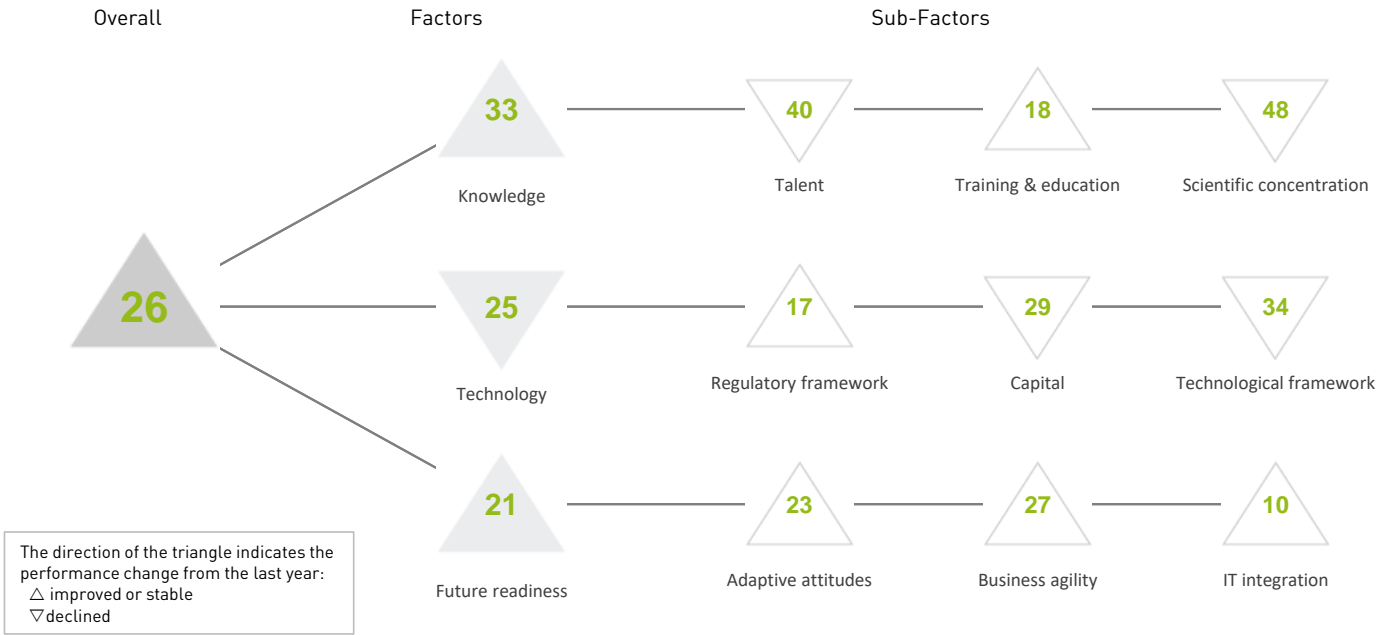


LUXEMBOURG

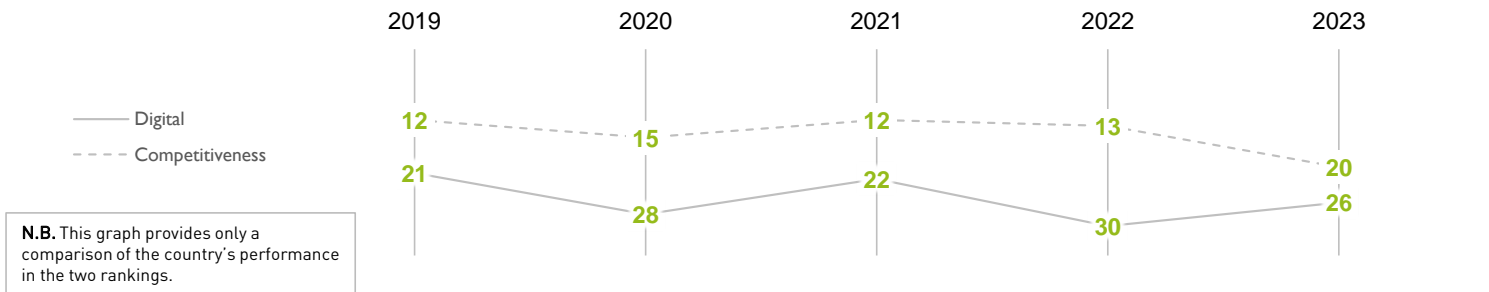
OVERALL PERFORMANCE (64 countries)



OVERALL & FACTORS - 5 years

	2019	2020	2021	2022	2023
OVERALL	21	28	22	30	26
Knowledge	34	35	29	35	33
Technology	12	17	14	19	25
Future readiness	17	27	24	35	21

COMPETITIVENESS & DIGITAL RANKINGS

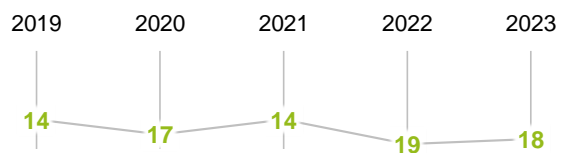


PEER GROUPS RANKINGS

EUROPE - MIDDLE EAST - AFRICA (41 countries)



POPULATIONS < 20 MILLION (37 countries)



LUXEMBOURG

▶ Overall Top Strengths

▷ Overall Top Weaknesses

KNOWLEDGE

Sub-Factors	2019	2020	2021	2022	2023
Talent	31	39	33	35	40
Training & education	24	23	20	20	18
Scientific concentration	42	41	38	42	48

Talent	Rank	Training & education	Rank	Scientific concentration	Rank
Educational assessment PISA - Math	31	Employee training	16	Total expenditure on R&D (%)	39
▶ International experience	05	Total public expenditure on education	36	Total R&D personnel per capita	12
Foreign highly skilled personnel	09	Higher education achievement	07	Female researchers	52
Management of cities	20	▶ Pupil-teacher ratio (tertiary education)	01	▷ R&D productivity by publication	59
Digital/Technological skills	34	Graduates in Sciences	50	Scientific and technical employment	23
▷ Net flow of international students	61	Women with degrees	17	High-tech patent grants	25
				Robots in Education and R&D	-

TECHNOLOGY

Sub-Factors	2019	2020	2021	2022	2023
Regulatory framework	04	08	08	18	17
Capital	09	15	08	24	29
Technological framework	34	35	25	27	34

Regulatory framework	Rank	Capital	Rank	Technological framework	Rank
Starting a business	34	IT & media stock market capitalization	08	Communications technology	22
Enforcing contracts	17	Funding for technological development	22	▷ Mobile broadband subscribers	55
Immigration laws	14	Banking and financial services	41	Wireless broadband	31
Development & application of tech.	18	▶ Country credit rating	01	Internet users	06
Scientific research legislation	12	Venture capital	37	Internet bandwidth speed	17
Intellectual property rights	14	▷ Investment in Telecommunications	61	▷ High-tech exports (%)	53

FUTURE READINESS

Sub-Factors	2019	2020	2021	2022	2023
Adaptive attitudes	22	48	38	47	23
Business agility	20	34	22	36	27
IT integration	06	16	12	17	10

Adaptive attitudes	Rank	Business agility	Rank	IT integration	Rank
E-Participation	22	Opportunities and threats	28	E-Government	24
Internet retailing	-	World robots distribution	-	Public-private partnerships	23
Tablet possession	-	Agility of companies	20	Cyber security	13
Smartphone possession	-	Use of big data and analytics	39	▶ Software piracy	04
Attitudes toward globalization	31	Knowledge transfer	22	Government cyber security capacity	37
		Entrepreneurial fear of failure	20	▶ Privacy protection by law content	04