25	23	23	23	23

Talent	Rank
Educational assessment PISA - Math	31
▷ International experience	57
Management of cities	46
Digital/Technological skills	56
▷ Foreign highly skilled personnel	57
Net flow of international students	40
Female researchers	33
Scientific and technical employment	11

Training & education	Rank
▷ Employee training	56
Total public expenditure on education	48
Higher education achievement	50
Pupil-teacher ratio (tertiary education)	50
Graduates in Sciences	29
Women with degrees	51
▶ Computer science education index	10

Scientific concentration	Rank
Total expenditure on R&D (%)	33
Total R&D personnel per capita	32
▶ R&D productivity by publication	08
High-tech patent grants	48
AI-related patent publications	16
Robots in Education and R&D	13
AI articles	26

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	42	38	41	35	40
Capital	48	41	48	53	53
Technological framework	44	44	45	44	46

Regulatory framework	Rank
Starting a business	42
▷ Enforcing contracts	60
Immigration laws	42
Development & application of tech.	50
Scientific research legislation	52
Intellectual property rights	32
▶ AI policies passed into law	04

Capital	Rank
IT & media stock market capitalization	38
Funding for technological development	48
Banking and financial services	50
Country credit rating	49
Venture capital	48
Investment in Telecommunications	38
AI private investment	14

Technological framework	Rank
Communications technology	45
Mobile broadband subscribers	29
Wireless broadband	18
Internet users	44
Internet bandwidth speed	45
High-tech exports (%)	42
Secure internet servers	30

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	36	32	31	27	32
Business agility	19	30	33	39	32
IT integration	38	40	41	38	42

Adaptive attitudes	Rank
E-Participation	49
Internet retailing	30
Tablet possession	36
Smartphone possession	19
Attitudes toward globalization	51
Flexibility and adaptability	17

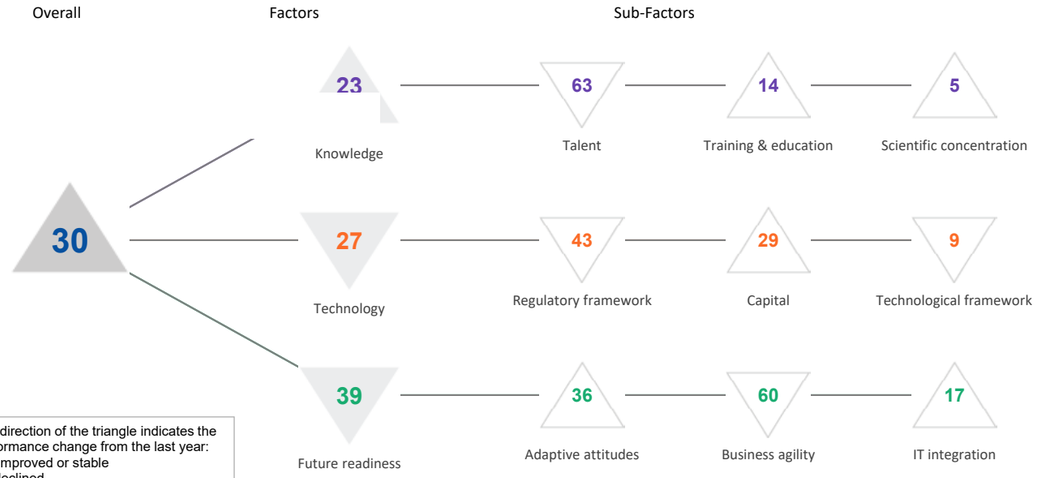
Business agility	Rank
Opportunities and threats	19
▶ World robots distribution	06
Agility of companies	32
Use of big data and analytics	54
Knowledge transfer	44
Entrepreneurial fear of failure	37

IT integration	Rank
E-Government	43
▷ Public-private partnerships	57
Cyber security	49
Software piracy	33
Government cyber security capacity	42
▶ Privacy protection by law exists	03

JAPAN

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

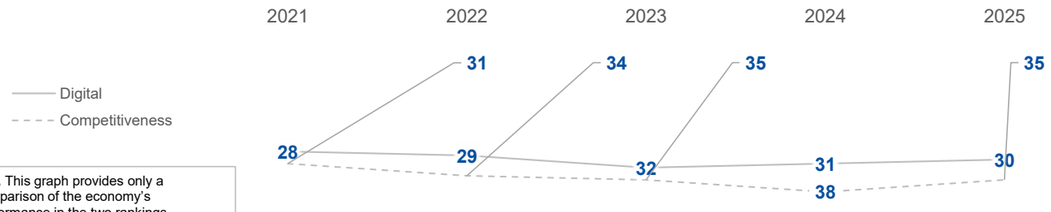


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	28	29	32	31	30
Knowledge	25	28	28	31	23
Technology	30	30	32	26	27
Future readiness	27	28	32	38	39

COMPETITIVENESS & DIGITAL RANKINGS



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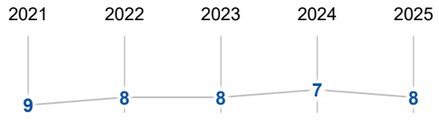
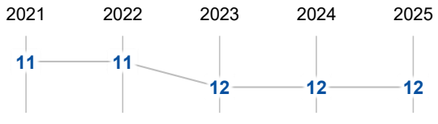
PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS > 20 MILLION (32 economies)



JAPAN

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	47	50	49	53	63
Training & education	21	21	21	20	14
Scientific concentration	13	14	15	24	05

Talent	Rank
Educational assessment PISA - Math	05
▷ International experience	69
Management of cities	14
▷ Digital/Technological skills	65
Foreign highly skilled personnel	59
Net flow of international students	31
Female researchers	59
Scientific and technical employment	39

Training & education	Rank
Employee training	38
Total public expenditure on education	56
Higher education achievement	07
▶ Pupil-teacher ratio (tertiary education)	03
Graduates in Sciences	-
Women with degrees	06
Computer science education index	13

Scientific concentration	Rank
Total expenditure on R&D (%)	06
Total R&D personnel per capita	23
R&D productivity by publication	19
High-tech patent grants	08
AI-related patent publications	04
Robots in Education and R&D	06
AI articles	48

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	48	47	50	39	43
Capital	37	32	36	38	29
Technological framework	08	08	07	06	09

Regulatory framework	Rank
Starting a business	45
Enforcing contracts	35
Immigration laws	59
Development & application of tech.	43
Scientific research legislation	45
Intellectual property rights	40
AI policies passed into law	29

Capital	Rank
IT & media stock market capitalization	12
Funding for technological development	37
Banking and financial services	38
Country credit rating	29
Venture capital	37
Investment in Telecommunications	40
AI private investment	13

Technological framework	Rank
Communications technology	28
Mobile broadband subscribers	05
▶ Wireless broadband	02
Internet users	45
Internet bandwidth speed	16
High-tech exports (%)	30
Secure internet servers	29

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	18	20	22	37	36
Business agility	53	62	56	58	60
IT integration	23	18	16	17	17

Adaptive attitudes	Rank
▶ E-Participation	01
Internet retailing	19
Tablet possession	43
Smartphone possession	47
Attitudes toward globalization	54
Flexibility and adaptability	59

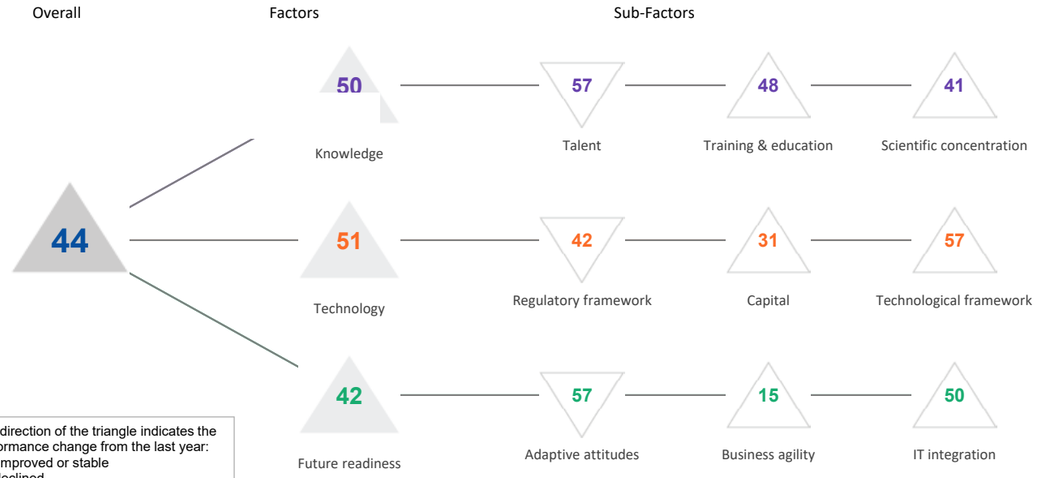
Business agility	Rank
▷ Opportunities and threats	69
▶ World robots distribution	02
▷ Agility of companies	69
▷ Use of big data and analytics	67
Knowledge transfer	49
Entrepreneurial fear of failure	40

IT integration	Rank
E-Government	13
Public-private partnerships	39
Cyber security	45
▶ Software piracy	02
Government cyber security capacity	34
Privacy protection by law exists	13

JORDAN

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

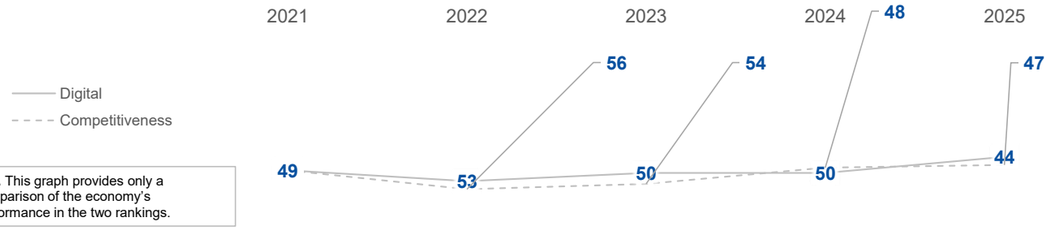


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	49	53	50	50	44
Knowledge	48	53	59	57	50
Technology	43	50	48	52	51
Future readiness	56	55	45	43	42

COMPETITIVENESS & DIGITAL RANKINGS



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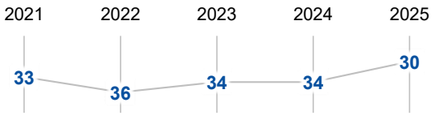
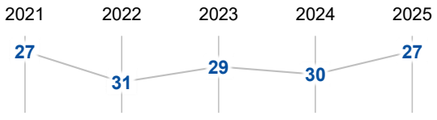
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



JORDAN

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	34	41	38	43	57
Training & education	33	41	50	49	48
Scientific concentration	62	62	63	65	41

Talent	Rank
Educational assessment PISA - Math	57
International experience	20
Management of cities	33
Digital/Technological skills	35
Foreign highly skilled personnel	20
Net flow of international students	37
Female researchers	58
Scientific and technical employment	42

Training & education	Rank
Employee training	31
Total public expenditure on education	52
Higher education achievement	-
Pupil-teacher ratio (tertiary education)	60
Graduates in Sciences	35
Women with degrees	47
Computer science education index	34

Scientific concentration	Rank
Total expenditure on R&D (%)	-
Total R&D personnel per capita	-
R&D productivity by publication	-
High-tech patent grants	51
AI-related patent publications	-
Robots in Education and R&D	-
AI articles	27

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	38	45	42	41	42
Capital	41	45	44	42	31
Technological framework	53	53	54	62	57

Regulatory framework	Rank
Starting a business	52
Enforcing contracts	56
Immigration laws	23
Development & application of tech.	39
▶ Scientific research legislation	15
Intellectual property rights	29
AI policies passed into law	60

Capital	Rank
IT & media stock market capitalization	51
Funding for technological development	21
Banking and financial services	26
Country credit rating	60
▶ Venture capital	11
▶ Investment in Telecommunications	10
AI private investment	-

Technological framework	Rank
Communications technology	54
▷ Mobile broadband subscribers	65
▷ Wireless broadband	66
Internet users	31
Internet bandwidth speed	47
▷ High-tech exports (%)	63
▷ Secure internet servers	67

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	61	61	53	56	57
Business agility	28	34	29	22	15
IT integration	54	52	46	54	50

Adaptive attitudes	Rank
E-Participation	55
Internet retailing	56
▷ Tablet possession	62
Smartphone possession	19
Attitudes toward globalization	36
Flexibility and adaptability	32

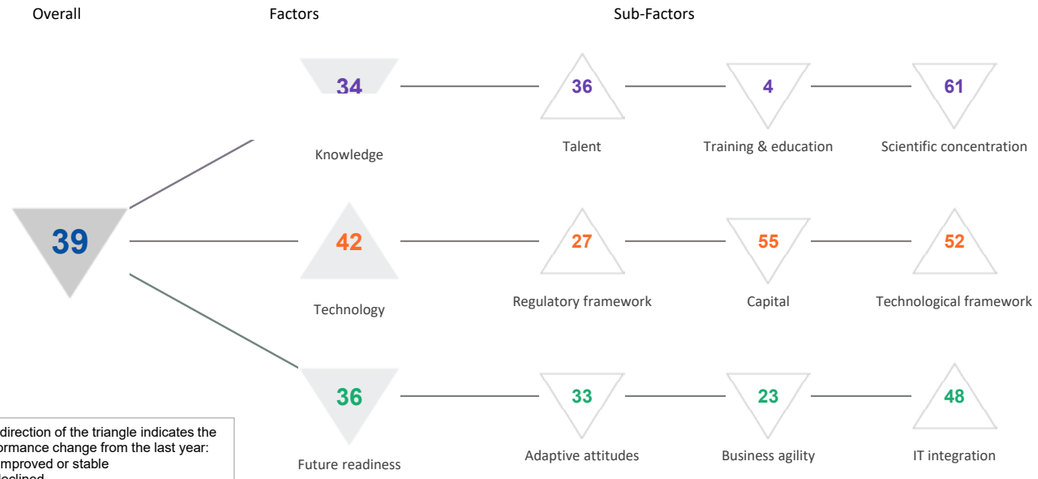
Business agility	Rank
Opportunities and threats	20
World robots distribution	-
▶ Agility of companies	18
Use of big data and analytics	21
Knowledge transfer	21
Entrepreneurial fear of failure	25

IT integration	Rank
E-Government	59
Public-private partnerships	19
Cyber security	24
Software piracy	47
▶ Government cyber security capacity	11
Privacy protection by law exists	62

KAZAKHSTAN

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

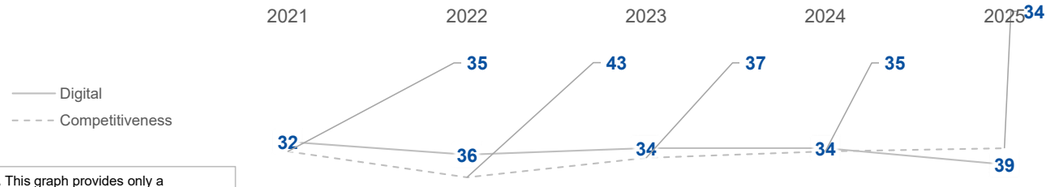


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	32	36	34	34	39
Knowledge	36	30	30	33	34
Technology	40	40	41	46	42
Future readiness	28	30	31	27	36

COMPETITIVENESS & DIGITAL RANKINGS



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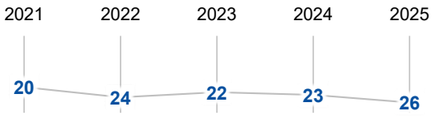
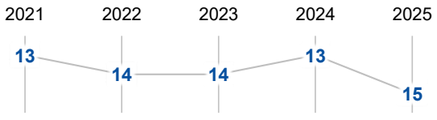
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS > 20 MILLION (32 economies)



KAZAKHSTAN

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	45	46	47	44	36
Training & education	14	01	01	02	04
Scientific concentration	54	51	49	49	61

Talent	Rank
Educational assessment PISA - Math	41
International experience	36
Management of cities	29
Digital/Technological skills	44
Foreign highly skilled personnel	33
Net flow of international students	59
▶ Female researchers	03
Scientific and technical employment	47

Training & education	Rank
Employee training	11
Total public expenditure on education	34
▶ Higher education achievement	01
Pupil-teacher ratio (tertiary education)	37
Graduates in Sciences	20
▶ Women with degrees	01
Computer science education index	58

Scientific concentration	Rank
Total expenditure on R&D (%)	60
Total R&D personnel per capita	50
R&D productivity by publication	20
▷ High-tech patent grants	62
AI-related patent publications	45
Robots in Education and R&D	-
AI articles	54

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	22	21	22	28	27
Capital	51	50	53	52	55
Technological framework	47	47	48	52	52

Regulatory framework	Rank
Starting a business	11
▶ Enforcing contracts	04
Immigration laws	17
Development & application of tech.	23
Scientific research legislation	27
Intellectual property rights	38
▷ AI policies passed into law	66

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	23
Banking and financial services	37
Country credit rating	46
Venture capital	35
▷ Investment in Telecommunications	68
AI private investment	57

Technological framework	Rank
Communications technology	40
▷ Mobile broadband subscribers	61
Wireless broadband	60
Internet users	30
Internet bandwidth speed	60
▶ High-tech exports (%)	09
Secure internet servers	44

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	32	34	29	30	33
Business agility	06	06	05	05	23
IT integration	44	56	54	56	48

Adaptive attitudes	Rank
E-Participation	23
Internet retailing	43
Tablet possession	53
Smartphone possession	13
Attitudes toward globalization	19
Flexibility and adaptability	21

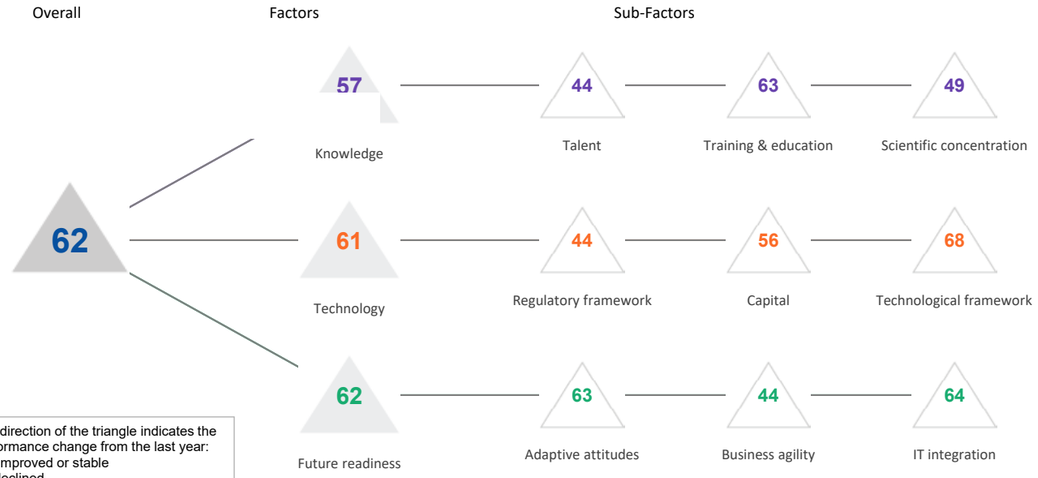
Business agility	Rank
Opportunities and threats	18
World robots distribution	-
Agility of companies	14
Use of big data and analytics	12
Knowledge transfer	25
Entrepreneurial fear of failure	43

IT integration	Rank
E-Government	23
Public-private partnerships	17
Cyber security	43
▷ Software piracy	61
Government cyber security capacity	35
Privacy protection by law exists	59

KENYA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)



The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	-	-	-	62
Knowledge	-	-	-	-	57
Technology	-	-	-	-	61
Future readiness	-	-	-	-	62

COMPETITIVENESS & DIGITAL RANKINGS

N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS > 20 MILLION (32 economies)

KENYA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	-	-	-	44
Training & education	-	-	-	-	63
Scientific concentration	-	-	-	-	49

Talent	Rank
Educational assessment PISA - Math	-
International experience	30
Management of cities	55
▶ Digital/Technological skills	18
Foreign highly skilled personnel	35
Net flow of international students	48
Female researchers	26
Scientific and technical employment	56

Training & education	Rank
Employee training	43
Total public expenditure on education	50
Higher education achievement	41
Pupil-teacher ratio (tertiary education)	57
Graduates in Sciences	51
Women with degrees	62
Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	62
Total R&D personnel per capita	-
▶ R&D productivity by publication	04
High-tech patent grants	57
AI-related patent publications	-
Robots in Education and R&D	-
▷ AI articles	67

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	-	-	-	44
Capital	-	-	-	-	56
Technological framework	-	-	-	-	68

Regulatory framework	Rank
Starting a business	57
Enforcing contracts	50
▶ Immigration laws	19
Development & application of tech.	33
Scientific research legislation	28
Intellectual property rights	42
AI policies passed into law	40

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	51
Banking and financial services	42
▷ Country credit rating	65
Venture capital	55
▶ Investment in Telecommunications	15
AI private investment	52

Technological framework	Rank
Communications technology	44
Mobile broadband subscribers	63
▷ Wireless broadband	65
▷ Internet users	68
▷ Internet bandwidth speed	68
High-tech exports (%)	60
Secure internet servers	64

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	-	-	-	63
Business agility	-	-	-	-	44
IT integration	-	-	-	-	64

Adaptive attitudes	Rank
E-Participation	59
Internet retailing	60
Tablet possession	59
Smartphone possession	60
Attitudes toward globalization	21
▶ Flexibility and adaptability	11

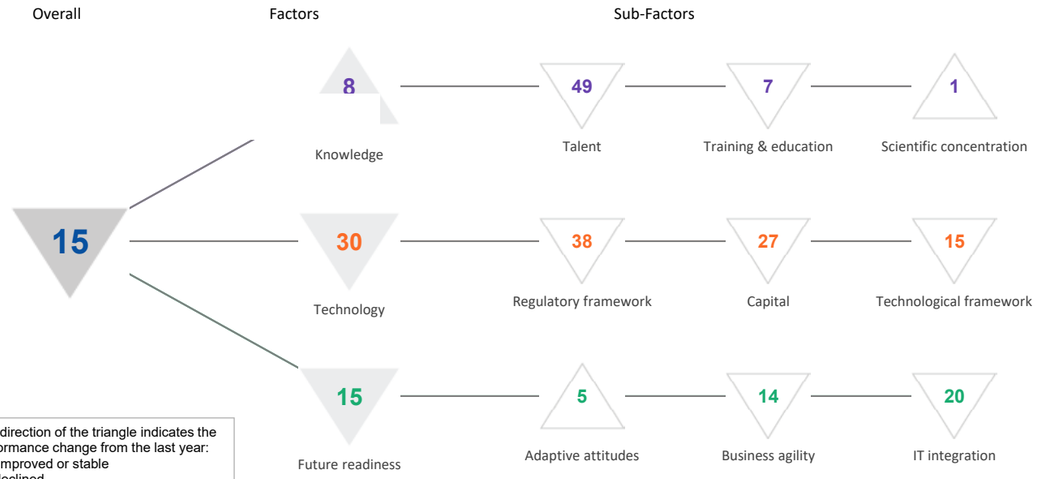
Business agility	Rank
Opportunities and threats	26
World robots distribution	-
Agility of companies	49
Use of big data and analytics	51
Knowledge transfer	39
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	62
Public-private partnerships	30
Cyber security	53
Software piracy	61
Government cyber security capacity	56
Privacy protection by law exists	48

KOREA REP.

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

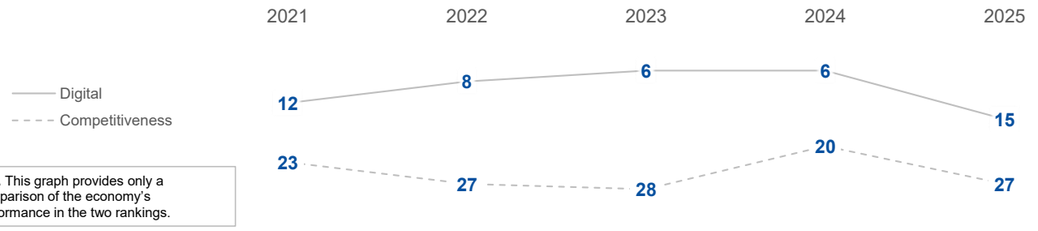


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	12	08	06	06	15
Knowledge	15	16	10	08	08
Technology	13	13	12	14	30
Future readiness	05	02	01	03	15

COMPETITIVENESS & DIGITAL RANKINGS



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PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)

POPULATIONS > 20 MILLION (32 economies)

KOREA REP.

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	26	33	31	19	49
Training & education	16	16	06	05	07
Scientific concentration	03	03	02	04	01

Talent	Rank
Educational assessment PISA - Math	06
▷ International experience	58
Management of cities	28
▷ Digital/Technological skills	59
▷ Foreign highly skilled personnel	61
Net flow of international students	34
Female researchers	57
Scientific and technical employment	29

Training & education	Rank
Employee training	40
Total public expenditure on education	36
Higher education achievement	05
Pupil-teacher ratio (tertiary education)	25
Graduates in Sciences	09
Women with degrees	16
Computer science education index	07

Scientific concentration	Rank
▶ Total expenditure on R&D (%)	01
Total R&D personnel per capita	04
R&D productivity by publication	06
High-tech patent grants	04
AI-related patent publications	03
Robots in Education and R&D	04
AI articles	28

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	23	23	26	18	38
Capital	16	15	24	17	27
Technological framework	07	07	08	09	15

Regulatory framework	Rank
Starting a business	18
▶ Enforcing contracts	02
▷ Immigration laws	63
Development & application of tech.	55
Scientific research legislation	44
Intellectual property rights	52
AI policies passed into law	32

Capital	Rank
IT & media stock market capitalization	03
Funding for technological development	49
Banking and financial services	55
Country credit rating	17
Venture capital	46
Investment in Telecommunications	30
AI private investment	10

Technological framework	Rank
Communications technology	24
Mobile broadband subscribers	11
Wireless broadband	31
Internet users	11
Internet bandwidth speed	12
High-tech exports (%)	11
Secure internet servers	42

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	02	01	01	06	05
Business agility	05	02	03	02	14
IT integration	16	14	12	06	20

Adaptive attitudes	Rank
E-Participation	03
▶ Internet retailing	02
Tablet possession	47
Smartphone possession	08
Attitudes toward globalization	35
Flexibility and adaptability	33

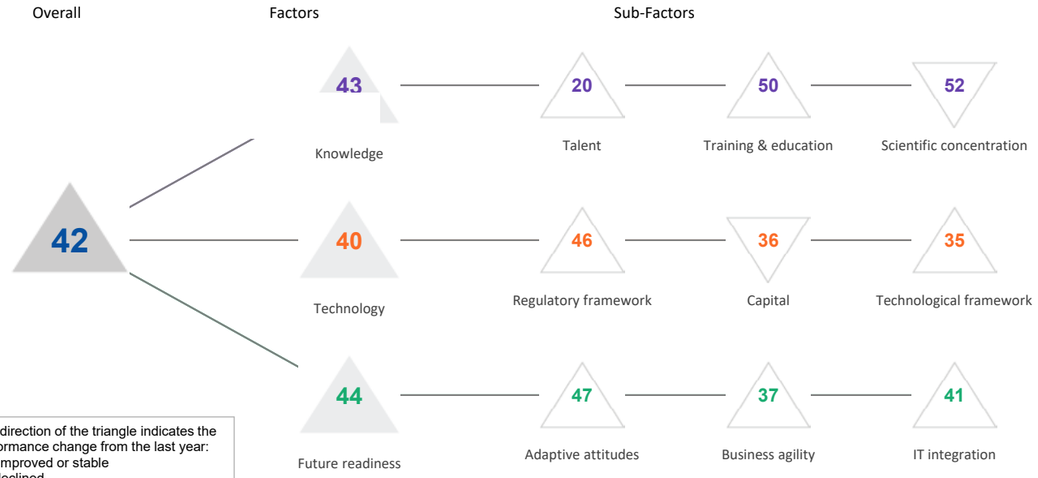
Business agility	Rank
Opportunities and threats	52
▶ World robots distribution	03
Agility of companies	46
Use of big data and analytics	37
Knowledge transfer	40
▶ Entrepreneurial fear of failure	02

IT integration	Rank
E-Government	04
▷ Public-private partnerships	59
Cyber security	40
Software piracy	19
Government cyber security capacity	05
Privacy protection by law exists	10

KUWAIT

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

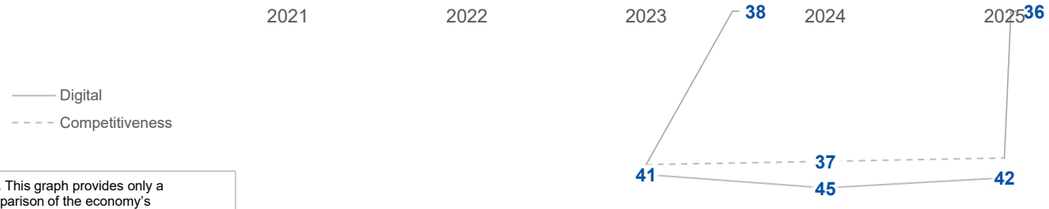


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	-	41	45	42
Knowledge	-	-	44	48	43
Technology	-	-	37	44	40
Future readiness	-	-	41	45	44

COMPETITIVENESS & DIGITAL RANKINGS



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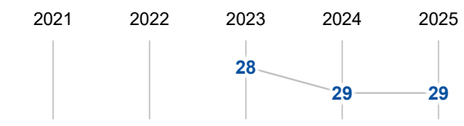
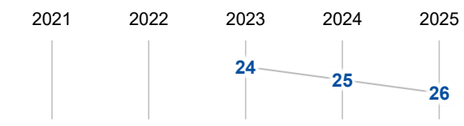
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



KUWAIT

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	-	43	36	20
Training & education	-	-	53	61	50
Scientific concentration	-	-	35	39	52

Talent	Rank
Educational assessment PISA - Math	-
International experience	33
Management of cities	40
Digital/Technological skills	24
Foreign highly skilled personnel	34
Net flow of international students	-
▶ Female researchers	08
Scientific and technical employment	-

Training & education	Rank
Employee training	28
▶ Total public expenditure on education	06
▷ Higher education achievement	63
Pupil-teacher ratio (tertiary education)	-
Graduates in Sciences	-
Women with degrees	56
Computer science education index	49

Scientific concentration	Rank
Total expenditure on R&D (%)	61
Total R&D personnel per capita	15
R&D productivity by publication	22
High-tech patent grants	-
AI-related patent publications	52
Robots in Education and R&D	53
AI articles	38

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	-	44	52	46
Capital	-	-	40	35	36
Technological framework	-	-	25	46	35

Regulatory framework	Rank
Starting a business	37
Enforcing contracts	45
Immigration laws	43
Development & application of tech.	24
Scientific research legislation	39
Intellectual property rights	43
AI policies passed into law	60

Capital	Rank
IT & media stock market capitalization	27
Funding for technological development	20
Banking and financial services	16
Country credit rating	25
Venture capital	24
▷ Investment in Telecommunications	69
AI private investment	-

Technological framework	Rank
Communications technology	34
▶ Mobile broadband subscribers	10
Wireless broadband	35
▶ Internet users	05
Internet bandwidth speed	30
▷ High-tech exports (%)	64
Secure internet servers	62

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	-	36	48	47
Business agility	-	-	47	41	37
IT integration	-	-	40	51	41

Adaptive attitudes	Rank
▷ E-Participation	63
Internet retailing	41
Tablet possession	14
Smartphone possession	27
Attitudes toward globalization	34
Flexibility and adaptability	35

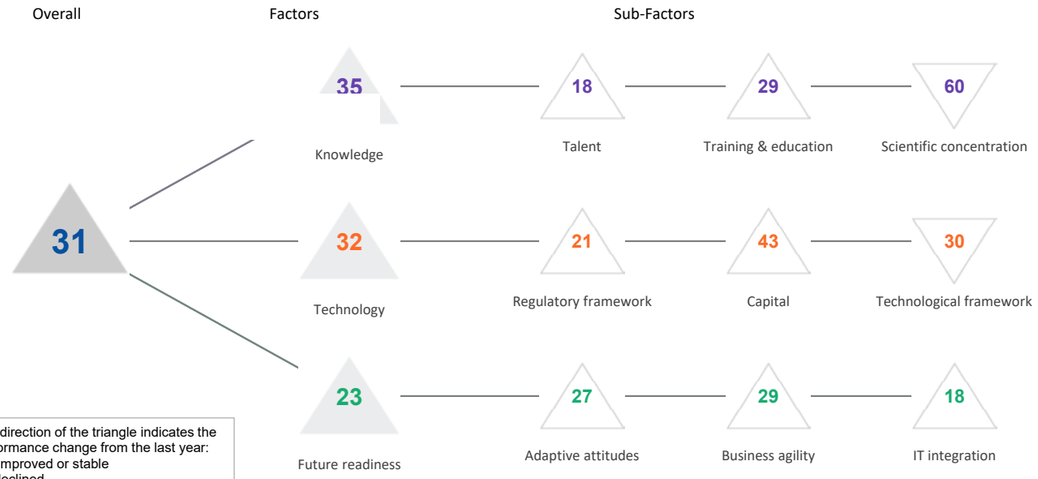
Business agility	Rank
Opportunities and threats	43
World robots distribution	57
Agility of companies	39
Use of big data and analytics	19
Knowledge transfer	28
Entrepreneurial fear of failure	31

IT integration	Rank
E-Government	55
Public-private partnerships	24
Cyber security	12
Software piracy	51
▶ Government cyber security capacity	09
▷ Privacy protection by law exists	66

LATVIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)



The direction of the triangle indicates the performance change from the last year:
△ improved or stable
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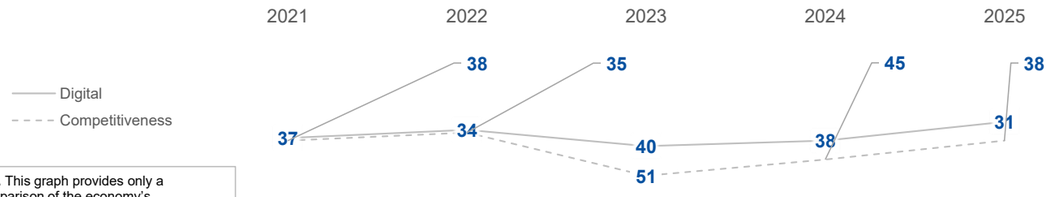
OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	37	34	40	38	31
Knowledge	34	36	39	38	35
Technology	34	34	43	42	32
Future readiness	42	32	34	34	23

COMPETITIVENESS & DIGITAL RANKINGS



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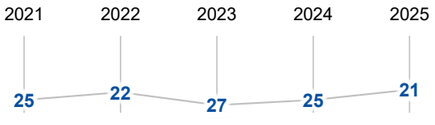
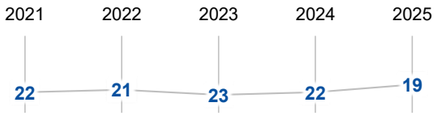
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



LATVIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	24	25	44	32	18
Training & education	30	28	31	33	29
Scientific concentration	51	52	54	51	60

Talent	Rank
Educational assessment PISA - Math	21
International experience	26
Management of cities	21
Digital/Technological skills	16
Foreign highly skilled personnel	44
Net flow of international students	20
▶ Female researchers	06
Scientific and technical employment	36

Training & education	Rank
Employee training	25
▶ Total public expenditure on education	09
Higher education achievement	30
Pupil-teacher ratio (tertiary education)	14
Graduates in Sciences	50
Women with degrees	25
Computer science education index	43

Scientific concentration	Rank
Total expenditure on R&D (%)	42
Total R&D personnel per capita	40
▷ R&D productivity by publication	56
High-tech patent grants	43
AI-related patent publications	45
▷ Robots in Education and R&D	50
AI articles	41

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	34	36	43	43	21
Capital	46	39	52	56	43
Technological framework	18	22	27	27	30

Regulatory framework	Rank
Starting a business	15
Enforcing contracts	14
▷ Immigration laws	58
Development & application of tech.	15
Scientific research legislation	26
Intellectual property rights	28
AI policies passed into law	20

Capital	Rank
IT & media stock market capitalization	40
Funding for technological development	22
▷ Banking and financial services	52
Country credit rating	36
Venture capital	30
Investment in Telecommunications	48
AI private investment	-

Technological framework	Rank
▶ Communications technology	10
Mobile broadband subscribers	30
Wireless broadband	23
Internet users	33
Internet bandwidth speed	38
High-tech exports (%)	24
Secure internet servers	35

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	51	44	35	31	27
Business agility	48	31	49	45	29
IT integration	37	23	21	25	18

Adaptive attitudes	Rank
E-Participation	32
Internet retailing	33
Tablet possession	21
Smartphone possession	27
Attitudes toward globalization	25
Flexibility and adaptability	19

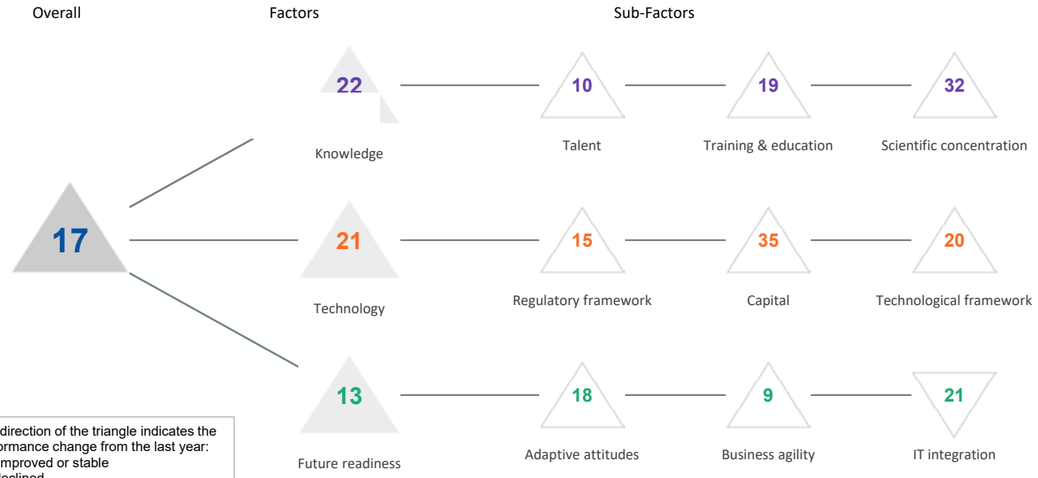
Business agility	Rank
Opportunities and threats	30
▷ World robots distribution	51
Agility of companies	22
▶ Use of big data and analytics	13
Knowledge transfer	29
Entrepreneurial fear of failure	32

IT integration	Rank
E-Government	26
Public-private partnerships	38
Cyber security	15
Software piracy	40
▶ Government cyber security capacity	08
Privacy protection by law exists	21

LITHUANIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

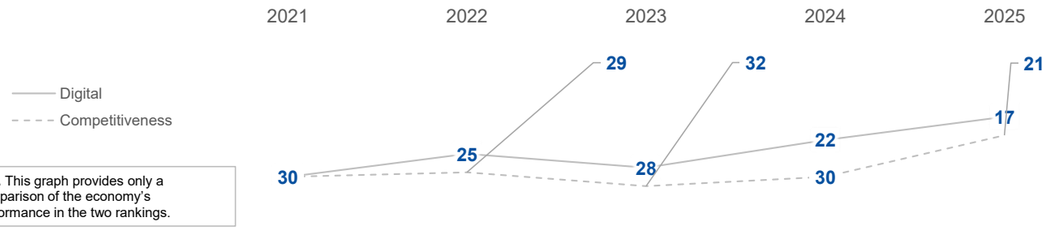


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	30	25	28	22	17
Knowledge	26	24	23	23	22
Technology	29	32	33	28	21
Future readiness	33	24	28	17	13

COMPETITIVENESS & DIGITAL RANKINGS



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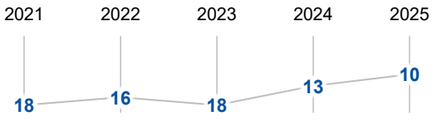
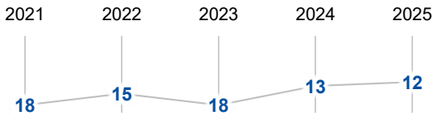
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



LITHUANIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	25	27	25	21	10
Training & education	15	13	15	24	19
Scientific concentration	37	37	33	33	32

Talent	Rank
Educational assessment PISA - Math	25
International experience	22
Management of cities	19
▶ Digital/Technological skills	02
Foreign highly skilled personnel	29
Net flow of international students	30
Female researchers	11
Scientific and technical employment	26

Training & education	Rank
Employee training	12
Total public expenditure on education	20
Higher education achievement	13
Pupil-teacher ratio (tertiary education)	09
Graduates in Sciences	31
Women with degrees	13
▷ Computer science education index	48

Scientific concentration	Rank
Total expenditure on R&D (%)	37
Total R&D personnel per capita	35
▷ R&D productivity by publication	55
▶ High-tech patent grants	03
AI-related patent publications	33
Robots in Education and R&D	45
AI articles	35

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	32	28	28	25	15
Capital	30	37	39	36	35
Technological framework	30	32	33	32	20

Regulatory framework	Rank
Starting a business	19
Enforcing contracts	07
▷ Immigration laws	54
Development & application of tech.	18
Scientific research legislation	28
Intellectual property rights	18
AI policies passed into law	20

Capital	Rank
IT & media stock market capitalization	06
Funding for technological development	36
Banking and financial services	36
Country credit rating	32
Venture capital	33
▷ Investment in Telecommunications	59
AI private investment	22

Technological framework	Rank
▶ Communications technology	01
▷ Mobile broadband subscribers	56
Wireless broadband	07
Internet users	41
Internet bandwidth speed	25
High-tech exports (%)	36
Secure internet servers	11

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	47	38	37	21	18
Business agility	24	17	18	13	09
IT integration	34	26	28	19	21

Adaptive attitudes	Rank
E-Participation	24
Internet retailing	22
Tablet possession	31
Smartphone possession	14
Attitudes toward globalization	27
Flexibility and adaptability	06

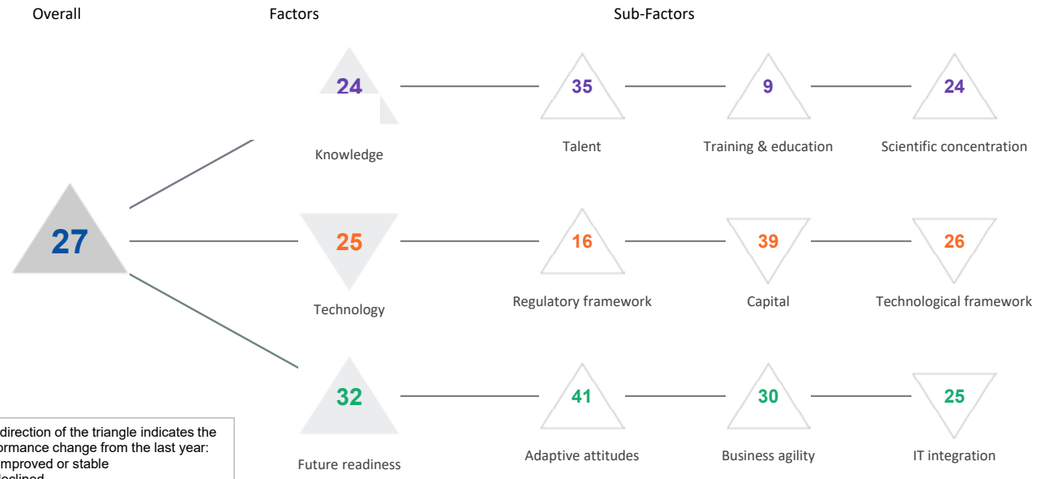
Business agility	Rank
▶ Opportunities and threats	01
World robots distribution	43
▶ Agility of companies	01
Use of big data and analytics	06
Knowledge transfer	37
Entrepreneurial fear of failure	34

IT integration	Rank
E-Government	21
Public-private partnerships	46
Cyber security	17
Software piracy	43
Government cyber security capacity	06
Privacy protection by law exists	23

LUXEMBOURG

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

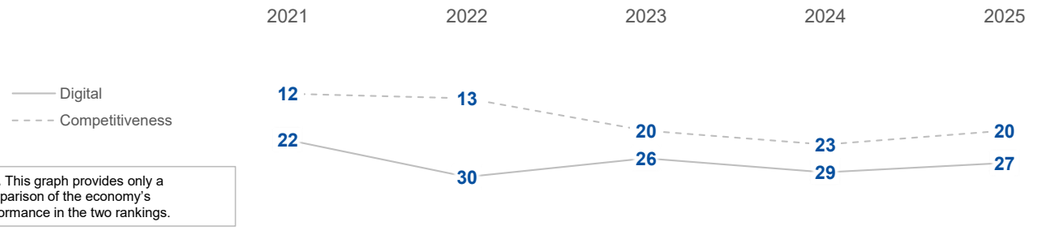


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	22	30	26	29	27
Knowledge	29	35	33	24	24
Technology	14	19	25	22	25
Future readiness	24	35	21	40	32

COMPETITIVENESS & DIGITAL RANKINGS



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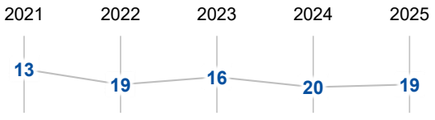
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)

LUXEMBOURG

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	33	35	40	37	35
Training & education	20	20	18	13	09
Scientific concentration	38	42	48	28	24

Talent	Rank
Educational assessment PISA - Math	21
International experience	07
Management of cities	12
Digital/Technological skills	36
▶ Foreign highly skilled personnel	04
▷ Net flow of international students	63
Female researchers	50
Scientific and technical employment	22

Training & education	Rank
Employee training	30
Total public expenditure on education	23
Higher education achievement	12
▶ Pupil-teacher ratio (tertiary education)	01
Graduates in Sciences	28
Women with degrees	17
Computer science education index	19

Scientific concentration	Rank
Total expenditure on R&D (%)	39
Total R&D personnel per capita	16
▷ R&D productivity by publication	59
High-tech patent grants	28
AI-related patent publications	28
Robots in Education and R&D	-
▶ AI articles	02

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	08	18	17	21	16
Capital	08	24	29	34	39
Technological framework	25	27	34	17	26

Regulatory framework	Rank
Starting a business	34
Enforcing contracts	17
Immigration laws	09
Development & application of tech.	37
Scientific research legislation	18
Intellectual property rights	20
AI policies passed into law	15

Capital	Rank
IT & media stock market capitalization	10
Funding for technological development	32
▷ Banking and financial services	64
▶ Country credit rating	01
Venture capital	39
▷ Investment in Telecommunications	63
AI private investment	29

Technological framework	Rank
Communications technology	23
Mobile broadband subscribers	19
Wireless broadband	29
Internet users	07
Internet bandwidth speed	27
▷ High-tech exports (%)	53
Secure internet servers	15

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	38	47	23	60	41
Business agility	22	36	27	42	30
IT integration	12	17	10	23	25

Adaptive attitudes	Rank
E-Participation	53
Internet retailing	-
Tablet possession	-
Smartphone possession	-
Attitudes toward globalization	39
Flexibility and adaptability	38

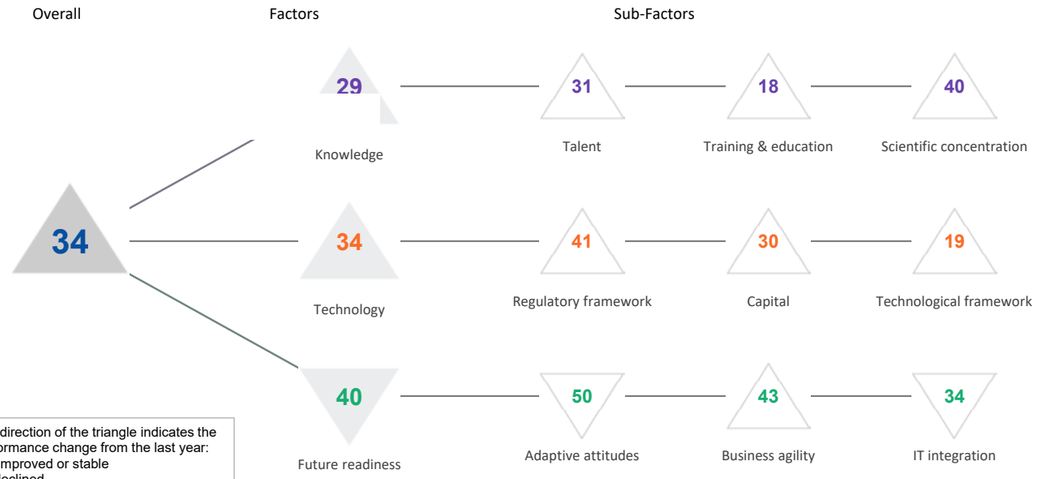
Business agility	Rank
Opportunities and threats	23
World robots distribution	-
Agility of companies	28
Use of big data and analytics	42
Knowledge transfer	31
Entrepreneurial fear of failure	12

IT integration	Rank
E-Government	38
Public-private partnerships	37
Cyber security	35
▶ Software piracy	04
Government cyber security capacity	41
Privacy protection by law exists	30

MALAYSIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

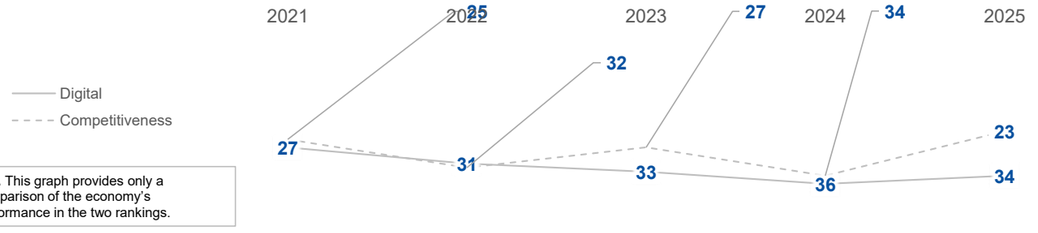


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	27	31	33	36	34
Knowledge	22	25	29	34	29
Technology	26	29	27	35	34
Future readiness	29	31	33	36	40

COMPETITIVENESS & DIGITAL RANKINGS

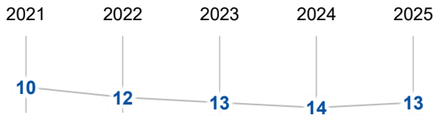


N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)

POPULATIONS > 20 MILLION (32 economies)



MALAYSIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	30	36	30	41	31
Training & education	09	10	17	22	18
Scientific concentration	32	35	36	40	40

Talent	Rank
Educational assessment PISA - Math	47
International experience	17
Management of cities	30
Digital/Technological skills	40
Foreign highly skilled personnel	24
Net flow of international students	28
▶ Female researchers	10
▷ Scientific and technical employment	51

Training & education	Rank
Employee training	32
Total public expenditure on education	43
Higher education achievement	39
Pupil-teacher ratio (tertiary education)	31
▶ Graduates in Sciences	02
Women with degrees	21
Computer science education index	21

Scientific concentration	Rank
Total expenditure on R&D (%)	40
Total R&D personnel per capita	47
R&D productivity by publication	23
High-tech patent grants	36
AI-related patent publications	33
Robots in Education and R&D	32
AI articles	43

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	35	40	36	44	41
Capital	31	33	32	31	30
Technological framework	15	16	16	34	19

Regulatory framework	Rank
▷ Starting a business	54
Enforcing contracts	27
Immigration laws	29
Development & application of tech.	32
Scientific research legislation	38
Intellectual property rights	48
▷ AI policies passed into law	50

Capital	Rank
IT & media stock market capitalization	17
Funding for technological development	28
Banking and financial services	20
Country credit rating	40
Venture capital	25
Investment in Telecommunications	44
AI private investment	33

Technological framework	Rank
▷ Communications technology	51
Mobile broadband subscribers	16
Wireless broadband	26
▶ Internet users	10
Internet bandwidth speed	39
▶ High-tech exports (%)	05
Secure internet servers	43

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	29	30	27	33	50
Business agility	27	35	37	47	43
IT integration	31	31	33	31	34

Adaptive attitudes	Rank
E-Participation	43
Internet retailing	48
▷ Tablet possession	50
▶ Smartphone possession	08
Attitudes toward globalization	45
Flexibility and adaptability	43

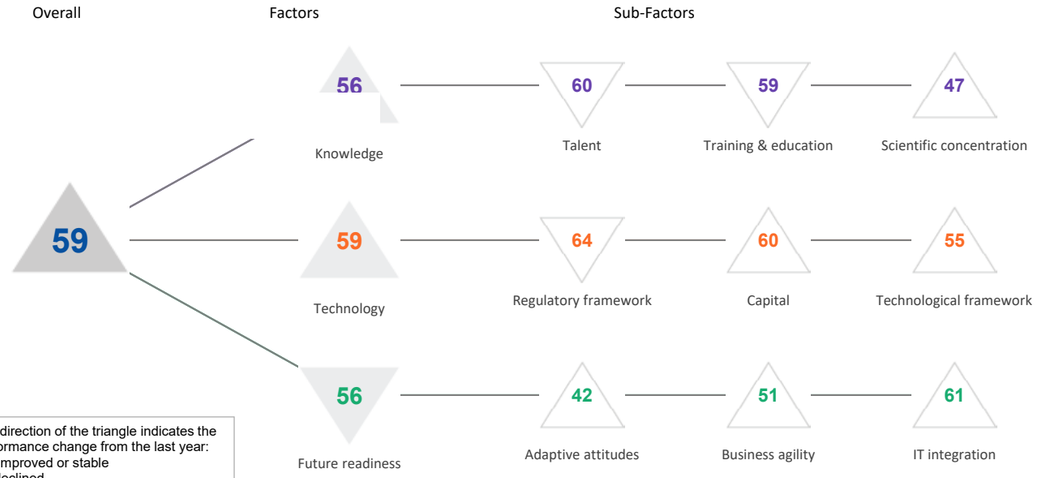
Business agility	Rank
Opportunities and threats	40
World robots distribution	21
Agility of companies	34
Use of big data and analytics	43
Knowledge transfer	46
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	49
Public-private partnerships	23
Cyber security	37
Software piracy	45
Government cyber security capacity	19
Privacy protection by law exists	34

MEXICO

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

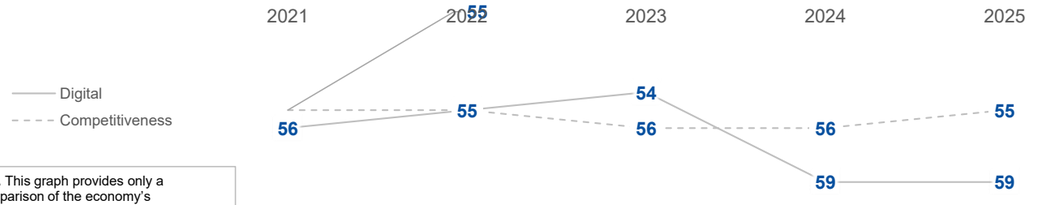


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	56	55	54	59	59
Knowledge	54	52	50	58	56
Technology	57	56	58	62	59
Future readiness	51	53	54	55	56

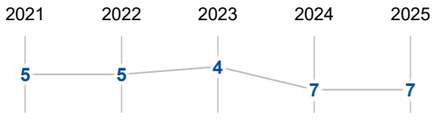
COMPETITIVENESS & DIGITAL RANKINGS



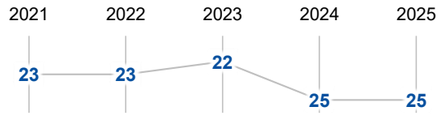
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

THE AMERICAS (10 economies)



POPULATIONS > 20 MILLION (32 economies)



MEXICO

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	51	54	52	58	60
Training & education	57	53	54	56	59
Scientific concentration	50	49	46	50	47

Talent	Rank
Educational assessment PISA - Math	48
International experience	28
▷ Management of cities	65
Digital/Technological skills	62
Foreign highly skilled personnel	37
Net flow of international students	41
Female researchers	39
Scientific and technical employment	34

Training & education	Rank
Employee training	55
Total public expenditure on education	58
Higher education achievement	53
▶ Pupil-teacher ratio (tertiary education)	21
Graduates in Sciences	30
Women with degrees	54
Computer science education index	55

Scientific concentration	Rank
Total expenditure on R&D (%)	58
Total R&D personnel per capita	55
▶ R&D productivity by publication	07
High-tech patent grants	59
AI-related patent publications	39
▶ Robots in Education and R&D	10
AI articles	60

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	54	56	59	63	64
Capital	57	55	55	60	60
Technological framework	54	54	55	58	55

Regulatory framework	Rank
Starting a business	46
Enforcing contracts	32
Immigration laws	51
▷ Development & application of tech.	65
▷ Scientific research legislation	67
Intellectual property rights	57
AI policies passed into law	48

Capital	Rank
▶ IT & media stock market capitalization	18
▷ Funding for technological development	67
Banking and financial services	57
Country credit rating	49
Venture capital	59
Investment in Telecommunications	42
AI private investment	28

Technological framework	Rank
Communications technology	64
Mobile broadband subscribers	47
Wireless broadband	57
Internet users	57
Internet bandwidth speed	55
High-tech exports (%)	28
Secure internet servers	60

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	52	54	56	42	42
Business agility	41	46	53	53	51
IT integration	52	47	51	61	61

Adaptive attitudes	Rank
E-Participation	40
Internet retailing	40
Tablet possession	46
Smartphone possession	48
Attitudes toward globalization	30
Flexibility and adaptability	46

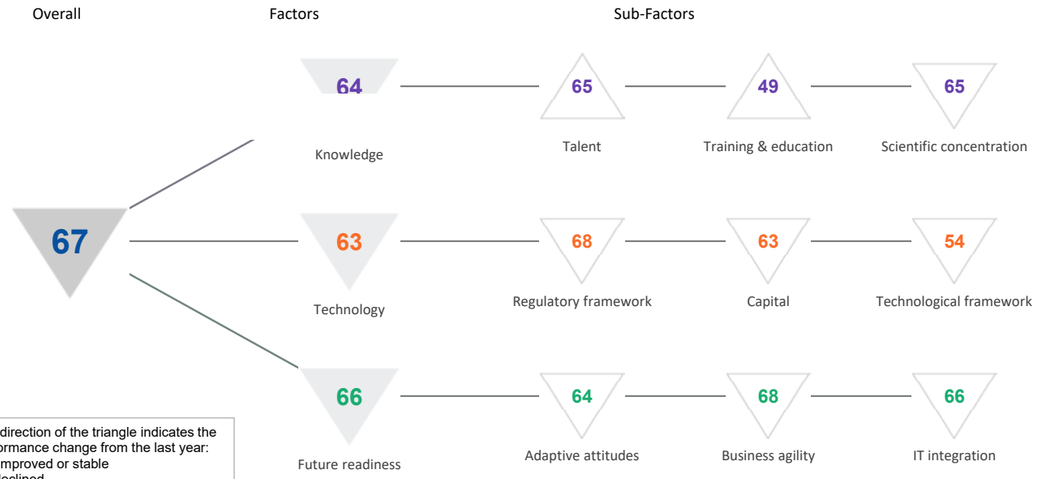
Business agility	Rank
Opportunities and threats	55
▶ World robots distribution	09
Agility of companies	44
Use of big data and analytics	56
Knowledge transfer	60
Entrepreneurial fear of failure	24

IT integration	Rank
E-Government	54
Public-private partnerships	58
▷ Cyber security	66
Software piracy	42
Government cyber security capacity	51
Privacy protection by law exists	54

MONGOLIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

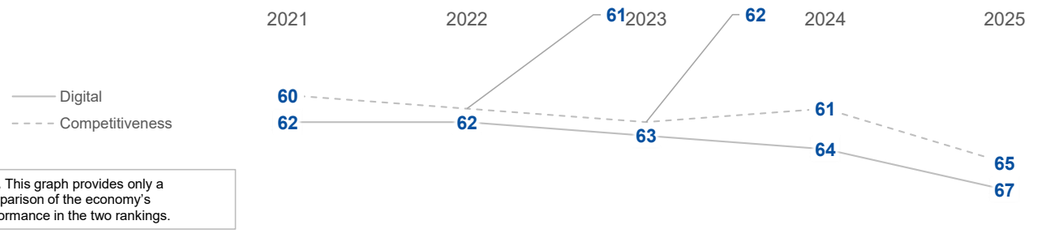


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	62	62	63	64	67
Knowledge	58	61	56	62	64
Technology	61	60	61	55	63
Future readiness	62	62	62	64	66

COMPETITIVENESS & DIGITAL RANKINGS

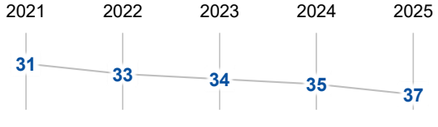


N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)

POPULATIONS < 20 MILLION (37 economies)



MONGOLIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	60	60	63	65	65
Training & education	39	47	37	53	49
Scientific concentration	61	61	61	62	65

Talent	Rank
Educational assessment PISA - Math	42
International experience	67
Management of cities	68
Digital/Technological skills	65
Foreign highly skilled personnel	62
Net flow of international students	61
▶ Female researchers	01
Scientific and technical employment	55

Training & education	Rank
Employee training	35
Total public expenditure on education	38
▶ Higher education achievement	26
Pupil-teacher ratio (tertiary education)	52
Graduates in Sciences	56
▶ Women with degrees	22
Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	-
Total R&D personnel per capita	44
R&D productivity by publication	-
High-tech patent grants	61
AI-related patent publications	-
Robots in Education and R&D	-
AI articles	59

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	58	60	61	64	68
Capital	62	59	61	55	63
Technological framework	60	57	58	50	54

Regulatory framework	Rank
Starting a business	43
Enforcing contracts	47
Immigration laws	65
▷ Development & application of tech.	69
Scientific research legislation	68
▷ Intellectual property rights	68
AI policies passed into law	66

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	68
Banking and financial services	66
Country credit rating	63
Venture capital	68
▶ Investment in Telecommunications	05
AI private investment	-

Technological framework	Rank
Communications technology	65
Mobile broadband subscribers	67
Wireless broadband	49
Internet users	55
Internet bandwidth speed	63
▶ High-tech exports (%)	10
Secure internet servers	50

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	37	51	44	51	64
Business agility	63	63	64	67	68
IT integration	62	62	62	65	66

Adaptive attitudes	Rank
E-Participation	32
Internet retailing	59
Tablet possession	-
Smartphone possession	62
Attitudes toward globalization	64
Flexibility and adaptability	41

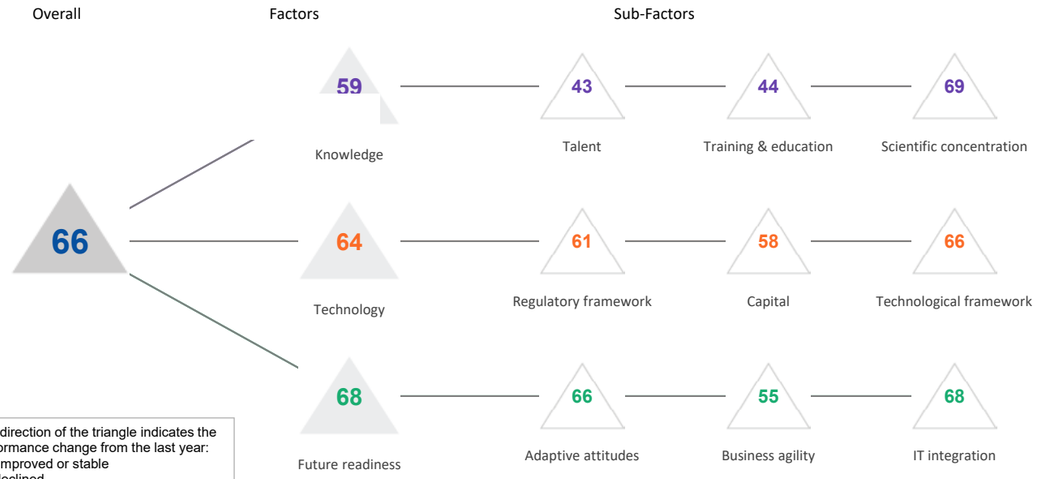
Business agility	Rank
Opportunities and threats	67
World robots distribution	-
Agility of companies	66
Use of big data and analytics	66
▷ Knowledge transfer	69
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	39
▷ Public-private partnerships	69
▷ Cyber security	69
Software piracy	-
Government cyber security capacity	58
Privacy protection by law exists	56

NAMIBIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)



The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	-	-	-	66
Knowledge	-	-	-	-	59
Technology	-	-	-	-	64
Future readiness	-	-	-	-	68

COMPETITIVENESS & DIGITAL RANKINGS

N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS < 20 MILLION (37 economies)

NAMIBIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	-	-	-	43
Training & education	-	-	-	-	44
Scientific concentration	-	-	-	-	69

	Talent	Rank
	Educational assessment PISA - Math	-
	International experience	62
	Management of cities	60
▷	Digital/Technological skills	68
	Foreign highly skilled personnel	51
	Net flow of international students	50
▶	Female researchers	09
	Scientific and technical employment	-

	Training & education	Rank
	Employee training	53
▶	Total public expenditure on education	01
	Higher education achievement	-
	Pupil-teacher ratio (tertiary education)	41
	Graduates in Sciences	62
	Women with degrees	-
	Computer science education index	60

	Scientific concentration	Rank
	Total expenditure on R&D (%)	44
	Total R&D personnel per capita	57
	R&D productivity by publication	61
	High-tech patent grants	58
	AI-related patent publications	-
	Robots in Education and R&D	-
	AI articles	56

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	-	-	-	61
Capital	-	-	-	-	58
Technological framework	-	-	-	-	66

	Regulatory framework	Rank
	Starting a business	-
	Enforcing contracts	46
▷	Immigration laws	69
	Development & application of tech.	62
	Scientific research legislation	62
	Intellectual property rights	56
	AI policies passed into law	53

	Capital	Rank
	IT & media stock market capitalization	-
	Funding for technological development	60
	Banking and financial services	46
	Country credit rating	59
	Venture capital	65
	Investment in Telecommunications	34
	AI private investment	-

	Technological framework	Rank
	Communications technology	60
	Mobile broadband subscribers	64
	Wireless broadband	38
	Internet users	65
▷	Internet bandwidth speed	69
▷	High-tech exports (%)	68
	Secure internet servers	61

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	-	-	-	66
Business agility	-	-	-	-	55
IT integration	-	-	-	-	68

	Adaptive attitudes	Rank
	E-Participation	64
	Internet retailing	-
	Tablet possession	-
	Smartphone possession	-
	Attitudes toward globalization	59
	Flexibility and adaptability	65

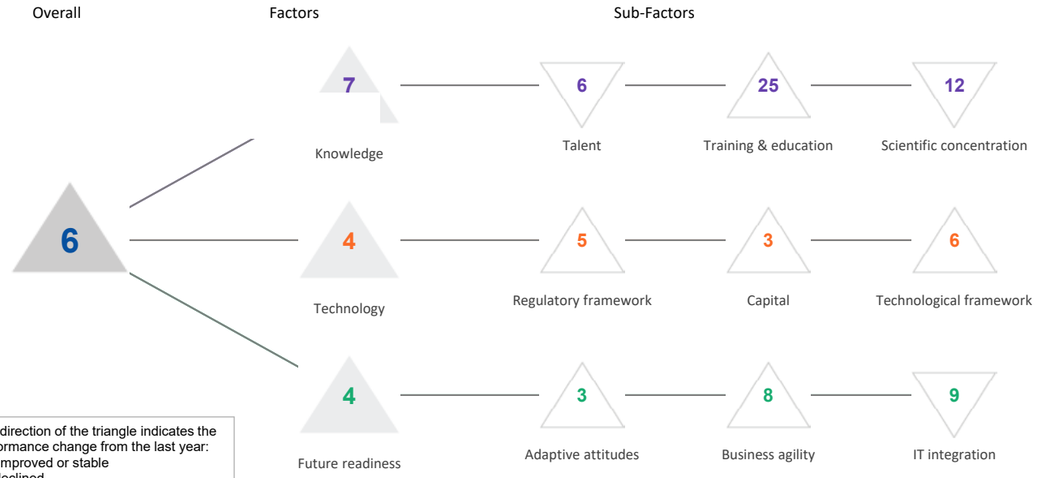
	Business agility	Rank
	Opportunities and threats	61
	World robots distribution	-
	Agility of companies	61
	Use of big data and analytics	50
	Knowledge transfer	64
	Entrepreneurial fear of failure	-

	IT integration	Rank
	E-Government	64
▷	Public-private partnerships	66
	Cyber security	65
	Software piracy	-
	Government cyber security capacity	64
	Privacy protection by law exists	65

NETHERLANDS

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

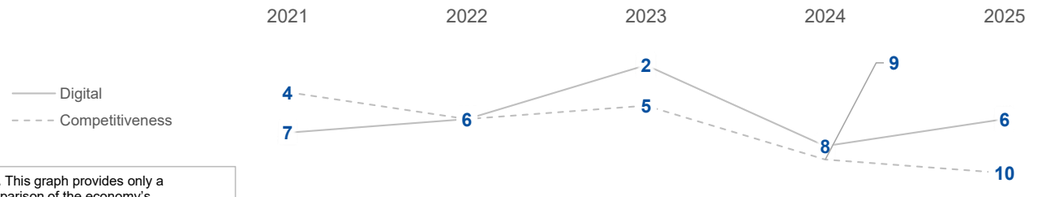


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	07	06	02	08	06
Knowledge	11	08	07	09	07
Technology	07	04	05	08	04
Future readiness	04	05	04	07	04

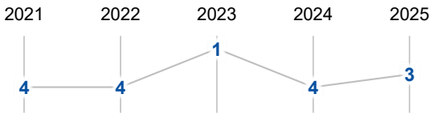
COMPETITIVENESS & DIGITAL RANKINGS



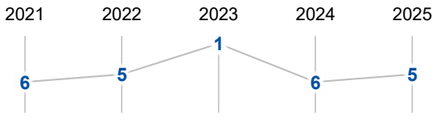
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



NETHERLANDS

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	04	04	03	04	06
Training & education	28	25	23	26	25
Scientific concentration	16	12	12	11	12

Talent	Rank
Educational assessment PISA - Math	10
▶ International experience	04
Management of cities	17
Digital/Technological skills	12
Foreign highly skilled personnel	07
Net flow of international students	06
▷ Female researchers	49
Scientific and technical employment	05

Training & education	Rank
Employee training	16
Total public expenditure on education	22
Higher education achievement	16
Pupil-teacher ratio (tertiary education)	22
▷ Graduates in Sciences	45
Women with degrees	26
Computer science education index	25

Scientific concentration	Rank
Total expenditure on R&D (%)	15
Total R&D personnel per capita	06
R&D productivity by publication	31
High-tech patent grants	12
AI-related patent publications	12
Robots in Education and R&D	21
AI articles	13

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	07	07	02	13	05
Capital	03	03	02	06	03
Technological framework	10	10	10	13	06

Regulatory framework	Rank
Starting a business	13
▷ Enforcing contracts	48
Immigration laws	21
Development & application of tech.	13
Scientific research legislation	09
Intellectual property rights	04
AI policies passed into law	06

Capital	Rank
▶ IT & media stock market capitalization	02
Funding for technological development	13
Banking and financial services	13
▶ Country credit rating	01
Venture capital	15
▷ Investment in Telecommunications	54
AI private investment	12

Technological framework	Rank
Communications technology	04
Mobile broadband subscribers	23
▷ Wireless broadband	40
Internet users	14
Internet bandwidth speed	10
High-tech exports (%)	18
▶ Secure internet servers	03

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	06	02	06	09	03
Business agility	08	08	08	14	08
IT integration	06	09	07	08	09

Adaptive attitudes	Rank
E-Participation	11
Internet retailing	11
Tablet possession	09
Smartphone possession	27
▶ Attitudes toward globalization	03
Flexibility and adaptability	16

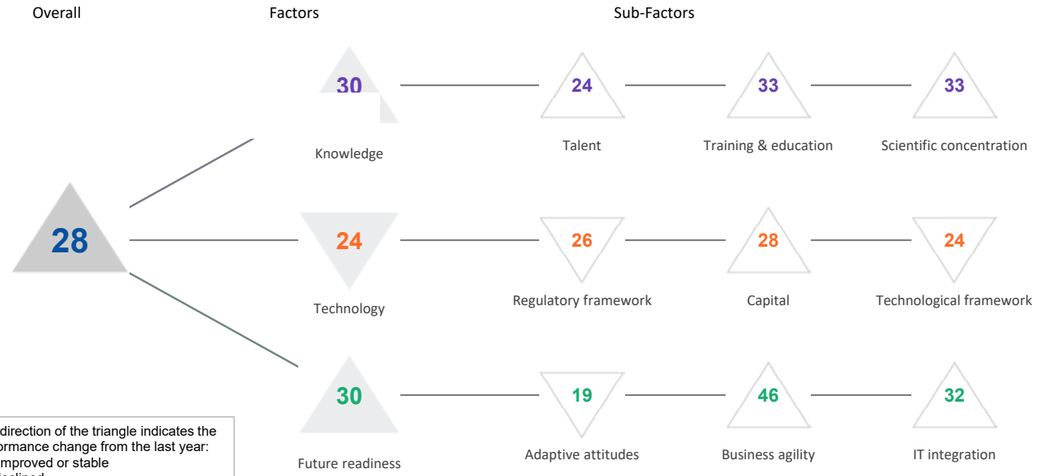
Business agility	Rank
Opportunities and threats	10
World robots distribution	19
Agility of companies	06
Use of big data and analytics	17
Knowledge transfer	07
Entrepreneurial fear of failure	10

IT integration	Rank
E-Government	10
Public-private partnerships	15
Cyber security	22
Software piracy	13
Government cyber security capacity	38
Privacy protection by law exists	05

NEW ZEALAND

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

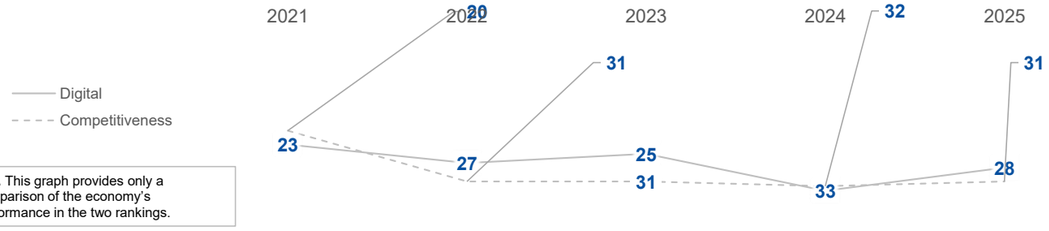


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	23	27	25	33	28
Knowledge	28	33	34	39	30
Technology	21	28	21	17	24
Future readiness	19	26	25	39	30

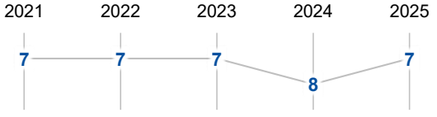
COMPETITIVENESS & DIGITAL RANKINGS



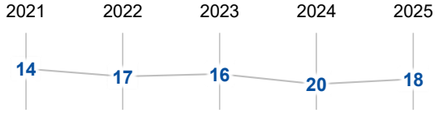
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS < 20 MILLION (37 economies)



NEW ZEALAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	14	32	33	46	24
Training & education	36	32	32	35	33
Scientific concentration	33	32	30	34	33

	Talent	Rank
	Educational assessment PISA - Math	24
▷	International experience	60
	Management of cities	45
	Digital/Technological skills	28
	Foreign highly skilled personnel	30
▶	Net flow of international students	08
	Female researchers	-
▶	Scientific and technical employment	09

	Training & education	Rank
▷	Employee training	47
	Total public expenditure on education	12
	Higher education achievement	29
	Pupil-teacher ratio (tertiary education)	34
	Graduates in Sciences	32
	Women with degrees	28
	Computer science education index	20

	Scientific concentration	Rank
	Total expenditure on R&D (%)	29
	Total R&D personnel per capita	22
	R&D productivity by publication	41
	High-tech patent grants	38
	AI-related patent publications	21
	Robots in Education and R&D	45
	AI articles	32

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	24	33	24	11	26
Capital	22	30	19	32	28
Technological framework	23	25	24	15	24

	Regulatory framework	Rank
▶	Starting a business	01
	Enforcing contracts	19
	Immigration laws	27
	Development & application of tech.	28
	Scientific research legislation	34
	Intellectual property rights	16
	AI policies passed into law	36

	Capital	Rank
	IT & media stock market capitalization	32
	Funding for technological development	44
	Banking and financial services	18
	Country credit rating	11
	Venture capital	26
	Investment in Telecommunications	32
	AI private investment	43

	Technological framework	Rank
	Communications technology	38
	Mobile broadband subscribers	15
	Wireless broadband	10
	Internet users	17
	Internet bandwidth speed	22
	High-tech exports (%)	38
	Secure internet servers	37

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	16	15	12	14	19
Business agility	30	49	40	64	46
IT integration	18	27	22	43	32

	Adaptive attitudes	Rank
	E-Participation	11
	Internet retailing	17
▶	Tablet possession	06
	Smartphone possession	40
	Attitudes toward globalization	20
▷	Flexibility and adaptability	48

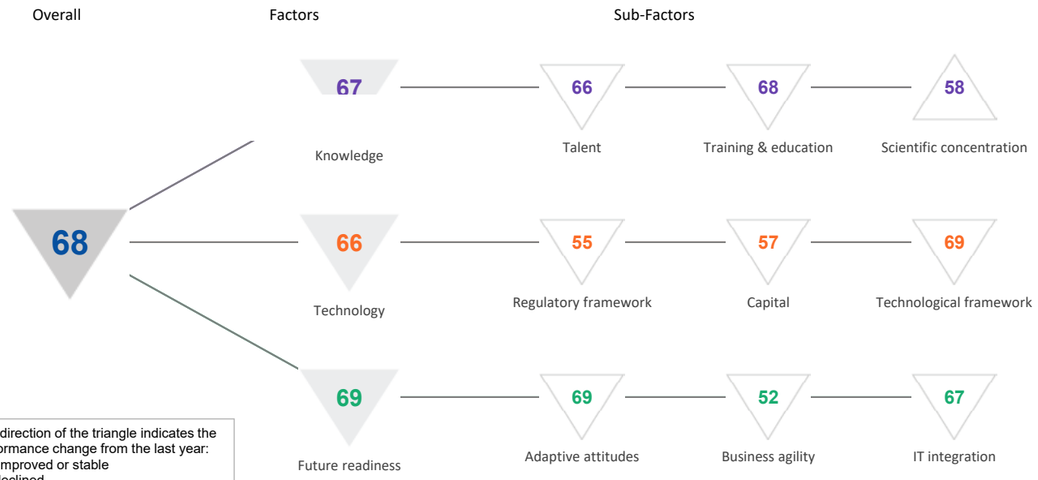
	Business agility	Rank
	Opportunities and threats	42
	World robots distribution	41
▷	Agility of companies	47
	Use of big data and analytics	40
	Knowledge transfer	27
	Entrepreneurial fear of failure	-

	IT integration	Rank
	E-Government	16
	Public-private partnerships	42
	Cyber security	36
▶	Software piracy	02
▷	Government cyber security capacity	46
	Privacy protection by law exists	45

NIGERIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

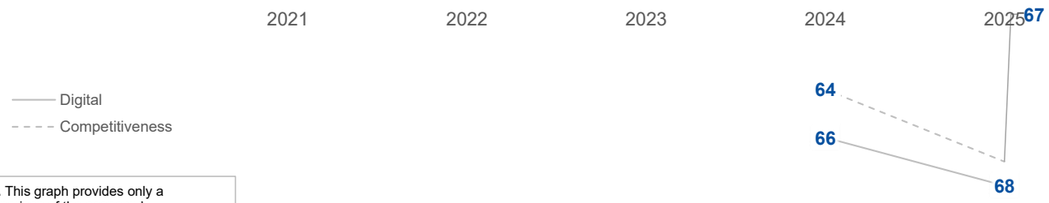


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	-	-	66	68
Knowledge	-	-	-	65	67
Technology	-	-	-	63	66
Future readiness	-	-	-	67	69

COMPETITIVENESS & DIGITAL RANKINGS

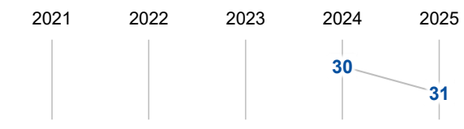


N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS > 20 MILLION (32 economies)



NIGERIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	-	-	49	66
Training & education	-	-	-	66	68
Scientific concentration	-	-	-	63	58

Talent	Rank
Educational assessment PISA - Math	-
International experience	47
Management of cities	54
Digital/Technological skills	64
Foreign highly skilled personnel	45
Net flow of international students	-
Female researchers	48
Scientific and technical employment	58

Training & education	Rank
Employee training	57
▷ Total public expenditure on education	68
Higher education achievement	-
Pupil-teacher ratio (tertiary education)	-
Graduates in Sciences	-
Women with degrees	61
Computer science education index	56

Scientific concentration	Rank
Total expenditure on R&D (%)	50
Total R&D personnel per capita	-
▶ R&D productivity by publication	29
High-tech patent grants	-
AI-related patent publications	52
Robots in Education and R&D	-
▷ AI articles	68

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	-	-	51	55
Capital	-	-	-	28	57
Technological framework	-	-	-	67	69

Regulatory framework	Rank
Starting a business	44
Enforcing contracts	44
Immigration laws	41
Development & application of tech.	59
Scientific research legislation	48
Intellectual property rights	66
AI policies passed into law	44

Capital	Rank
▶ IT & media stock market capitalization	11
Funding for technological development	64
Banking and financial services	65
Country credit rating	64
Venture capital	63
▶ Investment in Telecommunications	19
AI private investment	51

Technological framework	Rank
▷ Communications technology	68
Mobile broadband subscribers	60
▷ Wireless broadband	68
Internet users	67
Internet bandwidth speed	65
High-tech exports (%)	59
▷ Secure internet servers	69

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	-	-	67	69
Business agility	-	-	-	50	52
IT integration	-	-	-	66	67

Adaptive attitudes	Rank
E-Participation	62
Internet retailing	62
Tablet possession	58
Smartphone possession	64
Attitudes toward globalization	57
Flexibility and adaptability	52

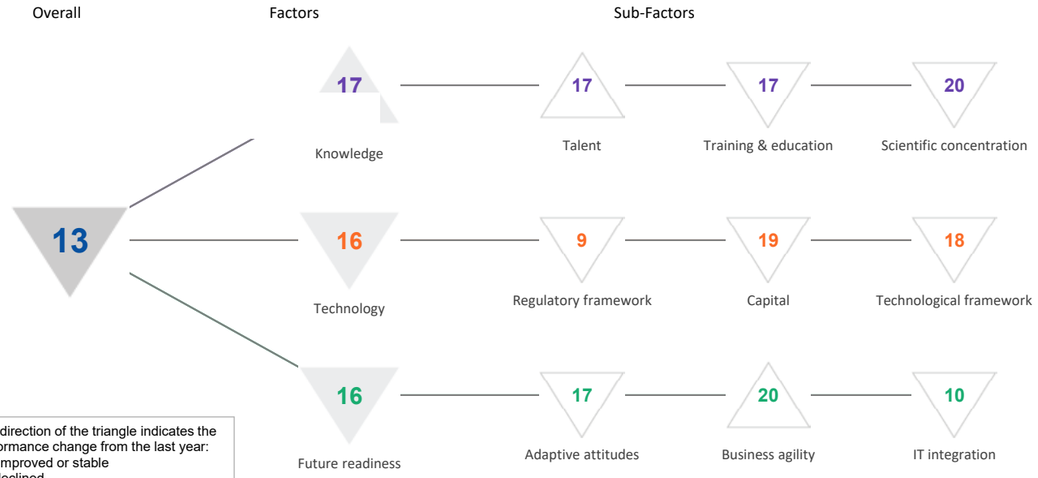
Business agility	Rank
Opportunities and threats	56
World robots distribution	-
Agility of companies	57
Use of big data and analytics	38
Knowledge transfer	59
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	66
Public-private partnerships	50
Cyber security	61
Software piracy	63
Government cyber security capacity	60
▶ Privacy protection by law exists	25

NORWAY

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

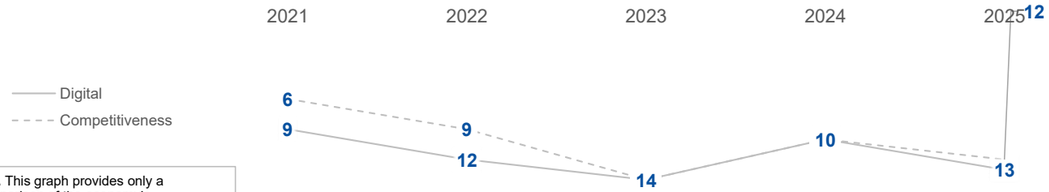


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	09	12	14	10	13
Knowledge	17	19	20	17	17
Technology	06	10	14	05	16
Future readiness	08	09	15	10	16

COMPETITIVENESS & DIGITAL RANKINGS



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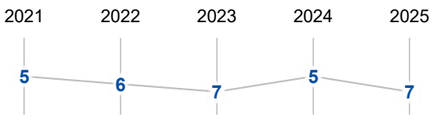
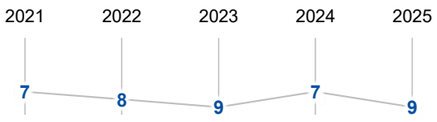
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



NORWAY

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	16	18	21	22	17
Training & education	11	14	16	15	17
Scientific concentration	22	22	22	16	20

Talent	Rank
Educational assessment PISA - Math	32
International experience	18
Management of cities	22
Digital/Technological skills	06
Foreign highly skilled personnel	22
▷ Net flow of international students	45
Female researchers	28
Scientific and technical employment	17

Training & education	Rank
Employee training	07
Total public expenditure on education	35
Higher education achievement	14
▶ Pupil-teacher ratio (tertiary education)	05
Graduates in Sciences	36
Women with degrees	11
Computer science education index	38

Scientific concentration	Rank
Total expenditure on R&D (%)	18
Total R&D personnel per capita	13
R&D productivity by publication	36
High-tech patent grants	26
AI-related patent publications	26
Robots in Education and R&D	24
▶ AI articles	06

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	01	04	13	06	09
Capital	06	04	20	05	19
Technological framework	12	14	21	10	18

Regulatory framework	Rank
Starting a business	14
▶ Enforcing contracts	03
Immigration laws	20
Development & application of tech.	11
Scientific research legislation	11
Intellectual property rights	20
▷ AI policies passed into law	48

Capital	Rank
IT & media stock market capitalization	30
Funding for technological development	08
Banking and financial services	33
▶ Country credit rating	01
Venture capital	13
▷ Investment in Telecommunications	47
AI private investment	23

Technological framework	Rank
Communications technology	18
Mobile broadband subscribers	13
▷ Wireless broadband	44
Internet users	08
Internet bandwidth speed	21
High-tech exports (%)	16
Secure internet servers	26

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	08	06	15	12	17
Business agility	11	13	26	20	20
IT integration	08	12	17	09	10

Adaptive attitudes	Rank
E-Participation	19
Internet retailing	09
▶ Tablet possession	03
Smartphone possession	22
▷ Attitudes toward globalization	42
Flexibility and adaptability	31

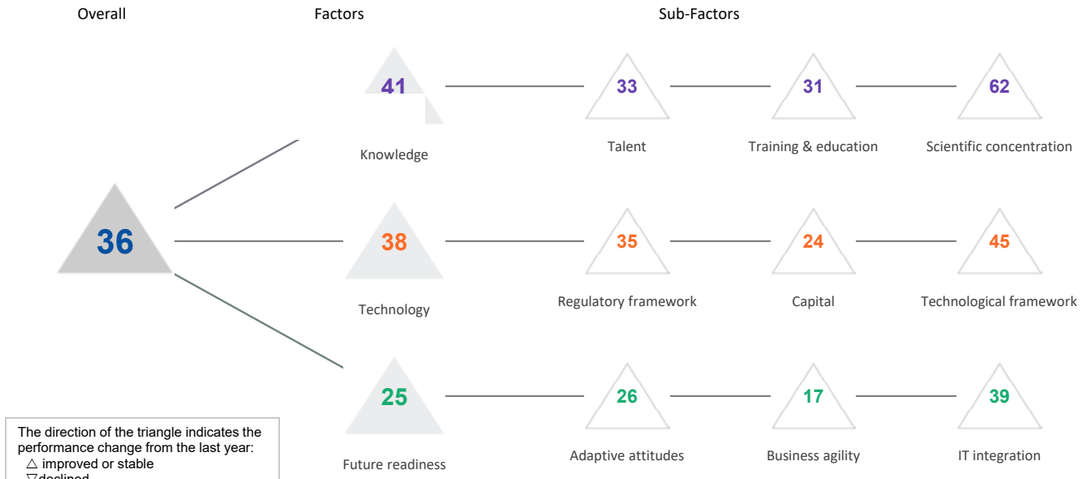
Business agility	Rank
Opportunities and threats	28
World robots distribution	39
Agility of companies	19
Use of big data and analytics	24
Knowledge transfer	18
Entrepreneurial fear of failure	11

IT integration	Rank
E-Government	15
Public-private partnerships	16
Cyber security	18
Software piracy	10
Government cyber security capacity	33
Privacy protection by law exists	31

OMAN

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

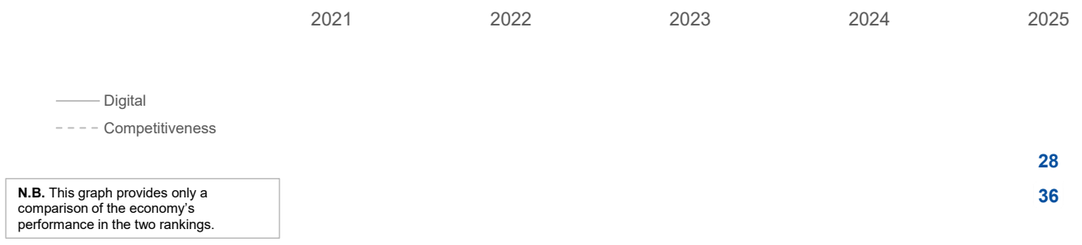


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	-	-	-	36
Knowledge	-	-	-	-	41
Technology	-	-	-	-	38
Future readiness	-	-	-	-	25

COMPETITIVENESS & DIGITAL RANKINGS



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PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS < 20 MILLION (37 economies)

OMAN

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	-	-	-	33
Training & education	-	-	-	-	31
Scientific concentration	-	-	-	-	62

Talent	Rank
Educational assessment PISA - Math	-
International experience	16
Management of cities	11
Digital/Technological skills	19
Foreign highly skilled personnel	18
▷ Net flow of international students	60
Female researchers	37
Scientific and technical employment	48

Training & education	Rank
Employee training	17
Total public expenditure on education	28
Higher education achievement	19
Pupil-teacher ratio (tertiary education)	38
▶ Graduates in Sciences	06
Women with degrees	-
▷ Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	56
Total R&D personnel per capita	-
R&D productivity by publication	46
High-tech patent grants	52
AI-related patent publications	52
Robots in Education and R&D	-
AI articles	39

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	-	-	-	35
Capital	-	-	-	-	24
Technological framework	-	-	-	-	45

Regulatory framework	Rank
Starting a business	24
Enforcing contracts	43
Immigration laws	46
Development & application of tech.	16
Scientific research legislation	30
Intellectual property rights	23
▷ AI policies passed into law	60

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	25
Banking and financial services	23
Country credit rating	56
Venture capital	27
Investment in Telecommunications	14
AI private investment	-

Technological framework	Rank
Communications technology	29
▶ Mobile broadband subscribers	06
Wireless broadband	49
Internet users	22
Internet bandwidth speed	52
High-tech exports (%)	56
▷ Secure internet servers	65

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	-	-	-	26
Business agility	-	-	-	-	17
IT integration	-	-	-	-	39

Adaptive attitudes	Rank
E-Participation	49
Internet retailing	52
Tablet possession	12
▶ Smartphone possession	04
Attitudes toward globalization	22
Flexibility and adaptability	14

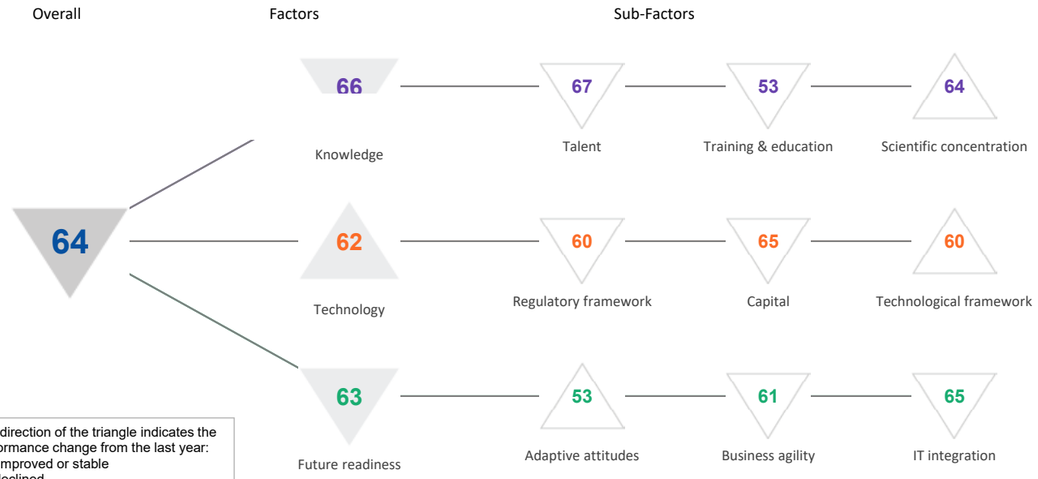
Business agility	Rank
Opportunities and threats	31
World robots distribution	-
Agility of companies	36
Use of big data and analytics	29
Knowledge transfer	22
▶ Entrepreneurial fear of failure	03

IT integration	Rank
E-Government	36
Public-private partnerships	12
▶ Cyber security	04
Software piracy	54
Government cyber security capacity	50
▷ Privacy protection by law exists	57

PERU

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

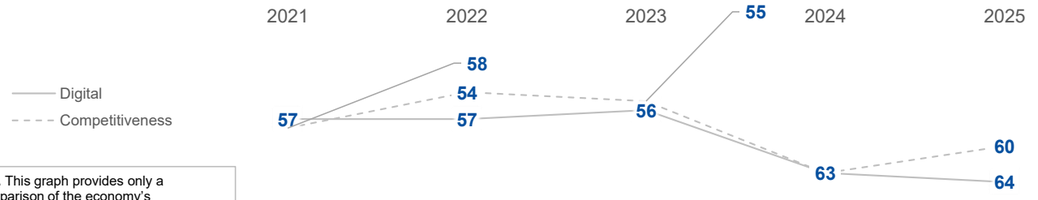


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	57	57	56	63	64
Knowledge	59	56	55	63	66
Technology	56	57	57	64	62
Future readiness	54	54	55	60	63

COMPETITIVENESS & DIGITAL RANKINGS



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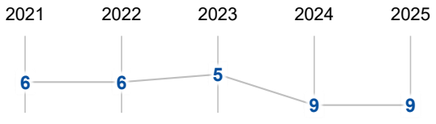
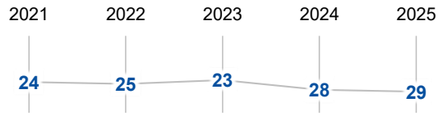
PEER GROUPS RANKINGS

THE AMERICAS (10 economies)



POPULATIONS > 20 MILLION (32 economies)



PERU

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	59	59	59	64	67
Training & education	41	37	38	47	53
Scientific concentration	60	60	62	64	64

Talent	Rank
Educational assessment PISA - Math	50
International experience	51
▷ Management of cities	66
Digital/Technological skills	63
Foreign highly skilled personnel	48
Net flow of international students	-
Female researchers	45
Scientific and technical employment	53

Training & education	Rank
▷ Employee training	67
Total public expenditure on education	45
▶ Higher education achievement	28
Pupil-teacher ratio (tertiary education)	45
Graduates in Sciences	-
Women with degrees	38
Computer science education index	57

Scientific concentration	Rank
Total expenditure on R&D (%)	-
Total R&D personnel per capita	-
R&D productivity by publication	-
High-tech patent grants	63
AI-related patent publications	52
Robots in Education and R&D	43
AI articles	51

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	49	51	51	58	60
Capital	43	53	51	62	65
Technological framework	58	59	59	61	60

Regulatory framework	Rank
Starting a business	58
Enforcing contracts	49
▶ Immigration laws	31
Development & application of tech.	57
Scientific research legislation	56
Intellectual property rights	61
AI policies passed into law	58

Capital	Rank
IT & media stock market capitalization	56
Funding for technological development	63
Banking and financial services	54
Country credit rating	47
Venture capital	57
Investment in Telecommunications	51
AI private investment	54

Technological framework	Rank
Communications technology	63
Mobile broadband subscribers	58
▷ Wireless broadband	64
Internet users	59
Internet bandwidth speed	41
High-tech exports (%)	55
Secure internet servers	55

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	54	53	47	54	53
Business agility	39	39	48	49	61
IT integration	56	59	61	63	65

Adaptive attitudes	Rank
▶ E-Participation	37
Internet retailing	54
Tablet possession	48
▶ Smartphone possession	39
Attitudes toward globalization	44
Flexibility and adaptability	53

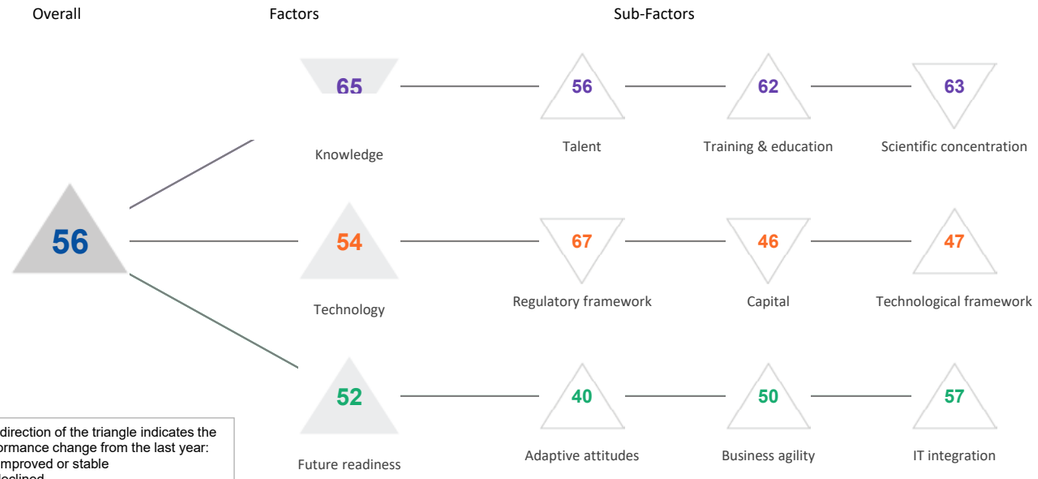
Business agility	Rank
Opportunities and threats	49
World robots distribution	53
Agility of companies	53
Use of big data and analytics	60
Knowledge transfer	61
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	50
Public-private partnerships	56
▷ Cyber security	64
Software piracy	56
▷ Government cyber security capacity	67
Privacy protection by law exists	47

PHILIPPINES

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

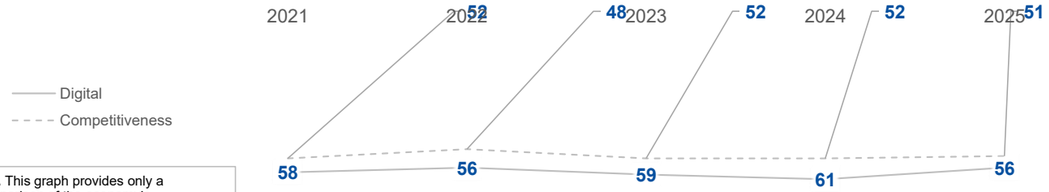


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	58	56	59	61	56
Knowledge	63	62	63	64	65
Technology	54	49	51	56	54
Future readiness	57	58	59	58	52

COMPETITIVENESS & DIGITAL RANKINGS

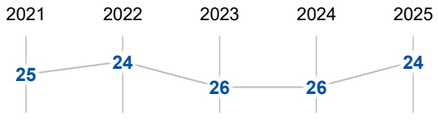


N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)

POPULATIONS > 20 MILLION (32 economies)



PHILIPPINES

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	55	55	56	60	56
Training & education	61	61	62	62	62
Scientific concentration	56	57	58	61	63

Talent	Rank
Educational assessment PISA - Math	58
International experience	50
Management of cities	51
Digital/Technological skills	47
Foreign highly skilled personnel	54
Net flow of international students	46
▶ Female researchers	02
Scientific and technical employment	59

Training & education	Rank
Employee training	46
Total public expenditure on education	55
Higher education achievement	55
Pupil-teacher ratio (tertiary education)	53
Graduates in Sciences	37
Women with degrees	58
Computer science education index	59

Scientific concentration	Rank
Total expenditure on R&D (%)	57
Total R&D personnel per capita	53
R&D productivity by publication	32
High-tech patent grants	45
AI-related patent publications	48
Robots in Education and R&D	51
▷ AI articles	65

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	62	62	63	66	67
Capital	40	40	41	45	46
Technological framework	49	45	43	53	47

Regulatory framework	Rank
▷ Starting a business	66
▷ Enforcing contracts	66
Immigration laws	48
Development & application of tech.	49
Scientific research legislation	55
Intellectual property rights	58
AI policies passed into law	40

Capital	Rank
IT & media stock market capitalization	39
Funding for technological development	58
Banking and financial services	39
Country credit rating	45
Venture capital	56
▶ Investment in Telecommunications	09
AI private investment	47

Technological framework	Rank
▷ Communications technology	66
Mobile broadband subscribers	37
Wireless broadband	30
Internet users	53
Internet bandwidth speed	56
▶ High-tech exports (%)	03
Secure internet servers	63

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	60	58	59	52	40
Business agility	37	45	50	54	50
IT integration	57	57	60	58	57

Adaptive attitudes	Rank
E-Participation	42
Internet retailing	55
Tablet possession	52
Smartphone possession	54
Attitudes toward globalization	32
▶ Flexibility and adaptability	13

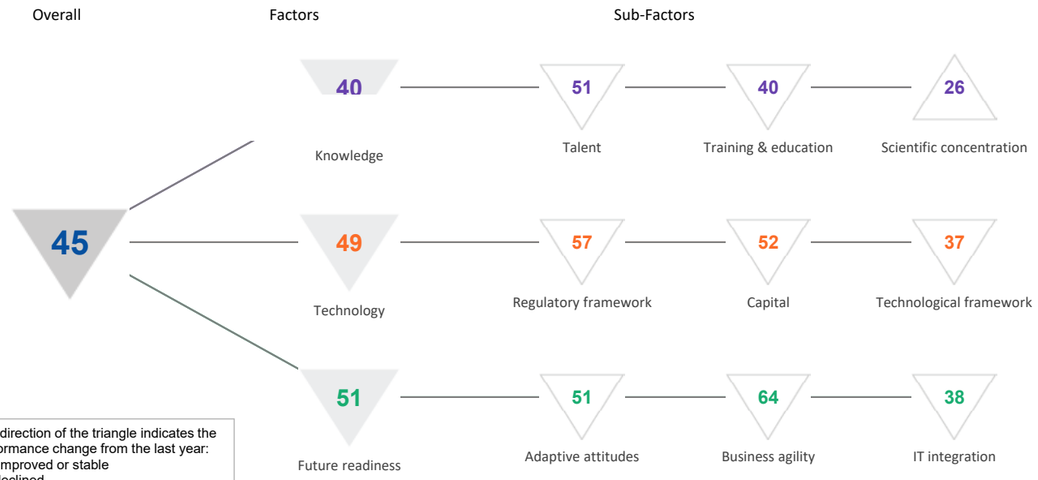
Business agility	Rank
Opportunities and threats	45
World robots distribution	38
Agility of companies	40
Use of big data and analytics	41
Knowledge transfer	52
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	58
▶ Public-private partnerships	26
Cyber security	60
Software piracy	57
▷ Government cyber security capacity	63
Privacy protection by law exists	32

POLAND

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

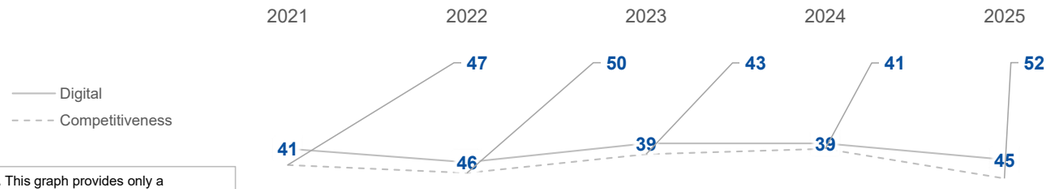


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	41	46	39	39	45
Knowledge	38	42	37	37	40
Technology	41	46	44	37	49
Future readiness	39	43	40	42	51

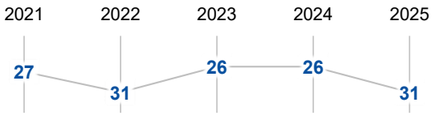
COMPETITIVENESS & DIGITAL RANKINGS



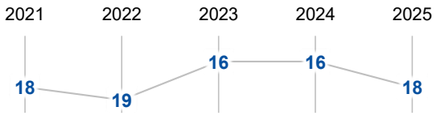
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS > 20 MILLION (32 economies)



POLAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	41	48	36	40	51
Training & education	44	42	39	39	40
Scientific concentration	28	30	28	37	26

Talent	Rank
▶ Educational assessment PISA - Math	12
International experience	61
Management of cities	53
Digital/Technological skills	61
Foreign highly skilled personnel	55
Net flow of international students	29
Female researchers	34
Scientific and technical employment	32

Training & education	Rank
▷ Employee training	65
Total public expenditure on education	27
Higher education achievement	27
Pupil-teacher ratio (tertiary education)	30
Graduates in Sciences	42
Women with degrees	30
Computer science education index	37

Scientific concentration	Rank
Total expenditure on R&D (%)	26
Total R&D personnel per capita	33
R&D productivity by publication	26
High-tech patent grants	39
AI-related patent publications	25
▶ Robots in Education and R&D	14
AI articles	40

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	53	57	49	46	57
Capital	47	49	43	44	52
Technological framework	31	33	37	28	37

Regulatory framework	Rank
Starting a business	56
Enforcing contracts	38
Immigration laws	57
Development & application of tech.	63
Scientific research legislation	58
Intellectual property rights	63
▶ AI policies passed into law	10

Capital	Rank
IT & media stock market capitalization	37
Funding for technological development	57
Banking and financial services	49
Country credit rating	37
Venture capital	38
Investment in Telecommunications	28
AI private investment	36

Technological framework	Rank
Communications technology	59
Mobile broadband subscribers	20
▶ Wireless broadband	05
Internet users	47
Internet bandwidth speed	29
High-tech exports (%)	43
Secure internet servers	27

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	28	37	45	43	51
Business agility	44	47	28	43	64
IT integration	45	51	44	35	38

Adaptive attitudes	Rank
E-Participation	37
Internet retailing	25
▶ Tablet possession	10
Smartphone possession	56
▷ Attitudes toward globalization	65
▷ Flexibility and adaptability	64

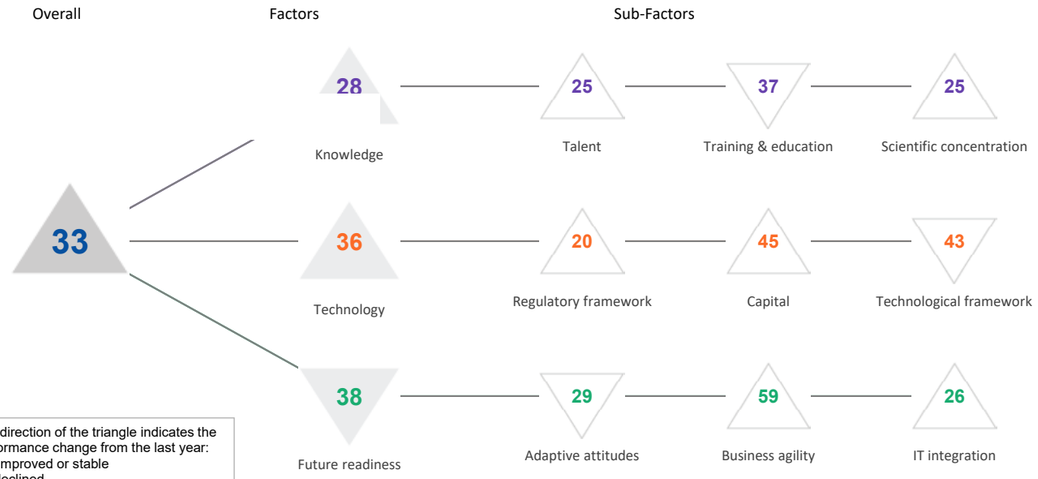
Business agility	Rank
▷ Opportunities and threats	64
World robots distribution	18
Agility of companies	59
▷ Use of big data and analytics	64
Knowledge transfer	53
Entrepreneurial fear of failure	42

IT integration	Rank
E-Government	33
Public-private partnerships	54
Cyber security	54
Software piracy	36
Government cyber security capacity	27
Privacy protection by law exists	16

PORTUGAL

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

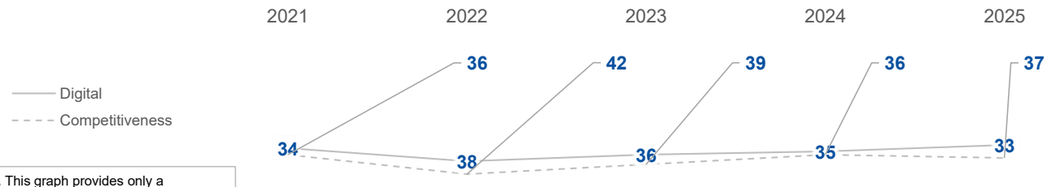


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	34	38	36	35	33
Knowledge	32	29	31	29	28
Technology	38	39	40	36	36
Future readiness	38	40	36	37	38

COMPETITIVENESS & DIGITAL RANKINGS



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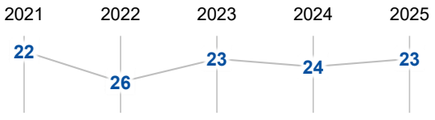
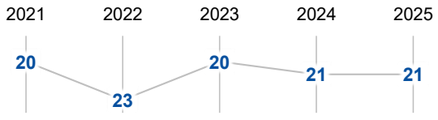
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



PORTUGAL

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	22	29	29	28	25
Training & education	38	36	34	34	37
Scientific concentration	27	27	26	26	25

Talent	Rank
Educational assessment PISA - Math	30
International experience	45
Management of cities	27
Digital/Technological skills	21
Foreign highly skilled personnel	41
Net flow of international students	17
Female researchers	20
Scientific and technical employment	27

	Training & education	Rank
▷	Employee training	61
	Total public expenditure on education	41
	Higher education achievement	40
▶	Pupil-teacher ratio (tertiary education)	10
	Graduates in Sciences	19
	Women with degrees	39
	Computer science education index	35

Scientific concentration	Rank
Total expenditure on R&D (%)	24
Total R&D personnel per capita	21
R&D productivity by publication	33
High-tech patent grants	30
AI-related patent publications	29
Robots in Education and R&D	31
AI articles	21

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	21	19	27	26	20
Capital	44	48	49	50	45
Technological framework	46	48	46	42	43

Regulatory framework	Rank
Starting a business	31
Enforcing contracts	29
▶ Immigration laws	05
Development & application of tech.	31
Scientific research legislation	37
Intellectual property rights	30
AI policies passed into law	15

Capital	Rank
IT & media stock market capitalization	44
Funding for technological development	41
Banking and financial services	35
Country credit rating	35
Venture capital	50
Investment in Telecommunications	26
AI private investment	30

Technological framework	Rank
▶ Communications technology	08
Mobile broadband subscribers	45
▷ Wireless broadband	56
Internet users	50
Internet bandwidth speed	20
▷ High-tech exports (%)	52
Secure internet servers	32

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	30	35	26	24	29
Business agility	58	60	58	61	59
IT integration	30	25	25	28	26

Adaptive attitudes	Rank
E-Participation	52
Internet retailing	32
Tablet possession	25
Smartphone possession	27
Attitudes toward globalization	37
▶ Flexibility and adaptability	11

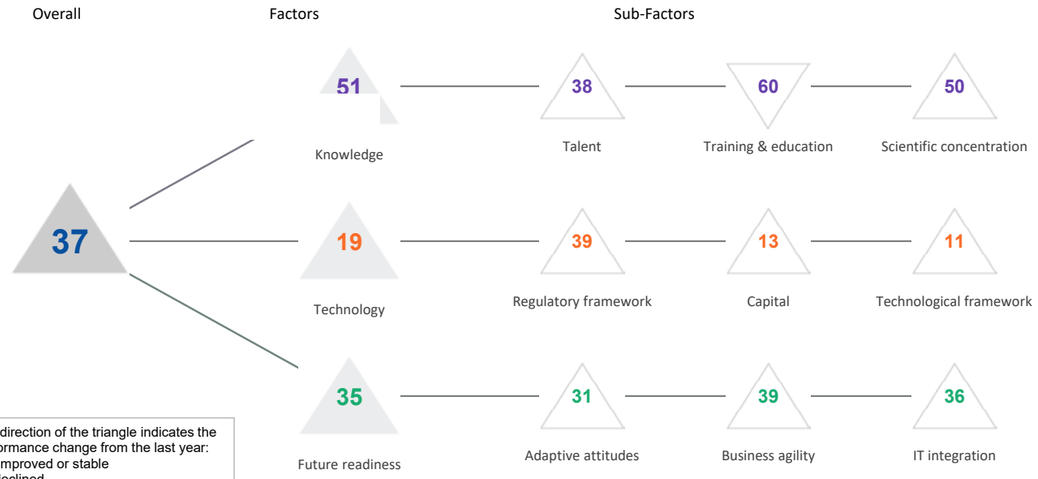
	Business agility	Rank
	Opportunities and threats	46
	World robots distribution	30
▷	Agility of companies	58
▷	Use of big data and analytics	55
	Knowledge transfer	47
	Entrepreneurial fear of failure	43

IT integration	Rank
E-Government	41
Public-private partnerships	34
Cyber security	42
Software piracy	27
Government cyber security capacity	17
▶ Privacy protection by law exists	02

PUERTO RICO

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

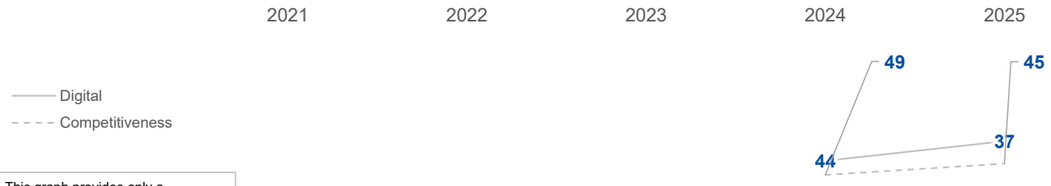


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	-	-	-	44	37
Knowledge	-	-	-	52	51
Technology	-	-	-	38	19
Future readiness	-	-	-	44	35

COMPETITIVENESS & DIGITAL RANKINGS



N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

THE AMERICAS (10 economies)

POPULATIONS < 20 MILLION (37 economies)

PUERTO RICO

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	-	-	-	48	38
Training & education	-	-	-	50	60
Scientific concentration	-	-	-	57	50

Talent	Rank
Educational assessment PISA - Math	-
International experience	23
▷ Management of cities	58
Digital/Technological skills	32
Foreign highly skilled personnel	53
Net flow of international students	-
Female researchers	-
Scientific and technical employment	-

Training & education	Rank
Employee training	34
▷ Total public expenditure on education	61
Higher education achievement	54
Pupil-teacher ratio (tertiary education)	23
Graduates in Sciences	43
Women with degrees	-
▷ Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	55
▶ Total R&D personnel per capita	01
▷ R&D productivity by publication	57
High-tech patent grants	-
AI-related patent publications	-
Robots in Education and R&D	53
AI articles	57

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	-	-	-	42	39
Capital	-	-	-	48	13
Technological framework	-	-	-	22	11

Regulatory framework	Rank
Starting a business	-
Enforcing contracts	-
▷ Immigration laws	68
Development & application of tech.	26
Scientific research legislation	40
Intellectual property rights	26
AI policies passed into law	-

Capital	Rank
IT & media stock market capitalization	-
Funding for technological development	33
Banking and financial services	48
Country credit rating	-
Venture capital	36
▶ Investment in Telecommunications	02
AI private investment	-

Technological framework	Rank
Communications technology	43
▶ Mobile broadband subscribers	09
Wireless broadband	33
Internet users	42
Internet bandwidth speed	26
▶ High-tech exports (%)	01
Secure internet servers	56

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	-	-	-	49	31
Business agility	-	-	-	44	39
IT integration	-	-	-	37	36

Adaptive attitudes	Rank
E-Participation	-
Internet retailing	-
Tablet possession	-
Smartphone possession	-
Attitudes toward globalization	41
Flexibility and adaptability	34

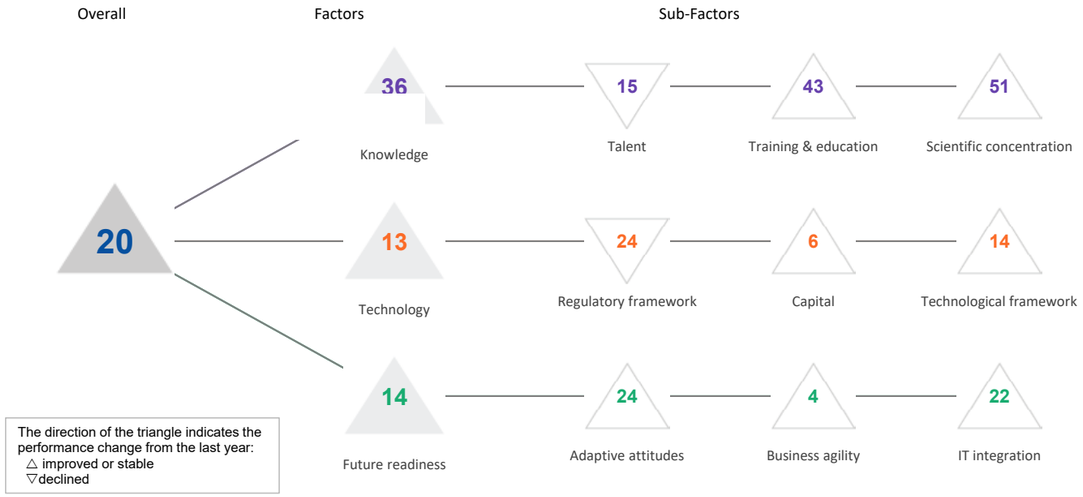
Business agility	Rank
Opportunities and threats	39
World robots distribution	55
Agility of companies	35
Use of big data and analytics	23
Knowledge transfer	35
Entrepreneurial fear of failure	28

IT integration	Rank
E-Government	-
▶ Public-private partnerships	21
Cyber security	29
Software piracy	29
Government cyber security capacity	-
Privacy protection by law exists	-

QATAR

DIGITAL TRENDS - OVERALL

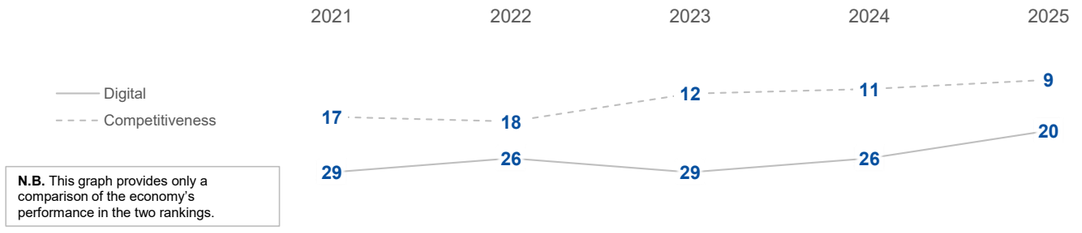
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	29	26	29	26	20
Knowledge	44	38	38	36	36
Technology	19	17	16	19	13
Future readiness	23	23	26	21	14

COMPETITIVENESS & DIGITAL RANKINGS



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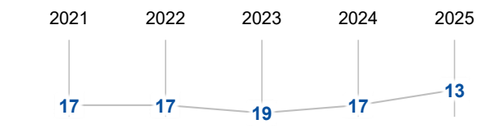
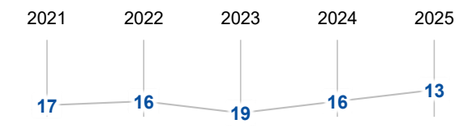
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



QATAR

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	19	11	10	06	15
Training & education	54	45	51	55	43
Scientific concentration	59	59	60	54	51

Talent	Rank
Educational assessment PISA - Math	45
International experience	03
Management of cities	02
Digital/Technological skills	04
Foreign highly skilled personnel	05
Net flow of international students	11
Female researchers	44
Scientific and technical employment	52

Training & education	Rank
Employee training	10
▷ Total public expenditure on education	65
Higher education achievement	52
Pupil-teacher ratio (tertiary education)	35
Graduates in Sciences	46
Women with degrees	09
Computer science education index	46

Scientific concentration	Rank
Total expenditure on R&D (%)	46
Total R&D personnel per capita	48
R&D productivity by publication	52
High-tech patent grants	23
AI-related patent publications	41
Robots in Education and R&D	51
AI articles	15

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	27	27	23	23	24
Capital	24	21	22	16	06
Technological framework	16	15	18	24	14

Regulatory framework	Rank
Starting a business	47
Enforcing contracts	58
Immigration laws	08
Development & application of tech.	02
Scientific research legislation	02
Intellectual property rights	10
AI policies passed into law	60

Capital	Rank
IT & media stock market capitalization	33
▶ Funding for technological development	01
▶ Banking and financial services	01
Country credit rating	16
Venture capital	02
▷ Investment in Telecommunications	64
AI private investment	-

Technological framework	Rank
Communications technology	07
▶ Mobile broadband subscribers	02
Wireless broadband	11
Internet users	06
Internet bandwidth speed	24
▷ High-tech exports (%)	61
Secure internet servers	57

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	26	29	33	28	24
Business agility	17	14	11	18	04
IT integration	28	28	27	27	22

Adaptive attitudes	Rank
▷ E-Participation	61
Internet retailing	51
Tablet possession	04
Smartphone possession	05
Attitudes toward globalization	07
Flexibility and adaptability	05

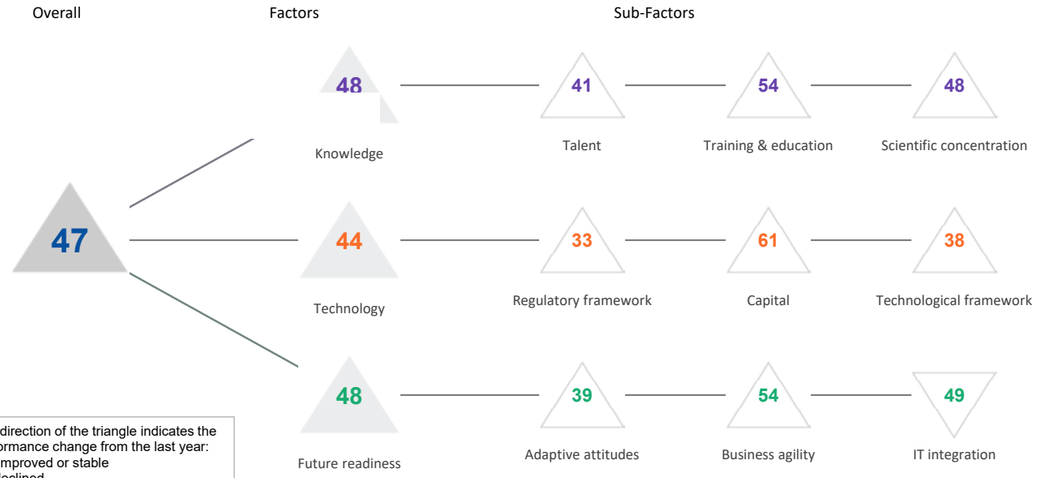
Business agility	Rank
Opportunities and threats	04
World robots distribution	54
Agility of companies	07
▶ Use of big data and analytics	01
Knowledge transfer	02
Entrepreneurial fear of failure	15

IT integration	Rank
E-Government	45
Public-private partnerships	02
▶ Cyber security	02
Software piracy	38
Government cyber security capacity	12
▷ Privacy protection by law exists	63

ROMANIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

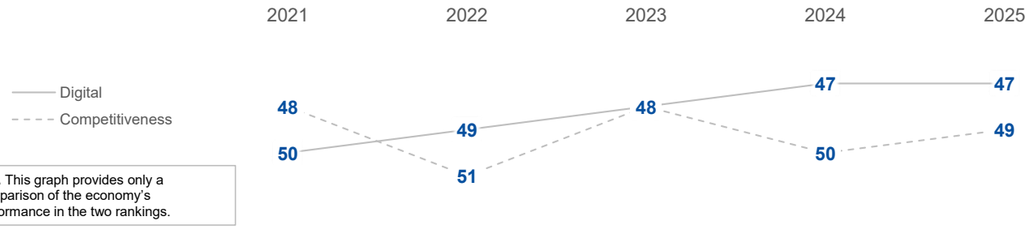


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	50	49	48	47	47
Knowledge	52	49	49	51	48
Technology	47	48	49	50	44
Future readiness	49	51	47	51	48

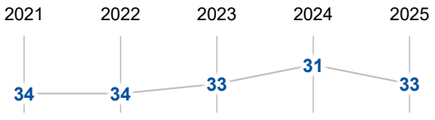
COMPETITIVENESS & DIGITAL RANKINGS



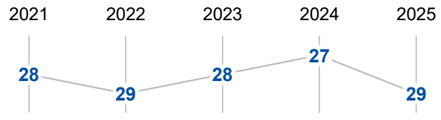
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



ROMANIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	50	51	50	45	41
Training & education	59	55	56	57	54
Scientific concentration	43	44	47	48	48

Talent	Rank
Educational assessment PISA - Math	40
International experience	40
Management of cities	44
Digital/Technological skills	20
Foreign highly skilled personnel	50
Net flow of international students	38
▶ Female researchers	17
Scientific and technical employment	50

Training & education	Rank
Employee training	36
▷ Total public expenditure on education	54
▷ Higher education achievement	58
Pupil-teacher ratio (tertiary education)	49
▶ Graduates in Sciences	14
Women with degrees	53
Computer science education index	52

Scientific concentration	Rank
Total expenditure on R&D (%)	52
Total R&D personnel per capita	46
R&D productivity by publication	25
High-tech patent grants	34
AI-related patent publications	35
Robots in Education and R&D	36
AI articles	45

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	40	39	39	47	33
Capital	61	61	59	64	61
Technological framework	40	41	40	41	38

Regulatory framework	Rank
Starting a business	39
▶ Enforcing contracts	18
Immigration laws	24
Development & application of tech.	42
Scientific research legislation	51
Intellectual property rights	50
AI policies passed into law	27

Capital	Rank
IT & media stock market capitalization	53
Funding for technological development	38
Banking and financial services	40
Country credit rating	54
Venture capital	44
▷ Investment in Telecommunications	66
AI private investment	31

Technological framework	Rank
Communications technology	26
Mobile broadband subscribers	51
Wireless broadband	42
Internet users	40
▶ Internet bandwidth speed	07
High-tech exports (%)	37
Secure internet servers	34

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	42	46	48	44	39
Business agility	57	59	45	56	54
IT integration	50	42	42	48	49

Adaptive attitudes	Rank
E-Participation	46
Internet retailing	42
Tablet possession	28
Smartphone possession	37
Attitudes toward globalization	52
Flexibility and adaptability	39

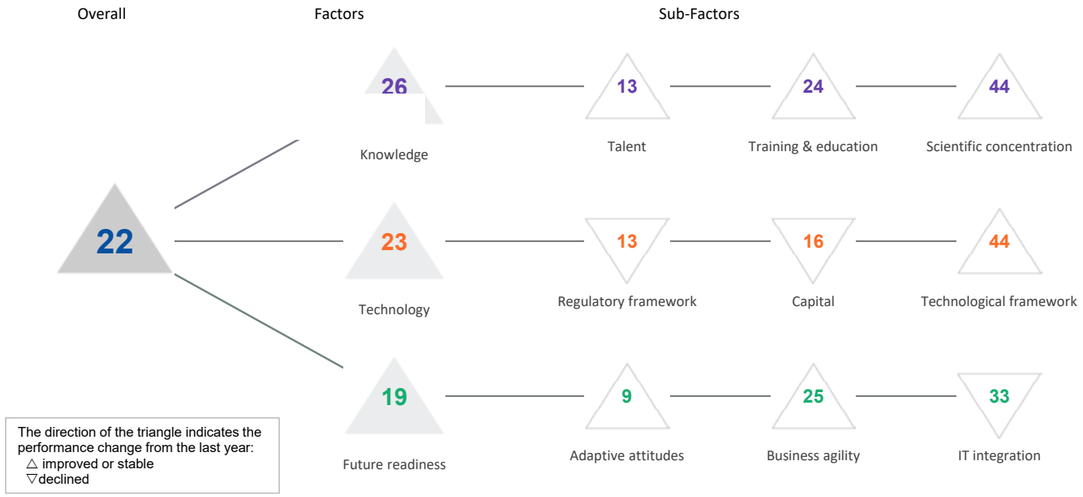
Business agility	Rank
Opportunities and threats	53
World robots distribution	34
Agility of companies	45
▶ Use of big data and analytics	14
Knowledge transfer	38
Entrepreneurial fear of failure	50

IT integration	Rank
▷ E-Government	57
Public-private partnerships	41
Cyber security	31
Software piracy	53
▷ Government cyber security capacity	54
Privacy protection by law exists	38

SAUDI ARABIA

DIGITAL TRENDS - OVERALL

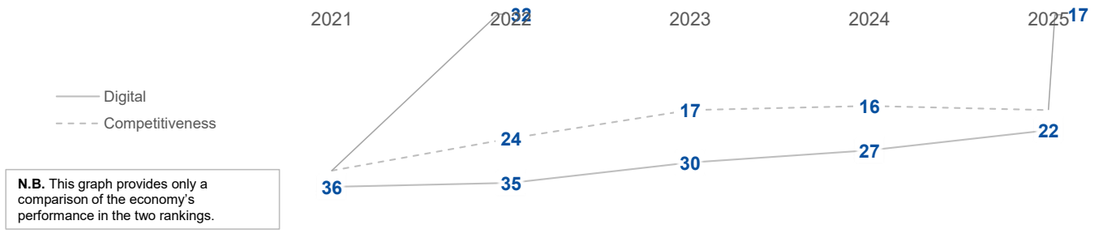
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

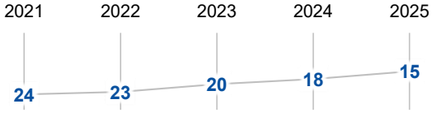
	2021	2022	2023	2024	2025
OVERALL	36	35	30	27	22
Knowledge	50	37	35	27	26
Technology	24	26	17	27	23
Future readiness	32	37	30	28	19

COMPETITIVENESS & DIGITAL RANKINGS

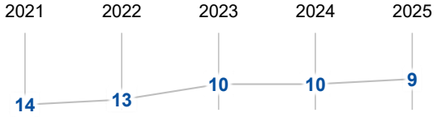


PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS > 20 MILLION (32 economies)



SAUDI ARABIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	32	28	19	18	13
Training & education	34	24	30	28	24
Scientific concentration	64	58	55	46	44

Talent	Rank
▷ Educational assessment PISA - Math	51
International experience	05
Management of cities	15
Digital/Technological skills	10
Foreign highly skilled personnel	06
Net flow of international students	35
Female researchers	18
Scientific and technical employment	-

Training & education	Rank
Employee training	13
Total public expenditure on education	17
Higher education achievement	31
Pupil-teacher ratio (tertiary education)	46
Graduates in Sciences	17
Women with degrees	34
Computer science education index	12

Scientific concentration	Rank
Total expenditure on R&D (%)	51
Total R&D personnel per capita	49
R&D productivity by publication	10
High-tech patent grants	27
AI-related patent publications	30
▷ Robots in Education and R&D	53
AI articles	20

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	30	25	14	12	13
Capital	15	22	09	15	16
Technological framework	35	34	36	51	44

Regulatory framework	Rank
Starting a business	21
Enforcing contracts	36
Immigration laws	10
▶ Development & application of tech.	01
Scientific research legislation	13
Intellectual property rights	13
AI policies passed into law	38

Capital	Rank
IT & media stock market capitalization	49
▶ Funding for technological development	02
Banking and financial services	12
Country credit rating	25
Venture capital	03
Investment in Telecommunications	43
AI private investment	39

Technological framework	Rank
Communications technology	17
Mobile broadband subscribers	44
Wireless broadband	20
▶ Internet users	01
Internet bandwidth speed	50
▷ High-tech exports (%)	65
▷ Secure internet servers	59

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	46	33	32	20	09
Business agility	35	32	25	30	25
IT integration	24	33	29	32	33

Adaptive attitudes	Rank
E-Participation	06
Internet retailing	46
Tablet possession	08
Smartphone possession	05
Attitudes toward globalization	15
Flexibility and adaptability	07

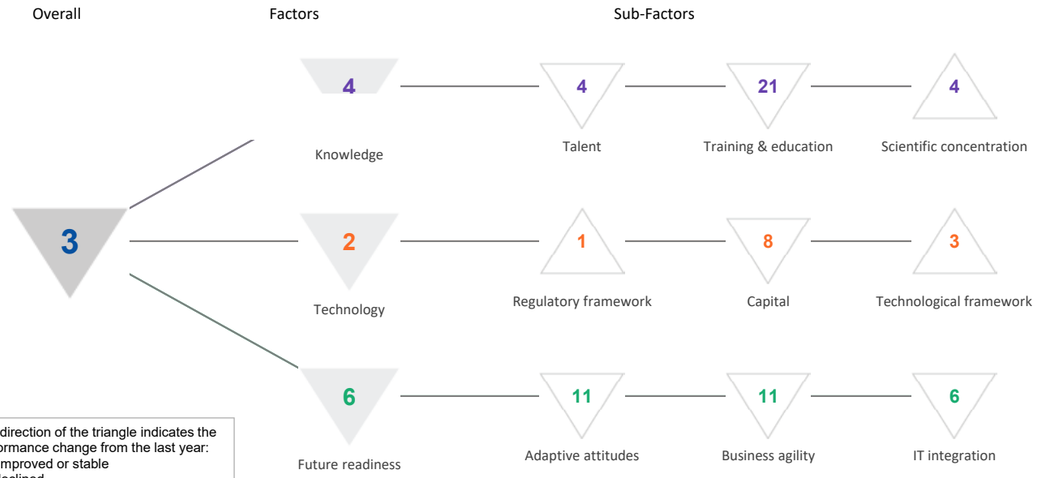
Business agility	Rank
Opportunities and threats	13
World robots distribution	50
Agility of companies	11
Use of big data and analytics	15
Knowledge transfer	17
Entrepreneurial fear of failure	47

IT integration	Rank
E-Government	06
▶ Public-private partnerships	03
▶ Cyber security	01
Software piracy	38
Government cyber security capacity	20
▷ Privacy protection by law exists	68

SINGAPORE

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

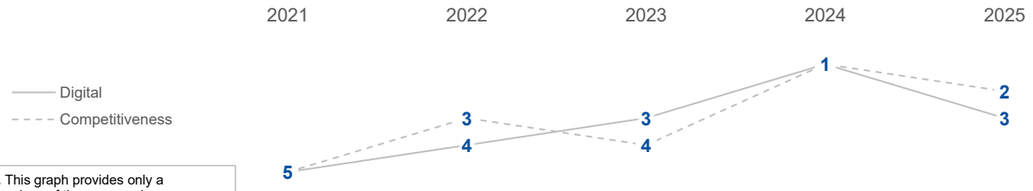


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	05	04	03	01	03
Knowledge	04	05	03	02	04
Technology	03	01	01	01	02
Future readiness	11	10	10	01	06

COMPETITIVENESS & DIGITAL RANKINGS

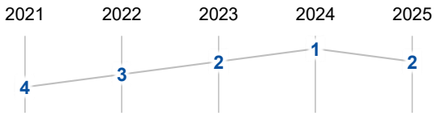


N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)

POPULATIONS < 20 MILLION (37 economies)



SINGAPORE

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	02	03	04	01	04
Training & education	13	09	09	14	21
Scientific concentration	11	11	11	09	04

Talent	Rank
Educational assessment PISA - Math	02
International experience	13
▶ Management of cities	01
Digital/Technological skills	15
Foreign highly skilled personnel	03
Net flow of international students	04
▷ Female researchers	46
Scientific and technical employment	31

Training & education	Rank
Employee training	19
▷ Total public expenditure on education	63
Higher education achievement	02
Pupil-teacher ratio (tertiary education)	26
Graduates in Sciences	04
Women with degrees	42
Computer science education index	39

Scientific concentration	Rank
Total expenditure on R&D (%)	22
Total R&D personnel per capita	12
R&D productivity by publication	39
▶ High-tech patent grants	01
AI-related patent publications	11
Robots in Education and R&D	28
AI articles	03

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	05	01	01	01	01
Capital	14	11	15	04	08
Technological framework	02	02	02	04	03

Regulatory framework	Rank
Starting a business	03
▶ Enforcing contracts	01
▷ Immigration laws	52
Development & application of tech.	05
Scientific research legislation	03
Intellectual property rights	07
AI policies passed into law	31

Capital	Rank
IT & media stock market capitalization	29
Funding for technological development	03
Banking and financial services	02
▶ Country credit rating	01
Venture capital	05
▷ Investment in Telecommunications	61
AI private investment	15

Technological framework	Rank
Communications technology	14
Mobile broadband subscribers	40
Wireless broadband	22
Internet users	25
Internet bandwidth speed	02
High-tech exports (%)	06
▶ Secure internet servers	02

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	11	17	13	01	11
Business agility	12	09	14	01	11
IT integration	07	08	11	01	06

Adaptive attitudes	Rank
E-Participation	06
Internet retailing	28
Tablet possession	13
Smartphone possession	03
Attitudes toward globalization	08
Flexibility and adaptability	26

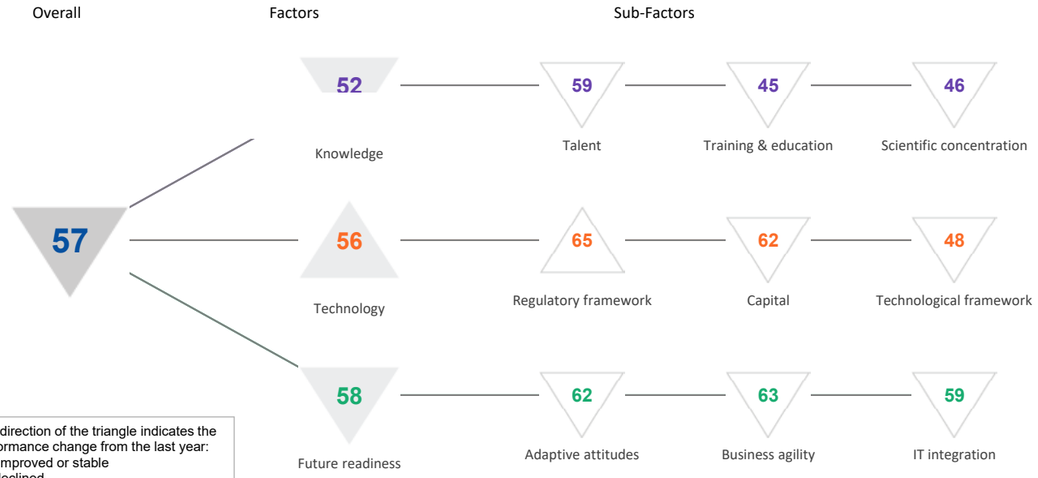
Business agility	Rank
Opportunities and threats	09
World robots distribution	13
Agility of companies	09
Use of big data and analytics	30
Knowledge transfer	11
Entrepreneurial fear of failure	-

IT integration	Rank
E-Government	03
Public-private partnerships	07
Cyber security	08
Software piracy	17
Government cyber security capacity	03
▷ Privacy protection by law exists	50

SLOVAK REPUBLIC

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

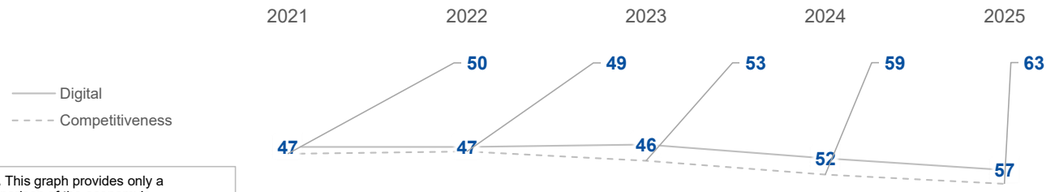


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	47	47	46	52	57
Knowledge	46	44	42	44	52
Technology	45	53	54	59	56
Future readiness	46	45	48	57	58

COMPETITIVENESS & DIGITAL RANKINGS



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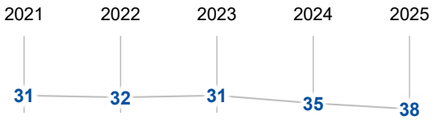
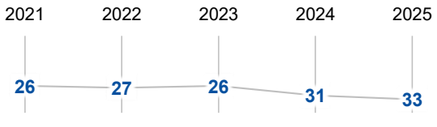
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



SLOVAK REPUBLIC

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	52	44	48	52	59
Training & education	49	43	40	42	45
Scientific concentration	40	39	39	43	46

Talent	Rank
Educational assessment PISA - Math	34
International experience	55
Management of cities	49
Digital/Technological skills	37
▷ Foreign highly skilled personnel	68
Net flow of international students	58
Female researchers	24
Scientific and technical employment	46

Training & education	Rank
Employee training	63
Total public expenditure on education	25
Higher education achievement	42
▶ Pupil-teacher ratio (tertiary education)	16
Graduates in Sciences	44
Women with degrees	41
Computer science education index	50

Scientific concentration	Rank
Total expenditure on R&D (%)	38
Total R&D personnel per capita	36
R&D productivity by publication	48
High-tech patent grants	25
AI-related patent publications	52
Robots in Education and R&D	33
AI articles	37

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	60	58	55	65	65
Capital	42	58	58	61	62
Technological framework	39	40	42	45	48

Regulatory framework	Rank
Starting a business	51
Enforcing contracts	34
▷ Immigration laws	67
▷ Development & application of tech.	68
Scientific research legislation	64
Intellectual property rights	64
▶ AI policies passed into law	20

Capital	Rank
IT & media stock market capitalization	58
Funding for technological development	61
Banking and financial services	44
Country credit rating	33
Venture capital	51
Investment in Telecommunications	39
AI private investment	48

Technological framework	Rank
Communications technology	31
Mobile broadband subscribers	46
Wireless broadband	46
Internet users	43
Internet bandwidth speed	32
High-tech exports (%)	46
Secure internet servers	25

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	49	50	52	58	62
Business agility	60	50	51	59	63
IT integration	40	39	36	45	59

Adaptive attitudes	Rank
E-Participation	43
Internet retailing	36
▶ Tablet possession	20
Smartphone possession	26
Attitudes toward globalization	66
▷ Flexibility and adaptability	69

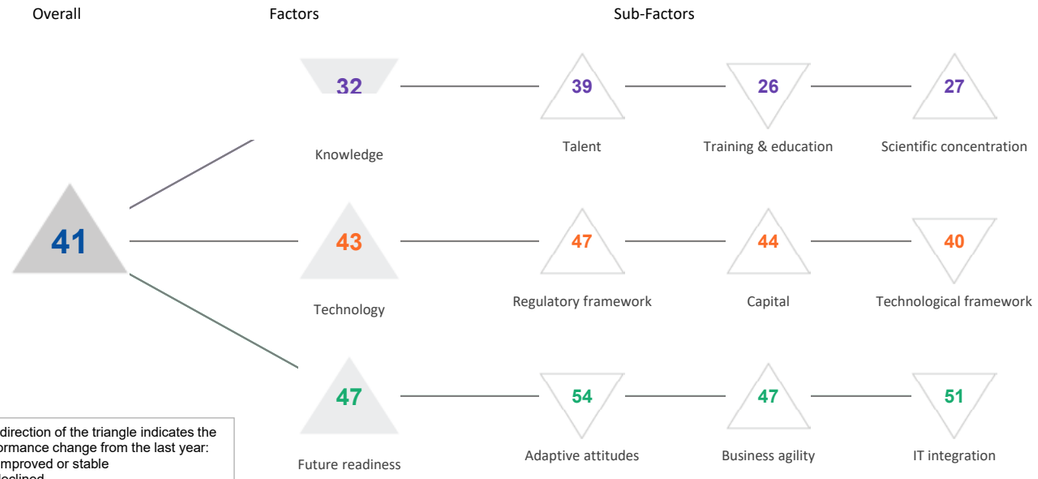
Business agility	Rank
Opportunities and threats	62
World robots distribution	28
Agility of companies	55
Use of big data and analytics	58
Knowledge transfer	66
▶ Entrepreneurial fear of failure	16

IT integration	Rank
E-Government	52
▷ Public-private partnerships	68
Cyber security	67
Software piracy	25
Government cyber security capacity	62
▶ Privacy protection by law exists	01

SLOVENIA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

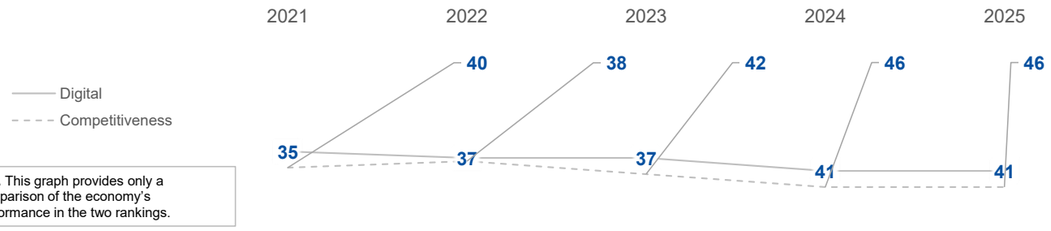


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	35	37	37	41	41
Knowledge	30	26	27	28	32
Technology	39	38	45	47	43
Future readiness	40	41	39	48	47

COMPETITIVENESS & DIGITAL RANKINGS



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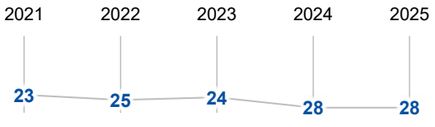
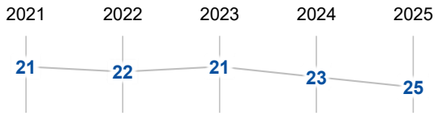
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



SLOVENIA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	37	38	39	42	39
Training & education	23	18	13	19	26
Scientific concentration	31	28	29	27	27

Talent	Rank
Educational assessment PISA - Math	19
International experience	46
Management of cities	37
Digital/Technological skills	34
▷ Foreign highly skilled personnel	65
Net flow of international students	21
Female researchers	36
Scientific and technical employment	15

Training & education	Rank
Employee training	37
Total public expenditure on education	13
Higher education achievement	38
▶ Pupil-teacher ratio (tertiary education)	08
▶ Graduates in Sciences	11
Women with degrees	33
Computer science education index	40

Scientific concentration	Rank
Total expenditure on R&D (%)	17
Total R&D personnel per capita	17
R&D productivity by publication	58
High-tech patent grants	29
AI-related patent publications	41
Robots in Education and R&D	35
▶ AI articles	10

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	45	43	48	55	47
Capital	39	38	38	49	44
Technological framework	33	35	41	37	40

Regulatory framework	Rank
Starting a business	23
Enforcing contracts	57
Immigration laws	45
Development & application of tech.	61
Scientific research legislation	46
Intellectual property rights	44
▶ AI policies passed into law	12

Capital	Rank
IT & media stock market capitalization	43
Funding for technological development	45
Banking and financial services	45
Country credit rating	31
Venture capital	52
▶ Investment in Telecommunications	13
AI private investment	56

Technological framework	Rank
Communications technology	37
Mobile broadband subscribers	26
Wireless broadband	36
Internet users	37
Internet bandwidth speed	42
High-tech exports (%)	51
Secure internet servers	14

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	41	45	38	50	54
Business agility	40	33	39	48	47
IT integration	35	37	38	46	51

Adaptive attitudes	Rank
E-Participation	32
Internet retailing	35
Tablet possession	16
Smartphone possession	38
▷ Attitudes toward globalization	62
▷ Flexibility and adaptability	66

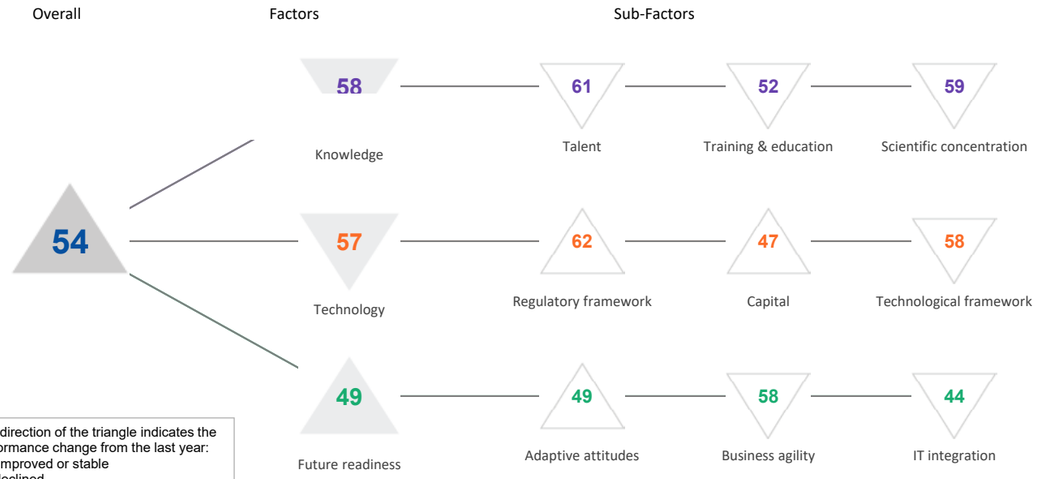
Business agility	Rank
Opportunities and threats	29
World robots distribution	32
Agility of companies	33
Use of big data and analytics	45
Knowledge transfer	56
Entrepreneurial fear of failure	27

IT integration	Rank
E-Government	29
▷ Public-private partnerships	61
Cyber security	44
Software piracy	29
▷ Government cyber security capacity	65
Privacy protection by law exists	20

SOUTH AFRICA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

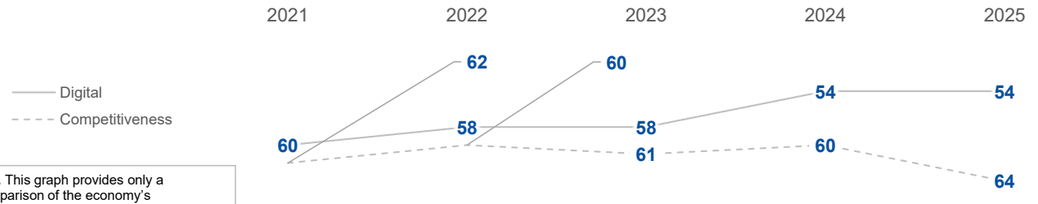


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	60	58	58	54	54
Knowledge	62	54	58	54	58
Technology	59	58	59	54	57
Future readiness	59	59	56	50	49

COMPETITIVENESS & DIGITAL RANKINGS



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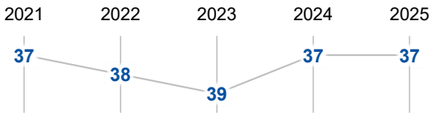
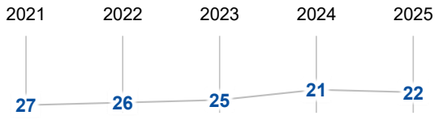
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS > 20 MILLION (32 economies)



SOUTH AFRICA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	58	57	60	59	61
Training & education	62	50	49	46	52
Scientific concentration	53	53	53	55	59

Talent	Rank
Educational assessment PISA - Math	-
International experience	56
▷ Management of cities	67
▷ Digital/Technological skills	67
Foreign highly skilled personnel	49
Net flow of international students	39
▶ Female researchers	14
Scientific and technical employment	-

Training & education	Rank
Employee training	58
▶ Total public expenditure on education	02
▷ Higher education achievement	62
Pupil-teacher ratio (tertiary education)	40
Graduates in Sciences	55
Women with degrees	57
Computer science education index	41

Scientific concentration	Rank
Total expenditure on R&D (%)	48
Total R&D personnel per capita	54
R&D productivity by publication	21
High-tech patent grants	50
AI-related patent publications	48
Robots in Education and R&D	47
AI articles	52

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	59	53	56	62	62
Capital	36	51	45	47	47
Technological framework	61	60	61	55	58

Regulatory framework	Rank
Starting a business	62
Enforcing contracts	54
▷ Immigration laws	66
Development & application of tech.	56
Scientific research legislation	41
Intellectual property rights	46
AI policies passed into law	44

Capital	Rank
▶ IT & media stock market capitalization	07
Funding for technological development	59
Banking and financial services	56
Country credit rating	58
Venture capital	61
▶ Investment in Telecommunications	06
AI private investment	42

Technological framework	Rank
Communications technology	61
Mobile broadband subscribers	50
Wireless broadband	39
Internet users	62
Internet bandwidth speed	62
High-tech exports (%)	57
Secure internet servers	38

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	59	57	57	55	49
Business agility	59	57	54	52	58
IT integration	55	55	56	40	44

Adaptive attitudes	Rank
E-Participation	24
Internet retailing	57
Tablet possession	42
Smartphone possession	35
Attitudes toward globalization	49
Flexibility and adaptability	58

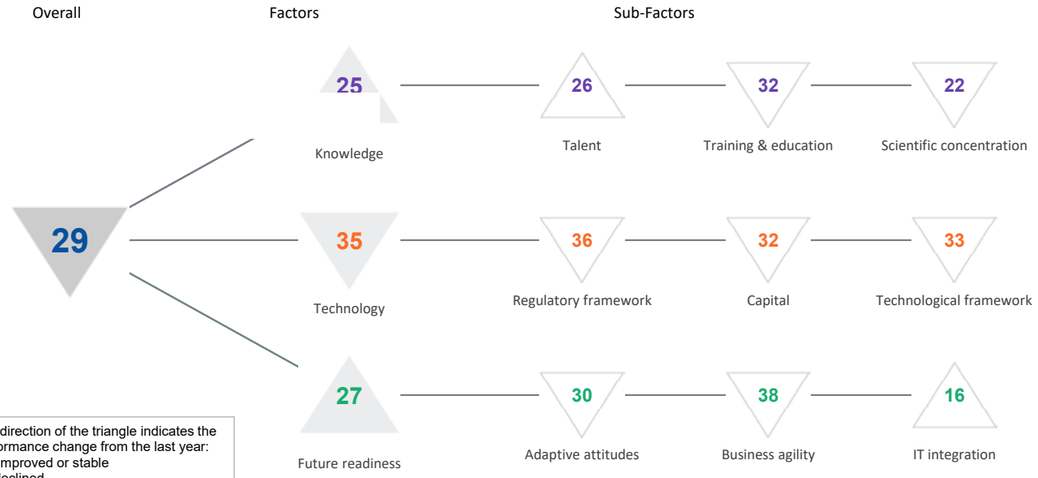
Business agility	Rank
Opportunities and threats	50
World robots distribution	33
Agility of companies	56
Use of big data and analytics	34
Knowledge transfer	48
Entrepreneurial fear of failure	48

IT integration	Rank
E-Government	35
▷ Public-private partnerships	63
Cyber security	57
▶ Software piracy	19
Government cyber security capacity	52
Privacy protection by law exists	27

SPAIN

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

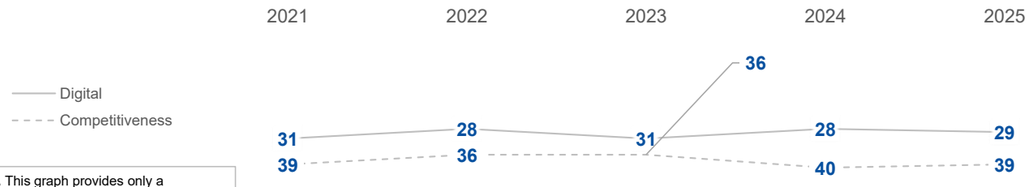


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	31	28	31	28	29
Knowledge	31	27	26	26	25
Technology	33	33	31	31	35
Future readiness	35	27	29	29	27

COMPETITIVENESS & DIGITAL RANKINGS

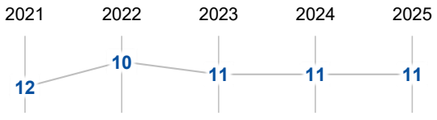


N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS > 20 MILLION (32 economies)



SPAIN

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	31	31	27	34	26
Training & education	40	35	35	31	32
Scientific concentration	23	20	19	21	22

Talent	Rank
Educational assessment PISA - Math	28
International experience	32
Management of cities	26
Digital/Technological skills	39
Foreign highly skilled personnel	28
Net flow of international students	33
Female researchers	21
Scientific and technical employment	23

Training & education	Rank
Employee training	45
Total public expenditure on education	44
Higher education achievement	20
Pupil-teacher ratio (tertiary education)	20
Graduates in Sciences	41
Women with degrees	29
▶ Computer science education index	08

Scientific concentration	Rank
Total expenditure on R&D (%)	27
Total R&D personnel per capita	30
R&D productivity by publication	11
High-tech patent grants	42
AI-related patent publications	20
▶ Robots in Education and R&D	07
AI articles	25

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	37	35	38	34	36
Capital	34	31	30	30	32
Technological framework	24	28	22	26	33

Regulatory framework	Rank
Starting a business	41
Enforcing contracts	22
Immigration laws	33
▷ Development & application of tech.	48
▷ Scientific research legislation	63
Intellectual property rights	31
▶ AI policies passed into law	06

Capital	Rank
IT & media stock market capitalization	20
Funding for technological development	43
Banking and financial services	32
Country credit rating	39
Venture capital	32
Investment in Telecommunications	27
AI private investment	20

Technological framework	Rank
Communications technology	22
Mobile broadband subscribers	42
Wireless broadband	37
Internet users	20
▶ Internet bandwidth speed	09
High-tech exports (%)	48
Secure internet servers	33

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	33	25	21	26	30
Business agility	49	44	43	33	38
IT integration	29	20	19	22	16

Adaptive attitudes	Rank
E-Participation	28
Internet retailing	29
Tablet possession	34
Smartphone possession	17
Attitudes toward globalization	33
▷ Flexibility and adaptability	51

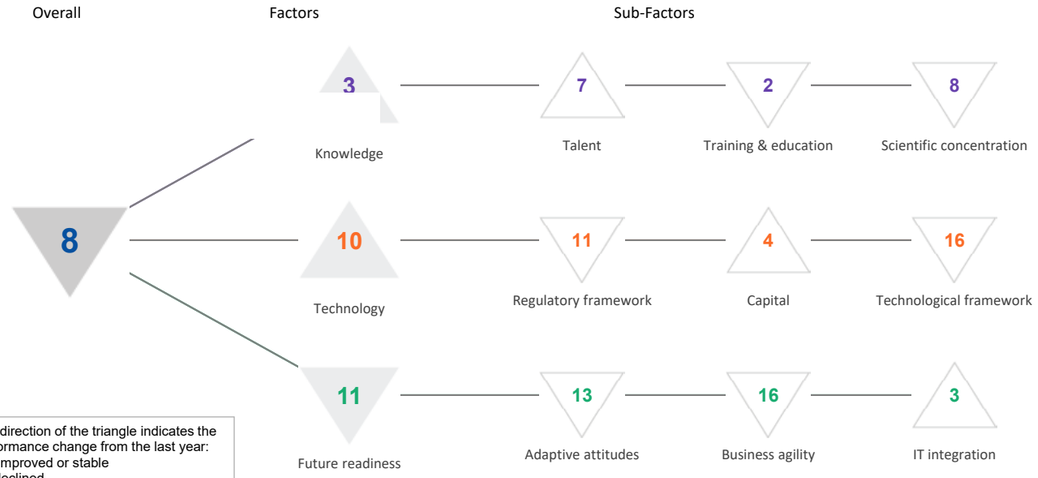
Business agility	Rank
Opportunities and threats	22
World robots distribution	10
Agility of companies	23
▷ Use of big data and analytics	52
▷ Knowledge transfer	58
Entrepreneurial fear of failure	17

IT integration	Rank
E-Government	17
Public-private partnerships	22
Cyber security	41
Software piracy	32
▶ Government cyber security capacity	10
Privacy protection by law exists	15

SWEDEN

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

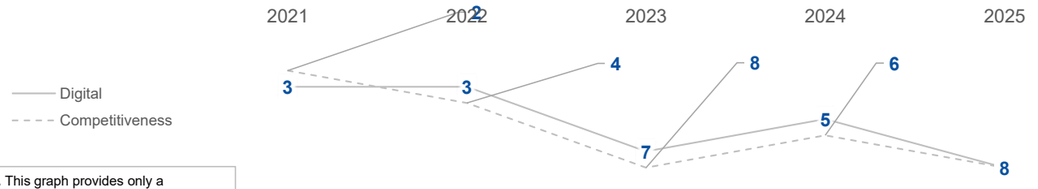


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	03	03	07	05	08
Knowledge	02	02	05	03	03
Technology	08	05	11	10	10
Future readiness	06	04	08	04	11

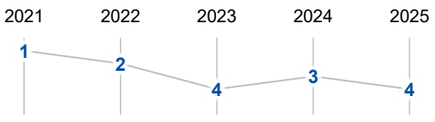
COMPETITIVENESS & DIGITAL RANKINGS



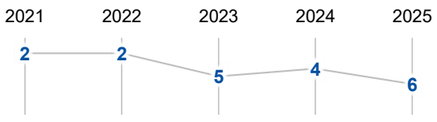
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



SWEDEN

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	07	06	13	07	07
Training & education	02	04	04	01	02
Scientific concentration	04	02	04	03	08

Talent	Rank
Educational assessment PISA - Math	23
International experience	08
Management of cities	18
Digital/Technological skills	09
Foreign highly skilled personnel	17
Net flow of international students	26
▷ Female researchers	38
▶ Scientific and technical employment	01

Training & education	Rank
Employee training	04
▶ Total public expenditure on education	03
Higher education achievement	17
Pupil-teacher ratio (tertiary education)	19
Graduates in Sciences	15
Women with degrees	10
Computer science education index	24

Scientific concentration	Rank
▶ Total expenditure on R&D (%)	03
Total R&D personnel per capita	11
▷ R&D productivity by publication	44
High-tech patent grants	09
AI-related patent publications	10
Robots in Education and R&D	22
AI articles	09

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	03	02	07	10	11
Capital	05	07	08	08	04
Technological framework	13	09	17	14	16

Regulatory framework	Rank
Starting a business	22
Enforcing contracts	30
▷ Immigration laws	46
Development & application of tech.	14
Scientific research legislation	08
Intellectual property rights	11
AI policies passed into law	12

Capital	Rank
IT & media stock market capitalization	26
Funding for technological development	19
Banking and financial services	04
▶ Country credit rating	01
Venture capital	06
▷ Investment in Telecommunications	53
AI private investment	04

Technological framework	Rank
Communications technology	15
Mobile broadband subscribers	17
Wireless broadband	32
Internet users	19
Internet bandwidth speed	17
High-tech exports (%)	27
Secure internet servers	19

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	05	07	10	08	13
Business agility	13	10	17	09	16
IT integration	05	04	08	05	03

Adaptive attitudes	Rank
E-Participation	30
Internet retailing	15
▶ Tablet possession	02
Smartphone possession	44
Attitudes toward globalization	04
Flexibility and adaptability	30

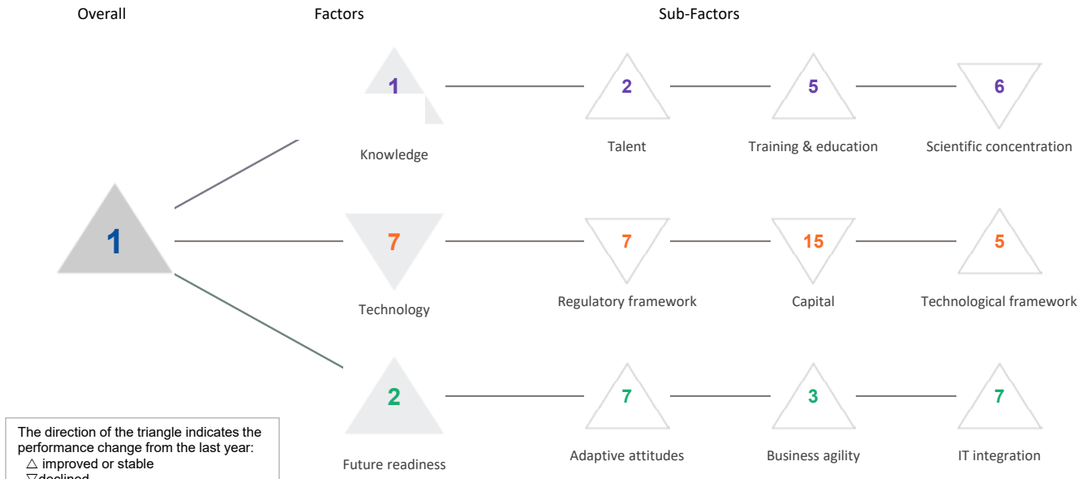
Business agility	Rank
▷ Opportunities and threats	41
World robots distribution	22
Agility of companies	16
Use of big data and analytics	08
Knowledge transfer	14
Entrepreneurial fear of failure	23

IT integration	Rank
E-Government	14
Public-private partnerships	04
Cyber security	27
Software piracy	06
Government cyber security capacity	22
Privacy protection by law exists	19

SWITZERLAND

DIGITAL TRENDS - OVERALL

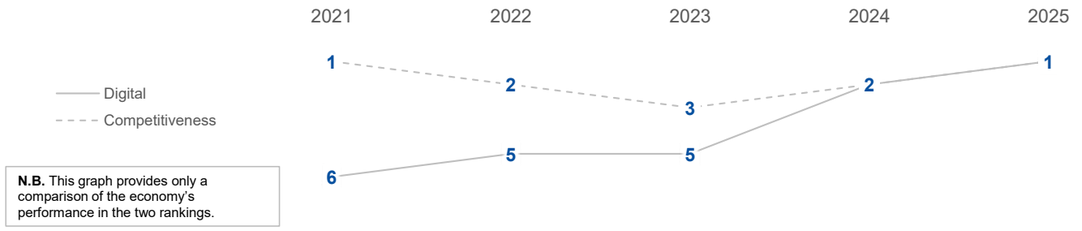
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	06	05	05	02	01
Knowledge	01	01	01	01	01
Technology	11	12	10	04	07
Future readiness	03	07	06	05	02

COMPETITIVENESS & DIGITAL RANKINGS



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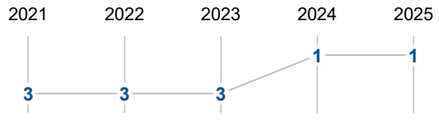
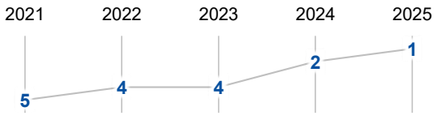
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



SWITZERLAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	03	02	02	03	02
Training & education	07	08	07	08	05
Scientific concentration	08	08	10	02	06

Talent	Rank
Educational assessment PISA - Math	08
International experience	02
Management of cities	06
Digital/Technological skills	13
▶ Foreign highly skilled personnel	01
Net flow of international students	09
Female researchers	30
Scientific and technical employment	02

Training & education	Rank
Employee training	01
Total public expenditure on education	10
Higher education achievement	22
Pupil-teacher ratio (tertiary education)	06
Graduates in Sciences	24
Women with degrees	31
Computer science education index	18

Scientific concentration	Rank
Total expenditure on R&D (%)	07
Total R&D personnel per capita	10
▷ R&D productivity by publication	35
High-tech patent grants	19
AI-related patent publications	09
Robots in Education and R&D	16
▶ AI articles	01

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	09	08	04	02	07
Capital	12	12	11	11	15
Technological framework	11	11	12	07	05

Regulatory framework	Rank
Starting a business	36
▷ Enforcing contracts	40
Immigration laws	12
Development & application of tech.	04
▶ Scientific research legislation	01
▶ Intellectual property rights	01
▷ AI policies passed into law	39

Capital	Rank
▷ IT & media stock market capitalization	48
Funding for technological development	07
Banking and financial services	05
Country credit rating	01
Venture capital	16
Investment in Telecommunications	31
AI private investment	18

Technological framework	Rank
Communications technology	03
Mobile broadband subscribers	14
▷ Wireless broadband	55
Internet users	12
Internet bandwidth speed	05
High-tech exports (%)	12
Secure internet servers	05

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	10	12	16	15	07
Business agility	04	07	07	07	03
IT integration	04	06	06	07	07

Adaptive attitudes	Rank
E-Participation	27
Internet retailing	04
Tablet possession	07
Smartphone possession	17
Attitudes toward globalization	18
Flexibility and adaptability	23

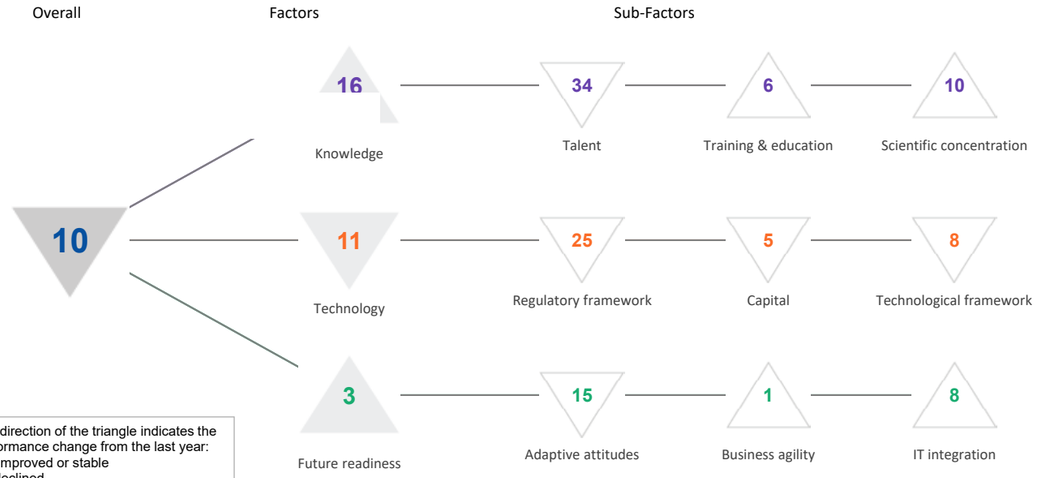
Business agility	Rank
Opportunities and threats	08
World robots distribution	24
Agility of companies	08
Use of big data and analytics	18
▶ Knowledge transfer	01
Entrepreneurial fear of failure	08

IT integration	Rank
E-Government	24
Public-private partnerships	06
Cyber security	09
Software piracy	10
Government cyber security capacity	32
Privacy protection by law exists	28

TAIWAN (CHINESE TAIPEI)

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

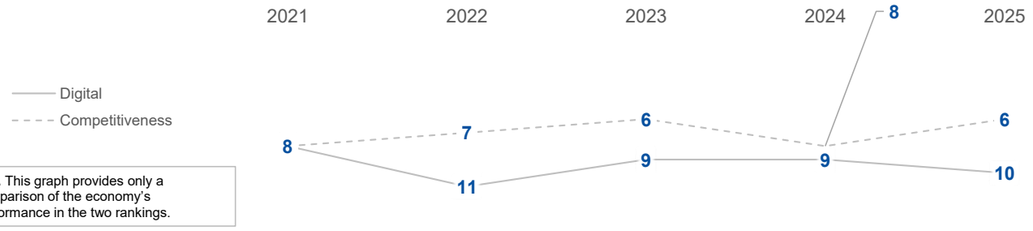


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	08	11	09	09	10
Knowledge	16	18	18	19	16
Technology	02	06	03	07	11
Future readiness	07	08	07	06	03

COMPETITIVENESS & DIGITAL RANKINGS



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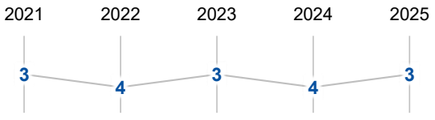
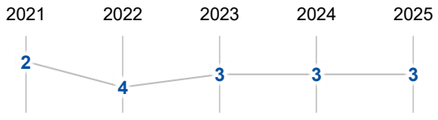
PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)



POPULATIONS > 20 MILLION (32 economies)



TAIWAN (CHINESE TAIPEI)

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	17	21	22	20	34
Training & education	12	11	10	07	06
Scientific concentration	19	21	21	22	10

Talent	Rank
Educational assessment PISA - Math	03
International experience	38
Management of cities	10
Digital/Technological skills	45
Foreign highly skilled personnel	42
Net flow of international students	16
▷ Female researchers	56
▷ Scientific and technical employment	45

Training & education	Rank
Employee training	06
▷ Total public expenditure on education	53
▶ Higher education achievement	03
▷ Pupil-teacher ratio (tertiary education)	51
Graduates in Sciences	08
Women with degrees	05
Computer science education index	16

Scientific concentration	Rank
▶ Total expenditure on R&D (%)	02
▶ Total R&D personnel per capita	02
R&D productivity by publication	38
High-tech patent grants	15
AI-related patent publications	-
Robots in Education and R&D	20
AI articles	29

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	16	14	16	24	25
Capital	02	09	05	03	05
Technological framework	04	04	05	03	08

Regulatory framework	Rank
Starting a business	10
Enforcing contracts	11
Immigration laws	39
Development & application of tech.	19
Scientific research legislation	11
Intellectual property rights	14
▷ AI policies passed into law	68

Capital	Rank
▶ IT & media stock market capitalization	01
Funding for technological development	11
Banking and financial services	07
Country credit rating	15
Venture capital	09
Investment in Telecommunications	36
AI private investment	32

Technological framework	Rank
Communications technology	20
Mobile broadband subscribers	21
Wireless broadband	06
Internet users	34
Internet bandwidth speed	14
High-tech exports (%)	04
Secure internet servers	36

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	13	13	17	13	15
Business agility	02	05	01	04	01
IT integration	15	13	14	14	08

Adaptive attitudes	Rank
E-Participation	-
Internet retailing	26
Tablet possession	29
Smartphone possession	14
Attitudes toward globalization	06
Flexibility and adaptability	09

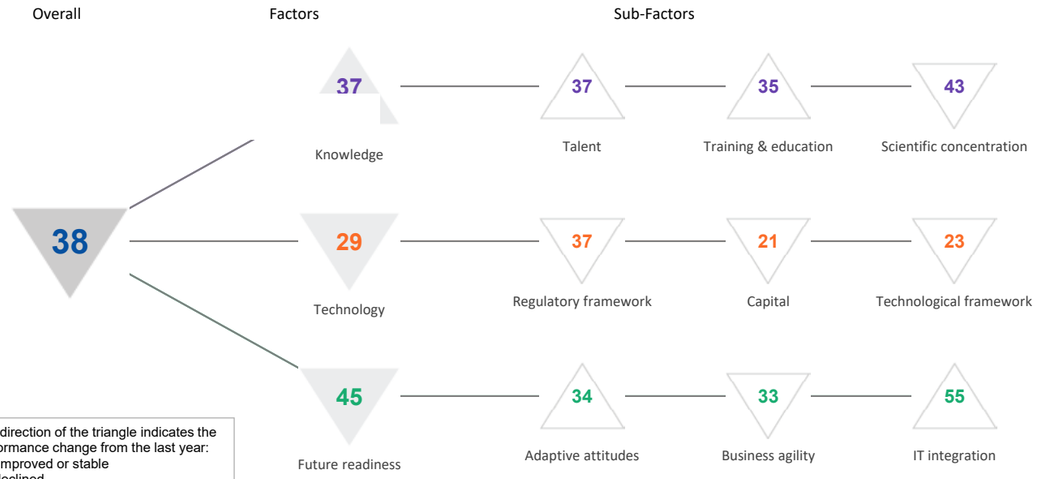
Business agility	Rank
Opportunities and threats	03
World robots distribution	07
▶ Agility of companies	02
Use of big data and analytics	03
Knowledge transfer	08
Entrepreneurial fear of failure	14

IT integration	Rank
E-Government	-
Public-private partnerships	11
Cyber security	16
Software piracy	24
Government cyber security capacity	18
Privacy protection by law exists	25

THAILAND

DIGITAL TRENDS - OVERALL

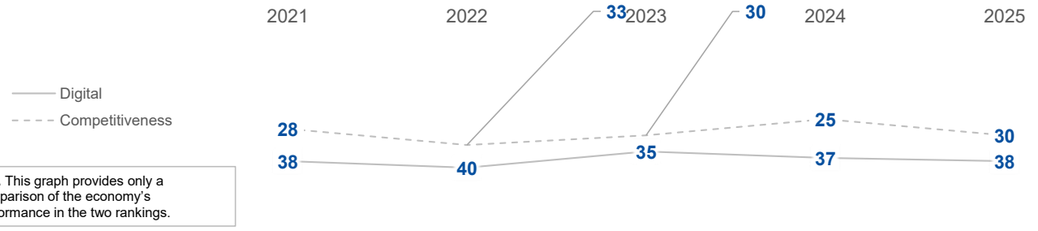
OVERALL PERFORMANCE (69 economies)



OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	38	40	35	37	38
Knowledge	42	45	41	40	37
Technology	22	20	15	23	29
Future readiness	44	49	42	41	45

COMPETITIVENESS & DIGITAL RANKINGS

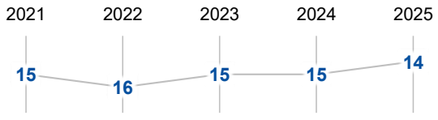


N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

ASIA - PACIFIC (14 economies)

POPULATIONS > 20 MILLION (32 economies)



THAILAND

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	39	37	35	39	37
Training & education	56	57	52	40	35
Scientific concentration	36	36	38	42	43

Talent	Rank
Educational assessment PISA - Math	49
International experience	14
Management of cities	23
Digital/Technological skills	41
Foreign highly skilled personnel	25
Net flow of international students	44
▶ Female researchers	12
▷ Scientific and technical employment	57

Training & education	Rank
Employee training	23
Total public expenditure on education	32
Higher education achievement	47
Pupil-teacher ratio (tertiary education)	-
▶ Graduates in Sciences	07
Women with degrees	48
Computer science education index	44

Scientific concentration	Rank
Total expenditure on R&D (%)	41
Total R&D personnel per capita	43
R&D productivity by publication	27
High-tech patent grants	37
AI-related patent publications	41
Robots in Education and R&D	12
AI articles	53

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	29	34	31	36	37
Capital	19	20	12	13	21
Technological framework	22	18	15	21	23

Regulatory framework	Rank
Starting a business	26
Enforcing contracts	28
Immigration laws	28
Development & application of tech.	41
Scientific research legislation	42
Intellectual property rights	41
AI policies passed into law	40

Capital	Rank
▶ IT & media stock market capitalization	09
Funding for technological development	30
Banking and financial services	25
Country credit rating	43
Venture capital	34
▶ Investment in Telecommunications	08
AI private investment	53

Technological framework	Rank
Communications technology	16
Mobile broadband subscribers	24
Wireless broadband	27
Internet users	38
Internet bandwidth speed	13
High-tech exports (%)	15
Secure internet servers	48

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	53	52	42	36	34
Business agility	34	41	34	25	33
IT integration	43	50	49	55	55

Adaptive attitudes	Rank
E-Participation	37
Internet retailing	34
▷ Tablet possession	54
Smartphone possession	46
Attitudes toward globalization	13
Flexibility and adaptability	22

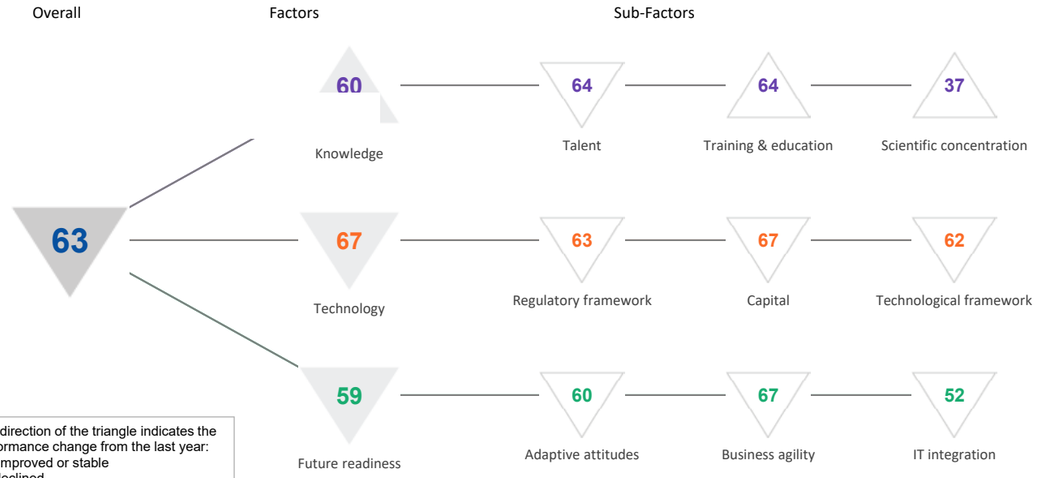
Business agility	Rank
Opportunities and threats	35
▶ World robots distribution	11
Agility of companies	37
Use of big data and analytics	33
Knowledge transfer	33
Entrepreneurial fear of failure	35

IT integration	Rank
E-Government	44
Public-private partnerships	18
Cyber security	39
▷ Software piracy	58
▷ Government cyber security capacity	55
▷ Privacy protection by law exists	58

TÜRKIYE

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

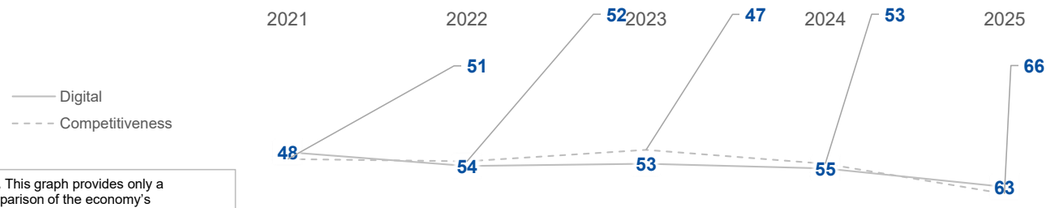


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	48	54	53	55	63
Knowledge	57	59	61	60	60
Technology	52	54	55	58	67
Future readiness	41	44	44	46	59

COMPETITIVENESS & DIGITAL RANKINGS



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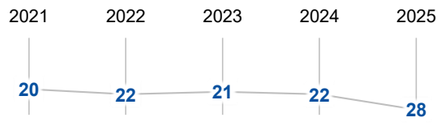
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS > 20 MILLION (32 economies)



TÜRKIYE

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	49	47	51	51	64
Training & education	63	63	63	64	64
Scientific concentration	41	41	41	45	37

Talent	Rank
Educational assessment PISA - Math	37
International experience	63
Management of cities	62
Digital/Technological skills	57
Foreign highly skilled personnel	67
Net flow of international students	25
Female researchers	32
Scientific and technical employment	44

	Training & education	Rank
▷	Employee training	68
	Total public expenditure on education	42
	Higher education achievement	36
	Pupil-teacher ratio (tertiary education)	61
	Graduates in Sciences	53
	Women with degrees	50
	Computer science education index	30

	Scientific concentration	Rank
	Total expenditure on R&D (%)	30
	Total R&D personnel per capita	41
▶	R&D productivity by publication	13
	High-tech patent grants	53
	AI-related patent publications	24
	Robots in Education and R&D	30
▷	AI articles	69

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	41	44	40	37	63
Capital	60	60	60	63	67
Technological framework	48	52	53	56	62

	Regulatory framework	Rank
	Starting a business	35
▶	Enforcing contracts	20
	Immigration laws	38
	Development & application of tech.	64
	Scientific research legislation	66
▷	Intellectual property rights	67
	AI policies passed into law	40

	Capital	Rank
	IT & media stock market capitalization	50
	Funding for technological development	66
	Banking and financial services	67
	Country credit rating	62
	Venture capital	66
	Investment in Telecommunications	37
	AI private investment	17

	Technological framework	Rank
	Communications technology	58
	Mobile broadband subscribers	67
	Wireless broadband	58
	Internet users	49
	Internet bandwidth speed	57
	High-tech exports (%)	58
	Secure internet servers	41

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	34	42	40	46	60
Business agility	29	42	35	46	67
IT integration	47	54	55	49	52

	Adaptive attitudes	Rank
▶	E-Participation	19
	Internet retailing	44
	Tablet possession	51
▶	Smartphone possession	24
	Attitudes toward globalization	67
	Flexibility and adaptability	57

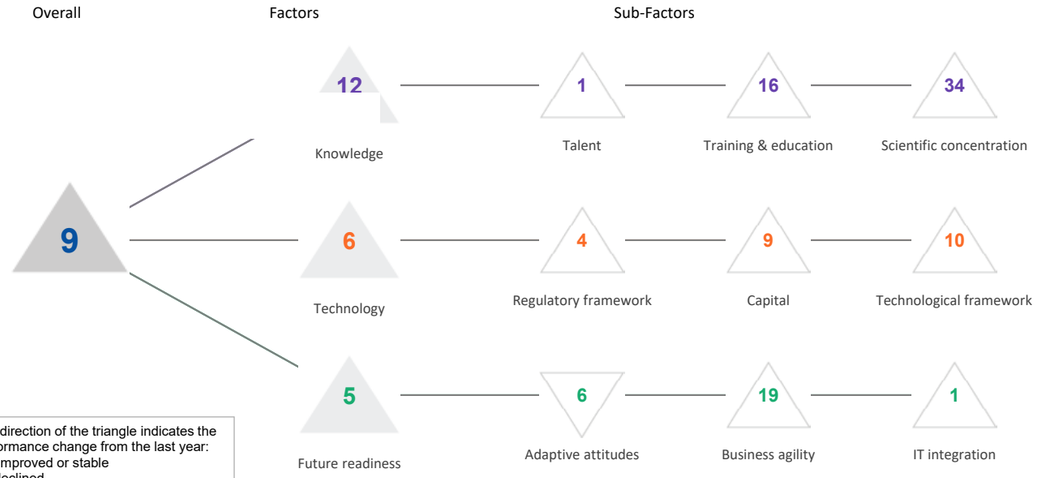
	Business agility	Rank
	Opportunities and threats	63
	World robots distribution	17
	Agility of companies	67
▷	Use of big data and analytics	68
▷	Knowledge transfer	68
▶	Entrepreneurial fear of failure	09

	IT integration	Rank
	E-Government	25
	Public-private partnerships	53
	Cyber security	62
	Software piracy	49
	Government cyber security capacity	40
	Privacy protection by law exists	42

UAE

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

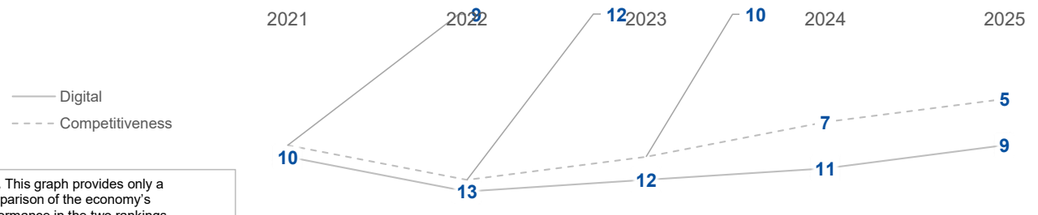


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	10	13	12	11	09
Knowledge	18	15	17	14	12
Technology	05	03	04	09	06
Future readiness	12	20	23	12	05

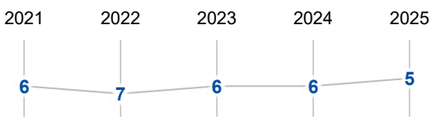
COMPETITIVENESS & DIGITAL RANKINGS



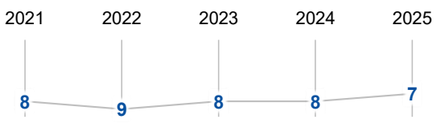
N.B. This graph provides only a comparison of the economy's performance in the two rankings.

PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)



POPULATIONS < 20 MILLION (37 economies)



UAE

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	01	01	01	02	01
Training & education	25	22	25	29	16
Scientific concentration	52	46	51	41	34

Talent	Rank
Educational assessment PISA - Math	38
▶ International experience	01
Management of cities	04
▶ Digital/Technological skills	01
Foreign highly skilled personnel	02
▶ Net flow of international students	01
Female researchers	40
Scientific and technical employment	35

Training & education	Rank
Employee training	26
▷ Total public expenditure on education	51
Higher education achievement	18
Pupil-teacher ratio (tertiary education)	42
Graduates in Sciences	03
Women with degrees	03
Computer science education index	23

Scientific concentration	Rank
Total expenditure on R&D (%)	34
Total R&D personnel per capita	39
R&D productivity by publication	43
High-tech patent grants	22
AI-related patent publications	32
Robots in Education and R&D	42
AI articles	18

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	02	03	08	14	04
Capital	11	10	17	10	09
Technological framework	05	03	03	11	10

Regulatory framework	Rank
Starting a business	08
Enforcing contracts	09
Immigration laws	02
Development & application of tech.	03
Scientific research legislation	16
Intellectual property rights	24
▷ AI policies passed into law	57

Capital	Rank
IT & media stock market capitalization	35
Funding for technological development	05
Banking and financial services	11
Country credit rating	20
Venture capital	01
▷ Investment in Telecommunications	52
AI private investment	08

Technological framework	Rank
Communications technology	09
Mobile broadband subscribers	49
▶ Wireless broadband	01
Internet users	01
Internet bandwidth speed	18
High-tech exports (%)	47
▷ Secure internet servers	51

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	15	16	14	05	06
Business agility	10	26	31	21	19
IT integration	10	24	26	13	01

Adaptive attitudes	Rank
E-Participation	32
Internet retailing	27
Tablet possession	01
Smartphone possession	14
Attitudes toward globalization	12
Flexibility and adaptability	08

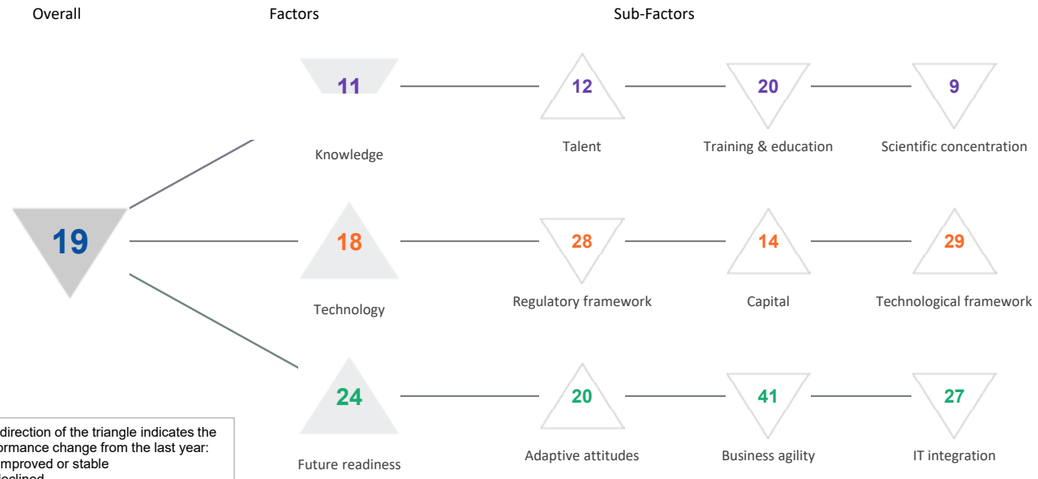
Business agility	Rank
Opportunities and threats	11
▷ World robots distribution	49
Agility of companies	10
Use of big data and analytics	27
Knowledge transfer	13
Entrepreneurial fear of failure	36

IT integration	Rank
E-Government	11
▶ Public-private partnerships	01
Cyber security	06
Software piracy	19
Government cyber security capacity	14
Privacy protection by law exists	40

UNITED KINGDOM

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

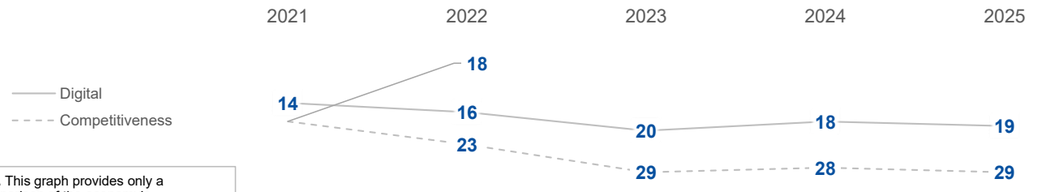


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	14	16	20	18	19
Knowledge	13	12	13	10	11
Technology	17	25	29	21	18
Future readiness	13	16	18	25	24

COMPETITIVENESS & DIGITAL RANKINGS



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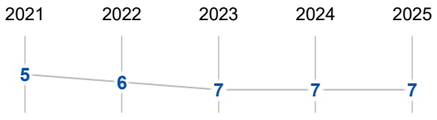
PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (45 economies)

POPULATIONS > 20 MILLION (32 economies)



UNITED KINGDOM

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	11	15	18	17	12
Training & education	26	19	27	16	20
Scientific concentration	07	06	06	05	09

Talent	Rank
Educational assessment PISA - Math	12
International experience	34
Management of cities	35
Digital/Technological skills	33
Foreign highly skilled personnel	19
▶ Net flow of international students	03
Female researchers	25
▶ Scientific and technical employment	04

Training & education	Rank
Employee training	48
Total public expenditure on education	31
Higher education achievement	11
Pupil-teacher ratio (tertiary education)	29
Graduates in Sciences	34
Women with degrees	14
▶ Computer science education index	02

Scientific concentration	Rank
Total expenditure on R&D (%)	12
Total R&D personnel per capita	26
R&D productivity by publication	12
High-tech patent grants	14
AI-related patent publications	06
Robots in Education and R&D	08
AI articles	19

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	20	24	30	17	28
Capital	18	28	31	27	14
Technological framework	19	29	32	29	29

Regulatory framework	Rank
Starting a business	09
Enforcing contracts	26
Immigration laws	44
Development & application of tech.	30
Scientific research legislation	33
Intellectual property rights	36
AI policies passed into law	05

Capital	Rank
IT & media stock market capitalization	34
Funding for technological development	17
Banking and financial services	21
Country credit rating	21
Venture capital	21
▷ Investment in Telecommunications	56
AI private investment	03

Technological framework	Rank
Communications technology	47
Mobile broadband subscribers	25
Wireless broadband	25
Internet users	16
Internet bandwidth speed	36
High-tech exports (%)	13
Secure internet servers	22

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	09	10	07	22	20
Business agility	23	28	36	31	41
IT integration	09	16	20	21	27

Adaptive attitudes	Rank
▶ E-Participation	03
▶ Internet retailing	03
Tablet possession	18
▷ Smartphone possession	50
▷ Attitudes toward globalization	53
▷ Flexibility and adaptability	55

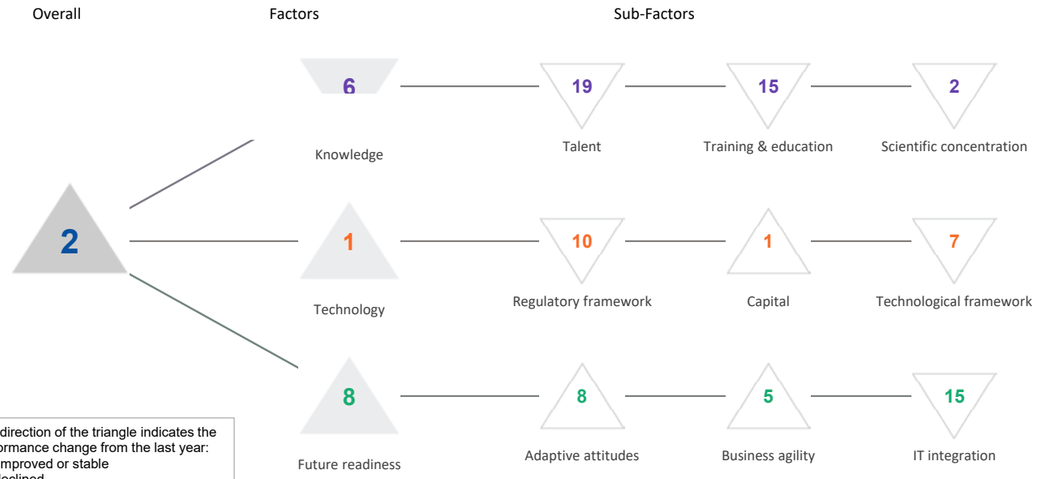
Business agility	Rank
Opportunities and threats	48
World robots distribution	15
Agility of companies	43
Use of big data and analytics	28
Knowledge transfer	20
Entrepreneurial fear of failure	46

IT integration	Rank
E-Government	07
Public-private partnerships	36
Cyber security	38
Software piracy	10
Government cyber security capacity	31
▷ Privacy protection by law exists	51

USA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

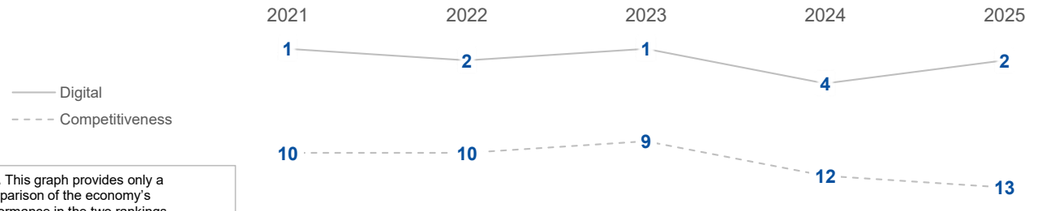


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽ declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	01	02	01	04	02
Knowledge	03	04	02	04	06
Technology	04	09	06	02	01
Future readiness	01	03	02	08	08

COMPETITIVENESS & DIGITAL RANKINGS



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PEER GROUPS RANKINGS

THE AMERICAS (10 economies)

POPULATIONS > 20 MILLION (32 economies)

USA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	13	14	12	13	19
Training & education	24	23	20	09	15
Scientific concentration	02	01	01	01	02

Talent	Rank
Educational assessment PISA - Math	33
▷ International experience	44
Management of cities	25
Digital/Technological skills	23
Foreign highly skilled personnel	13
Net flow of international students	22
Female researchers	-
Scientific and technical employment	20

Training & education	Rank
Employee training	39
Total public expenditure on education	14
Higher education achievement	23
Pupil-teacher ratio (tertiary education)	17
Graduates in Sciences	40
▶ Computer science education index	01

Scientific concentration	Rank
Total expenditure on R&D (%)	05
Total R&D personnel per capita	18
R&D productivity by publication	05
High-tech patent grants	05
▶ AI-related patent publications	02
Robots in Education and R&D	02
AI articles	36

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	12	12	12	03	10
Capital	01	02	01	02	01
Technological framework	09	13	09	05	07

Regulatory framework	Rank
Starting a business	29
Enforcing contracts	16
▷ Immigration laws	64
Development & application of tech.	20
Scientific research legislation	19
Intellectual property rights	22
▶ AI policies passed into law	01

Capital	Rank
IT & media stock market capitalization	05
Funding for technological development	06
Banking and financial services	15
Country credit rating	12
Venture capital	04
Investment in Telecommunications	35
AI private investment	01

Technological framework	Rank
Communications technology	36
Mobile broadband subscribers	28
Wireless broadband	09
Internet users	29
Internet bandwidth speed	08
High-tech exports (%)	20
Secure internet servers	04

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	01	04	02	18	08
Business agility	01	04	02	06	05
IT integration	03	10	09	12	15

Adaptive attitudes	Rank
E-Participation	10
▶ Internet retailing	01
Tablet possession	15
Smartphone possession	42
▷ Attitudes toward globalization	61
▷ Flexibility and adaptability	44

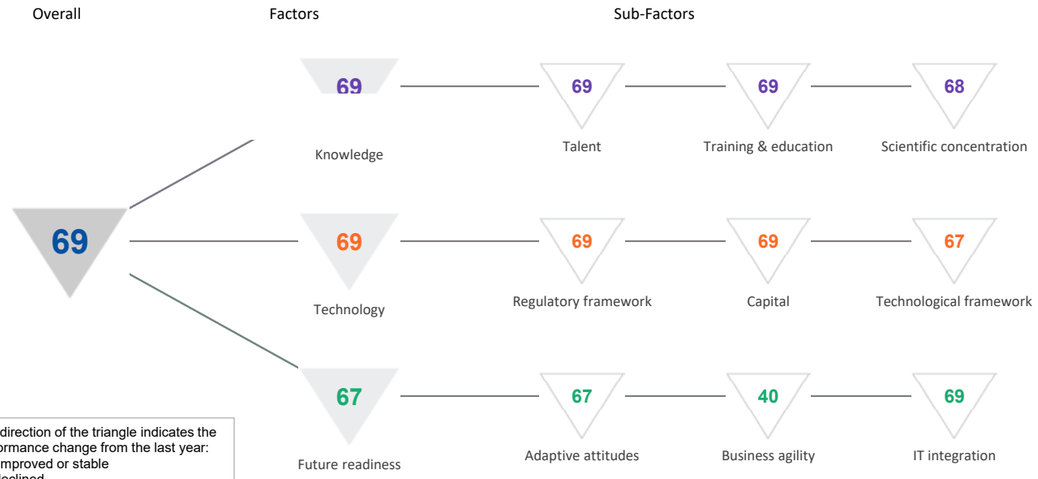
Business agility	Rank
Opportunities and threats	32
World robots distribution	04
Agility of companies	17
Use of big data and analytics	10
Knowledge transfer	09
Entrepreneurial fear of failure	17

IT integration	Rank
E-Government	19
Public-private partnerships	33
Cyber security	33
▶ Software piracy	01
Government cyber security capacity	16
▷ Privacy protection by law exists	46

VENEZUELA

DIGITAL TRENDS - OVERALL

OVERALL PERFORMANCE (69 economies)

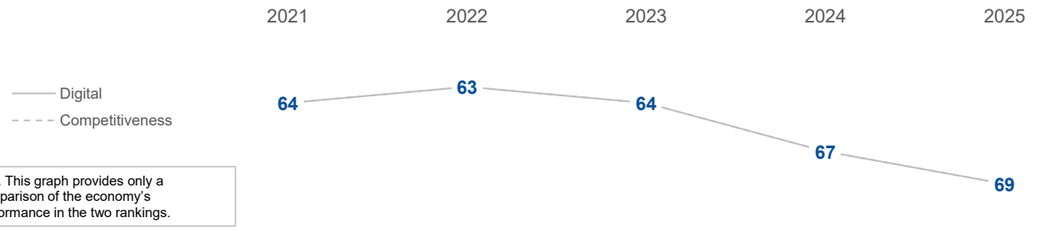


The direction of the triangle indicates the performance change from the last year:
△ improved or stable
▽declined

OVERALL & FACTORS - 5 years

	2021	2022	2023	2024	2025
OVERALL	64	63	64	67	69
Knowledge	61	63	64	67	69
Technology	64	63	64	67	69
Future readiness	64	63	64	66	67

COMPETITIVENESS & DIGITAL RANKINGS



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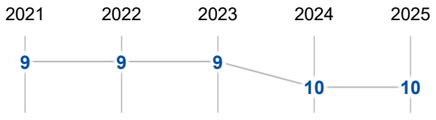
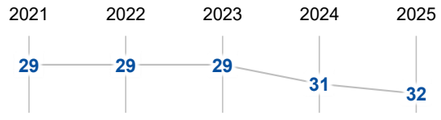
PEER GROUPS RANKINGS

THE AMERICAS (10 economies)



POPULATIONS > 20 MILLION (32 economies)



VENEZUELA

FACTORS BREAKDOWN - STRENGTHS AND WEAKNESSES

▶ Overall Top Strengths ▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2021	2022	2023	2024	2025
Talent	64	63	62	67	69
Training & education	52	60	64	67	69
Scientific concentration	49	47	45	56	68

Talent	Rank
Educational assessment PISA - Math	56
International experience	68
▷ Management of cities	69
Digital/Technological skills	69
Foreign highly skilled personnel	69
Net flow of international students	-
▶ Female researchers	07
Scientific and technical employment	-

Training & education	Rank
Employee training	62
Total public expenditure on education	67
Higher education achievement	-
Pupil-teacher ratio (tertiary education)	-
Graduates in Sciences	-
Women with degrees	-
Computer science education index	60

Scientific concentration	Rank
Total expenditure on R&D (%)	-
Total R&D personnel per capita	-
R&D productivity by publication	-
High-tech patent grants	60
AI-related patent publications	52
Robots in Education and R&D	53
AI articles	66

TECHNOLOGY

Sub-Factors	2021	2022	2023	2024	2025
Regulatory framework	64	63	64	67	69
Capital	64	63	64	67	69
Technological framework	63	63	64	66	67

Regulatory framework	Rank
Starting a business	67
Enforcing contracts	65
Immigration laws	49
Development & application of tech.	67
Scientific research legislation	69
Intellectual property rights	69
AI policies passed into law	60

Capital	Rank
IT & media stock market capitalization	-
▷ Funding for technological development	69
▷ Banking and financial services	69
Country credit rating	68
▷ Venture capital	69
Investment in Telecommunications	67
AI private investment	-

Technological framework	Rank
Communications technology	69
Mobile broadband subscribers	67
▷ Wireless broadband	69
Internet users	-
Internet bandwidth speed	61
High-tech exports (%)	-
Secure internet servers	66

FUTURE READINESS

Sub-Factors	2021	2022	2023	2024	2025
Adaptive attitudes	64	63	64	65	67
Business agility	52	55	44	35	40
IT integration	64	63	64	67	69

Adaptive attitudes	Rank
E-Participation	66
Internet retailing	-
Tablet possession	44
Smartphone possession	63
Attitudes toward globalization	43
▶ Flexibility and adaptability	15

Business agility	Rank
▶ Opportunities and threats	15
World robots distribution	56
Agility of companies	50
Use of big data and analytics	44
Knowledge transfer	62
▶ Entrepreneurial fear of failure	05

IT integration	Rank
E-Government	65
Public-private partnerships	60
Cyber security	68
Software piracy	66
Government cyber security capacity	47
Privacy protection by law exists	67

Appendices

Notes and Sources by Criteria

The source of the survey criteria is:
IMD World Competitiveness Center's Executive Opinion Survey 2025 which was conducted from March-May 2025, with a total number of 6,162 responses used in the construction of the ranking.

Standard notes used in the data tables

When statistical data is not available or is too out-dated to be relevant for a particular economy, the name appears at the bottom of the statistical table and a dash is shown. When the data is older than the reference year, the year of the data is shown next to the criterion value.

Exchange rate	As most data are expressed in U.S. dollars, you will find the exchange rates used at the beginning of the Statistical Tables. The sources for the Exchange Rates are International Financial Statistics Online (IMF) and national sources.
Per capita	For all information presented "per capita" the sources for the population are Passport GMID (Euromonitor) and national sources.
% of GDP	For all information presented as a "percentage of GDP" the sources for GDP are the OECD Main Economic Indicators and national sources.
[B]	The criteria is a background criteria. They are not taken into consideration when constructing the rankings and provided for information only.

Background

0.0.1 [B] Exchange rate
IMF International Financial Statistics
IMF World Ecopnomic Outlook April 2025

Period average.

0.0.2 [B] Population - market size
IMF World Economic Outlook April 2025
National sources

Mid-year estimates. Brazil, Bulgaria, Saudi Arabia: break in series in 2023. Croatia: new census in 2011 with a new methodology. India: break in series in 2011. Iceland, Romania as of January 1. Jordan: series have been revised according to the the new Population and Housing Census published in 2016. End of year population for 2019 and 2020. Lithuania: break in series 2011 -census revised population figure downwards by 10% (emigration to EU over past decade). Philippines: Projected population (medium assumption) excluding for 2015, which is based on the 2015 Census. Portugal: methodological change in 2011. Russia: including Crimea as of 2015. UAE: re-estimation of the national population was made by the National Bureau of Statistics in 2010 (consequent increase as of 2008).

0.0.3 [B] GDP per capita
OECD Annual GDP and components
National sources

Provisional data or estimates for most recent year. Malaysia: Data for 2023 is sum of 4 quarters. Taiwan (Chinese Taipei): Data 2021 and 2022 are revised according to the annual revisions released by DGBAS in November 2023, 2023 is the latest preliminary estimate in February 2024.

Knowledge

Talent

1.1.1 Educational assessment PISA - Math

PISA (OECD)
http://www.oecd.org/pisa/

The OECD's Programme for International Student Assessment (PISA) is a regular survey of 15-year olds which assesses aspects of their preparedness for adult life. PISA selects a sample of students that represents the full population of 15-year-old students in each participating country or education system, in both public and private schools. Mathematical literacy: an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgments and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen. Scientific literacy: an individual's scientific knowledge and use of that knowledge to identify questions, to acquire new knowledge, to explain scientific phenomena, and to draw evidence based conclusions about science-related issues, understanding of the characteristic features of science as a form of human knowledge and enquiry, awareness of how science and technology shape our material, intellectual, and cultural environments, and willingness to engage in science-related issues, and with the ideas of science, as a reflective citizen. Hong Kong SAR, Netherlands, Portugal and United States: Data did not meet the PISA technical standards but were accepted as largely comparable. China: limited regions (B-S-J-Z); the municipalities of Beijing and Shanghai and the provinces of Jiangsu and Zhejiang participated.

1.1.6 Net flow of international students

UNESCO
National sources

Net flow of internationally mobile students (inbound from abroad studying in a given country minus outbound from a given country), both sexes, in tertiary education. Data can refer to the school or financial year prior or after the reference year.

1.1.7 Female researchers

UNESCO
OECD Main Science and Technology Indicators, OECD Science, Technology and R&D Statistics (database)

Female researchers (headcount) who are mainly or partially employed in R&D. This includes staff employed both full-time and part-time. Expressed as a percentage of the total workforce (male + female)

1.1.8 Scientific and technical employment

Eurostat
OECD ""Labour Force Statistics: Employment by activities and status""
OECD Employment and Labour Market Statistics
ILOSTAT
National sources

Scientific and technical employment as a % of total employment. Defined as formal employment within the 'scientific and technical' sector. For more information, refer to NACE2 category M (or equivalent). Philippines: 2020 data are preliminary figures for October 2020.

Training & education

1.2.2 Total public expenditure on education

IMF Government Finance Statistics
Eurostat
UNESCO
National sources

Total general (local, regional and central) government expenditure in educational institutions (current and capital). It excludes transfers to private entities such as subsidies to households and students, but includes expenditure funded by transfers from international sources to government. It includes pre-primary, primary, secondary all levels and tertiary public institutions. Chile and Jordan: Budgetary central government. Philippines: Total disbursements to the Department of Education and State Colleges and Universities.

1.2.3 Higher education achievemen

OECD Education at a Glance
National sources

Percentage of the population aged 25-34 that has attained tertiary-type B and tertiary-type A and advance research programs. Tertiary-type A education covers more theoretical programs that give access to advanced research programs and to professions with high general skills requirements. Tertiary-type B education covers more practical or occupationally specific programs that provide participants with a qualification of immediate relevance to the labor market. Hong Kong SAR: Figures starting from 2012 exclude post-secondary diploma or certificate and exclude foreign domestic helpers. Kazakhstan: The data were reviewed taking into account the inclusion of graduates in technical and vocational education organizations (MCKO-5). New-Zealand and Slovenia: break in series. Peru: Tertiary education type A refers to University tertiary level and terciary education type B refers to Non-university tertiary level; for 25 years and more. Singapore: proportion of resident non-students aged 25-34 years with polytechnic, professional qualification or other diploma, or university qualification. Japan: Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of adults are in this group).

1.2.4 Pupil-teacher ratio (tertiary education)

UNESCO
National sources

Average number of pupils per teacher at a given level of education, based on headcounts of both pupils and teachers. Tertiary education (ISCED levels 5 to 8). Tertiary education builds on secondary education, providing learning activities in specialised fields of education. It aims at learning at a high level of complexity and specialisation. Tertiary education includes what is commonly understood as academic education but also includes advanced vocational or professional education. Czech Republic, France, Ireland and Poland: based on full-time equivalents. Philippines: Academic Year 2017-2018 data. Data includes students and faculty from both public and private tertiary educational institutions.

1.2.5 Graduates in Sciences
OECD Education at a Glance
UNESCO

Share of graduates in Natural Sciences; Mathematics and Statistics; Information and Communication technologies; Engineering, manufacturing and construction. In tertiary education (ISCED2011 levels 5 to 8), both sexes (%). Japan: Data on information and communication technologies are included in other fields. Jordan: 2020 data used in 2019. Philippines: includes Medical and Allied Disciplines Graduates.

1.2.6 Women with degrees
OECD Education at a Glance
National sources

Educational attainment in tertiary education of 25-64 year-old females expressed as a percentage of the female population 25-64. In most countries data refer to ISCED 2011 (codes 5/6/7/8). Japan: includes data from another category. Kazakhstan: Share of women with tertiary level degree (age 25-44).

1.2.7 Computer science education index
World University Ranking, Times Higher Education

IMD WCC developed index calculated from the Times Higher Education ranking of the top 1'000 university computer science courses, measuring the quantity and quality of the universities in each economy. 33% weighting is the number of universities in THES ranking for each country, 33% weighting is the total score, 33% weighting is the total score per capita.

Scientific concentration

1.3.1 Total expenditure on R&D (%)
OECD Main Science and Technology Indicators
UNESCO
National sources

National estimates, projections or provisional data for the most recent year. Chile, Denmark, France, Japan, Korea, Netherlands, Portugal, Slovenia, Spain and Sweden: break in series. Hungary (up to 2003), Israel: defense excluded(all or mostly). Indonesia: Estimate based on target GERD by the Ministry of Science and Technology. Sweden: underestimated or based on underestimated data. USA: excludes most or all capital expenditure.

1.3.2 Total R&D personnel per capita
OECD Main Science and Technology Indicators
UNESCO
National sources

National estimates, projections or provisional data for most recent year. Czech Republic, Colombia, Denmark, Finland, Korea, Mexico, Netherlands, Hungary, Japan, Portugal, Slovenia, Sweden and Taiwan (Chinese Taipei): break in series. Mongolia: Total number of employees in science sector. United Kingdom: underestimated or based on underestimated data. Jordan, Philippines: based on headcount, not FTE.

1.3.3 R&D productivity by publication
NSF Science & Engineering Indicators
Courtesy: National Science Foundation
National sources

The indicator is calculated as a ratio between the number of scientific articles by author's origin and the total expenditure in R&D as % GDP, which clearly include the input costs to produce research (e.g. researchers' salaries, equipement etc.). The result gives therefore the number of scientific articles published every year for a one percent (of GDP) expenditure in R&D activities. This measure can be consider as a proxy to assess the efficiency (or productivity) in producing high-level scientific research at country level.

1.3.4 High-tech patent grants
WIPO Statistics Database
TIPO for Taiwan (Chinese Taipei)

High-Tech patent grants as a percentage of total patent grants (Direct and PCT national phase entries) by applicant's origin. Three year average to reduce volatility. Counts are based on the grant date. Country of origin refers to the country of residency of the first-named applicant in the application. Taiwan (Chinese Taipei): data compiled by TIPO using data supplied by international patent offices (USPTO, JPO, EPO, KIPO, SIPO).

1.3.5 AI-related patent publications
WIPO Statistics Database

AI-related patent publications. (Direct and PCT national phase entries) by applicant's origin. Three year average to reduce volatility. Country of origin refers to the country of residency of the first-named applicant in the application.

1.3.6 Robots in Education and R&D
World Robotics
International Federation of Robotics (IFR)

Industrial robot as defined by ISO 8373:2012: an automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes, which can be either fixed in place or mobile for use in industrial automation applications.

The primary source is data on robot installations by country, industry and application that nearly all industrial robot suppliers worldwide report to the IFR Statistical Department directly. Several national robot associations collect data on their national robot markets and provide their results as secondary data to the IFR. This data is used to validate and complete the IFR primary data.

IFR Statistical Departments estimates the operational stock assuming an average service life of 12 years with an immediate withdrawal from service afterwards.

1.3.7 AI articles
Scopus

Annual count of the number of articles in Scopus using the keyword artificial intelligence, by author's institution, per capita.

Technology

Regulatory framework

2.1.1 Starting a business
Doing Business 2020 - World Bank

The distance to frontier score aids in assessing the absolute level of regulatory performance and how it improves over time. This measure shows the distance of each economy to the "frontier," which represents the best performance observed on each of the indicators across all economies in the Doing Business sample since 2005. This allows users both to see the gap between a particular economy's performance and the best performance at any point in time and to assess the absolute change in the economy's regulatory environment over time as measured by Doing Business.
An economy's distance to frontier is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier. For example, a score of 75 in DB 2016 means an economy was 25 percentage points away from the frontier constructed from the best performances across all economies and across time. A score of 80 in DB 2017 would indicate the economy is improving. In this way the distance to frontier measure complements the annual ease of doing business ranking, which compares economies with one another at a point in time.

2.1.2 Enforcing contracts
Doing Business 2020 - World Bank

The distance to frontier score aids in assessing the absolute level of regulatory performance and how it improves over time. This measure shows the distance of each economy to the "frontier," which represents the best performance observed on each of the indicators across all economies in the Doing Business sample since 2005. This allows users both to see the gap between a particular economy's performance and the best performance at any point in time and to assess the absolute change in the economy's regulatory environment over time as measured by Doing Business.
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2.1.7 AI policies passed into law
Digital Policy Alert

Cumulative count of AI related bills passed into law.

Capital

2.2.1 IT & media stock market capitalization
Refinitiv - used to be Thomson Reuters - Thomson One banker

Datastream Telecom, Media and IT (TMT) Market Value in national currency.
Calculated as a percentage of Datastream Total Market Value in national currency.
Figures for close-of-business on the 29th March each year.

2.2.4 Country credit rating
Fitch, Moody's and S&P

IMD WCC created index of the three country credit ratings Fitch, Moody's and S&P. Each rating, including the outlook, is converted to a numerical score from 20-0 and totalled for each country.

2.2.6 Investment in Telecommunications
Passport, Source: © Euromonitor International
National sources

Investment refers to as the annual capital expenditure; this is the gross annual investment in telecom (including fixed, mobile and other services) for acquiring property and network. The term investment means the expenditure associated with acquiring the ownership of property (including intellectual and non-tangible property such as computer software) and plant. This includes expenditure on initial installations and on additions to existing installations where the usage is expected to be over an extended period of time. Note that this applies to telecom services that are available to the public, and exclude investment in telecom software or equipment for private use.

2.2.7 AI private investment
Quid via Stanford AI Index Report

Annual private investment in artificial intelligence. Includes companies that received more than $1.5 million in investment. This data is expressed in US dollars.

Technological framework

2.3.2 Mobile broadband subscribers
Fitch Solutions - used to be Business Monitor International

Total active mobile 5G subscriptions, excluding broadband connections on dedicated data SIM cards or USB dongles. Data given as a percentage of the total mobile market.

2.3.3 Wireless broadband
Passport, Source: © Euromonitor International

The penetration rates of wireless broadband is calculated by dividing the number of Wireless Broadband subscribers by the total population and multiplying by 100. Wireless-broadband subscriptions refer to the sum of satellite broadband, terrestrial fixed wireless broadband and active mobile-broadband subscriptions to the public Internet. The indicator refers to total active wireless-broadband Internet subscriptions using satellite, terrestrial fixed wireless or terrestrial mobile connections. Broadband subscriptions are those with an advertised download speed of at least 256 kbit/s. In the case of mobile-broadband, only active subscriptions are included (those with at least one access to the Internet in the last three months or with a dedicated data plan). The service can be standalone with a data card, or an add-on service to a voice plan. The indicator does not cover fixed (wired)-broadband or Wi-Fi subscriptions. Both residential and business subscriptions should be included.

2.3.4 Internet users
World Development Indicators (World Bank)
National sources

Average of available sources

2.3.5 Internet bandwidth speed
Broadband Speed League
Ookla
SpeedTest Pro

Average connection speed in Mbps: data transfer rates for Internet access by end-users. Values presented are an average compiled from three different sources: Broadband Speed League (Jun. 2024); Ookla (Jan. 2025); and SpeedTest Pro (Feb. 2023)

2.3.6 High-tech exports (%)
World Development Indicators (World Bank)
National sources

High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery.

2.3.7 Secure internet servers
Netcraft (http://www.netcraft.com/) and World Bank population estimates.

publicly-trusted TLS/SSL certificates, Netcraft Secure Server Survey

Future readiness

Adaptive attitudes

3.1.1 E-Participation
UN E-Government Knowledge Database

The e-participation index (EPI) measures the use of online services to facilitate provision of information by governments to citizens (“e-information sharing”), interaction with stakeholders (“e-consultation”), and engagement in decision-making processes (“e-decision making”).

3.1.2 Internet retailing
Passport, Source: © Euromonitor International
National sources

Retail Value excluding sales tax. Iceland Based on data from Centre for Retail Studies Iceland. Total turnover in online retail with Icelandic cards.

3.1.3 Tablet possession
Passport, Source: © Euromonitor International

Percentage of households having at least one item. Portable, usually battery-powered, and very thin personal computer contained with a touchscreen panel.

3.1.4 Smartphone possession
Passport, Source: © Euromonitor International
National sources

Percentage of households having at least one item. A smartphone is a cellular telephone with an integrated computer and other features not originally associated with telephones, such as an operating system, Web browsing, music and movie player, camera and camcorder, GPS navigation, voice dictation for messaging, the ability to run software applications, etc.

Business agility

3.2.2 World robots distribution

World Robotics
International Federation of Robotics (IFR)

Industrial robot as defined by ISO 8373:2012: an automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes, which can be either fixed in place or mobile for use in industrial automation applications.

The primary source is data on robot installations by country, industry and application that nearly all industrial robot suppliers worldwide report to the IFR Statistical Department directly. Several national robot associations collect data on their national robot markets and provide their results as secondary data to the IFR. This data is used to validate and complete the IFR primary data.

IFR Statistical Departments estimates the operational stock assuming an average service life of 12 years with an immediate withdrawal from service afterwards.

3.2.6 Entrepreneurial fear of failure

Global Entrepreneurship Monitor

Percentage of 18-64 population perceiving good opportunities to start a business who indicate that fear of failure would prevent them from setting up a business.

IT integration

3.3.1 E-Government

UN E-Government Knowledge Database

The E-Government Development Index presents the state of E-Government Development of the United Nations Member States. Along with an assessment of the website development patterns in a country, the E-Government Development index incorporates the access characteristics, such as the infrastructure and educational levels, to reflect how a country is using information technologies to promote access and inclusion of its people. The EGDI is a composite measure of three important dimensions of e-government, namely: provision of online services, telecommunication connectivity and human capacity.

3.3.4 Software piracy

BSA Global Software Survey

The BSA Global Software Survey calculates unlicensed installations of software that runs on PCs — including desktops, laptops, and ultra-portables, such as netbooks. A key component of the BSA Global Software Survey is a global survey of more than 20,000 home and enterprise PC users, conducted by IDC. In addition, a parallel survey was carried out among 2,200 IT managers in 22 countries. Please consult the original report for a more detailed explanation of the methodology.

3.3.5 Government cyber security capacity

Varieties of Democracy (V-Dem)

Digital Society Project
Does the government have sufficiently technologically skilled staff and resources to mitigate harm from cyber-security threats?
0: No. The government does not have the capacity to counter even unsophisticated cyber security threats.
1: Not really. The government has the resources to combat only unsophisticated cyber attacks.
2: Somewhat. The government has the resources to combat moderately sophisticated cyber attacks.
3: Mostly. The government has the resources to combat most sophisticated cyber attacks.
4: Yes. The government has the resources to combat sophisticated cyber attacks, even those launched by highly skilled actors.

3.3.6 Privacy protection by law exists

Digital society project

Question: Does a legal framework to protect Internet users' privacy and their data exist?
Responses: 0: No. 1: Yes

Index to Criteria

The first number indicates the Competitiveness Factor, the second number indicates the sub-factor and the third number indicates the criterion number.

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