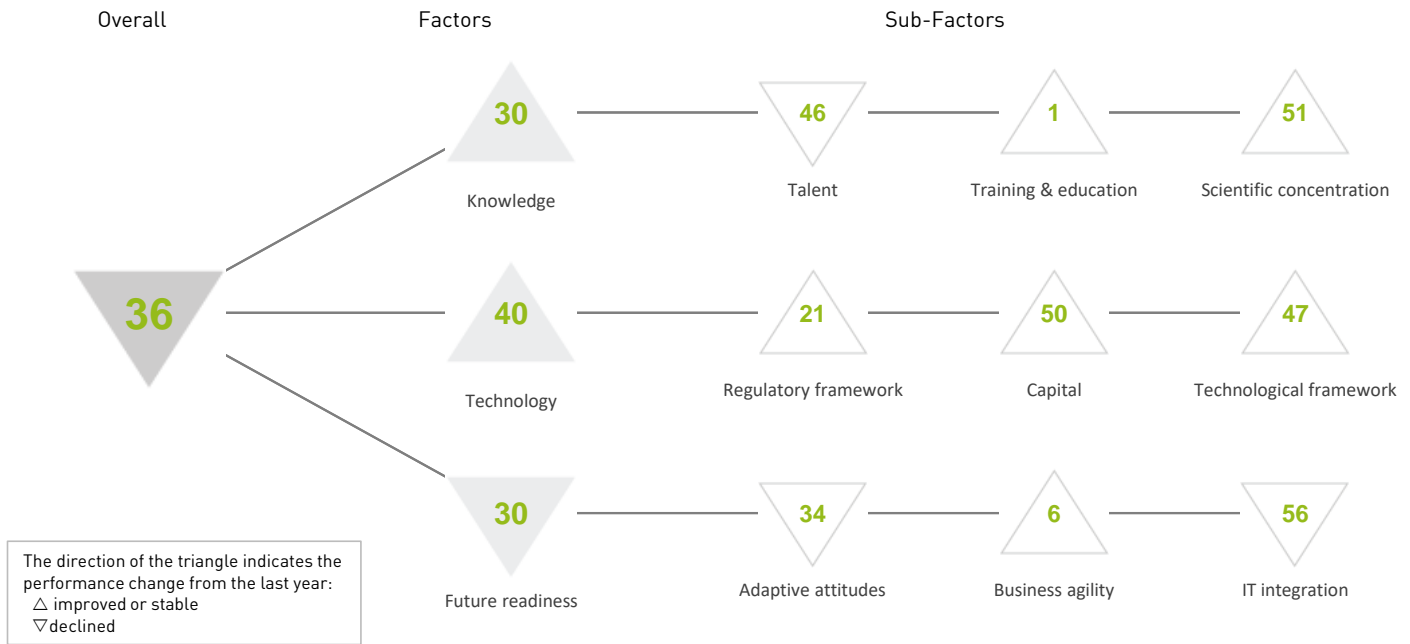


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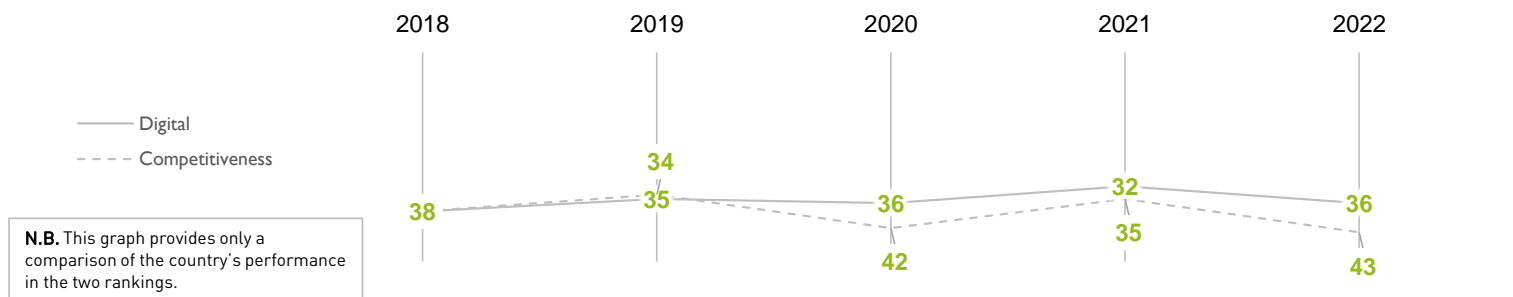
OVERALL PERFORMANCE (63 countries)



OVERALL & FACTORS - 5 years

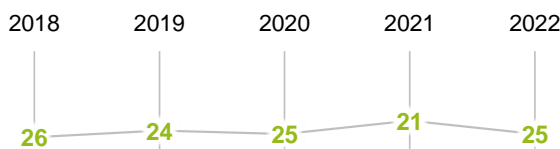
	2018	2019	2020	2021	2022
OVERALL	38	35	36	32	36
Knowledge	35	32	34	36	30
Technology	39	39	41	40	40
Future readiness	40	35	33	28	30

COMPETITIVENESS & DIGITAL RANKINGS



PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (40 countries)



POPULATIONS < 20 MILLION (36 countries)



KAZAKHSTAN

▶ Overall Top Strengths

▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2018	2019	2020	2021	2022
Talent	44	39	49	45	46
Training & education	06	01	04	14	01
Scientific concentration	55	55	54	54	51

Talent	Rank	Training & education	Rank	Scientific concentration	Rank
Educational assessment PISA - Math	45	Employee training	13	▷ Total expenditure on R&D (%)	58
International experience	32	Total public expenditure on education	33	Total R&D personnel per capita	47
Foreign highly-skilled personnel	29	▶ Higher education achievement	01	▶ Female researchers	03
Management of cities	37	Pupil-teacher ratio (tertiary education)	33	R&D productivity by publication	19
Digital/Technological skills	43	Graduates in Sciences	29	Scientific and technical employment	53
▷ Net flow of international students	58	▶ Women with degrees	02	High-tech patent grants	52
				Robots in Education and R&D	-

TECHNOLOGY

Sub-Factors	2018	2019	2020	2021	2022
Regulatory framework	22	16	23	22	21
Capital	59	54	55	51	50
Technological framework	42	43	48	47	47

Regulatory framework	Rank	Capital	Rank	Technological framework	Rank
Starting a business	11	IT & media stock market capitalization	-	Communications technology	44
▶ Enforcing contracts	04	Funding for technological development	26	Mobile Broadband subscribers	48
Immigration laws	28	Banking and financial services	39	Wireless broadband	56
Development & application of tech.	28	Country credit rating	49	Internet users	42
Scientific research legislation	38	Venture capital	36	Internet bandwidth speed	53
Intellectual property rights	42	▷ Investment in Telecommunications	61	High-tech exports (%)	07

FUTURE READINESS

Sub-Factors	2018	2019	2020	2021	2022
Adaptive attitudes	47	39	33	32	34
Business agility	43	15	13	06	06
IT integration	44	46	46	44	56

Adaptive attitudes	Rank	Business agility	Rank	IT integration	Rank
E-Participation	25	Opportunities and threats	21	E-Government	27
Internet retailing	49	World robots distribution	-	Public-private partnerships	33
Tablet possession	41	Agility of companies	35	Cyber security	41
Smartphone possession	34	Use of big data and analytics	09	▷ Software piracy	59
Attitudes toward globalization	30	Knowledge transfer	32	Government cyber security capacity	39
		▶ Entrepreneurial fear of failure	01	▷ Privacy protection by law content	58