

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
36	82	Lower middle	EUR	44.0	391.5	9,283.4	43
				Score/Value	Rank		
INSTITUTIONS				53.9	96		
1.1	Political environment		38.8	110	○		
1.1.1	Political and operational stability*.....		45.6	125	○	◇	
1.1.2	Government effectiveness*.....		35.4	95			
1.2	Regulatory environment		61.4	78			
1.2.1	Regulatory quality*.....		33.3	94			
1.2.2	Rule of law*.....		27.6	107	○		
1.2.3	Cost of redundancy dismissal, salary weeks.....		13.0	42			
1.3	Business environment		61.4	99			
1.3.1	Ease of starting a business*.....		91.1	48			
1.3.2	Ease of resolving insolvency*.....		31.7	115	○	◇	
HUMAN CAPITAL & RESEARCH				35.6	51	◇	
2.1	Education		55.1	43	◆		
2.1.1	Expenditure on education, % GDP.....		5.0	48			
2.1.2	Government funding/pupil, secondary, % GDP/cap... ..		25.7	23			
2.1.3	School life expectancy, years.....		15.0	52	◆		
2.1.4	PISA scales in reading, maths, & science.....		n/a	n/a			
2.1.5	Pupil-teacher ratio, secondary.....		7.2	3	●	◆	
2.2	Tertiary education		40.6	37	◆		
2.2.1	Tertiary enrolment, % gross.....		83.4	14	●	◆	
2.2.2	Graduates in science & engineering, %.....		24.2	33			
2.2.3	Tertiary inbound mobility, %.....		3.2	62			
2.3	Research & development (R&D)		11.2	54			
2.3.1	Researchers, FTE/mn pop.....		1,119.5	50	◆		
2.3.2	Gross expenditure on R&D, % GDP.....		0.4	67			
2.3.3	Global R&D companies, avg. exp. top 3, mn US\$.....		0.0	43	○	◇	
2.3.4	QS university ranking, average score top 3*.....		22.0	46	◆		
INFRASTRUCTURE				36.0	97		
3.1	Information & communication technologies (ICTs)		58.0	81			
3.1.1	ICT access*.....		66.5	65	◆		
3.1.2	ICT use*.....		39.9	90			
3.1.3	Government's online service*.....		56.9	92			
3.1.4	E-participation*.....		68.5	73			
3.2	General infrastructure		26.2	95			
3.2.1	Electricity output, kWh/mn pop.....		3,620.1	55	◆		
3.2.2	Logistics performance*.....		35.9	65			
3.2.3	Gross capital formation, % GDP.....		18.8	99			
3.3	Ecological sustainability		23.9	120	○		
3.3.1	GDP/unit of energy use.....		3.4	115	○	◇	
3.3.2	Environmental performance*.....		52.9	89			
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP..		0.6	80			
MARKET SOPHISTICATION				43.3	90		
4.1	Credit		30.5	91			
4.1.1	Ease of getting credit*.....		75.0	29			
4.1.2	Domestic credit to private sector, % GDP.....		38.4	86			
4.1.3	Microfinance gross loans, % GDP.....		0.0	79	○		
4.2	Investment		31.6	115	○		
4.2.1	Ease of protecting minority investors*.....		58.3	68			
4.2.2	Market capitalization, % GDP.....		22.2	58			
4.2.3	Venture capital deals/bn PPP\$ GDP.....		0.0	62	○		
4.3	Trade, competition, & market scale		67.8	42			
4.3.1	Applied tariff rate, weighted avg., %.....		1.9	51	◆		
4.3.2	Intensity of local competition*.....		64.4	83			
4.3.3	Domestic market scale, bn PPP\$.....		391.5	47			
BUSINESS SOPHISTICATION				34.8	47	◇	
5.1	Knowledge workers		45.4	45	◆		
5.1.1	Knowledge-intensive employment, %.....		36.9	33			
5.1.2	Firms offering formal training, % firms.....		22.6	69			
5.1.3	GERD performed by business, % GDP.....		0.3	50	◆		
5.1.4	GERD financed by business, %.....		30.1	59			
5.1.5	Females employed w/advanced degrees, %.....		29.9	2	●	◆	
5.2	Innovation linkages		27.4	55			
5.2.1	University/industry research collaboration*.....		41.3	64			
5.2.2	State of cluster development*.....		37.3	98			
5.2.3	GERD financed by abroad, %.....		24.4	15	●	◆	
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....		0.0	88	○		
5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....		0.2	41	◆		
5.3	Knowledge absorption		31.7	73			
5.3.1	Intellectual property payments, % total trade.....		0.7	52			
5.3.2	High-tech imports, % total trade.....		8.8	46			
5.3.3	ICT services imports, % total trade.....		0.9	79			
5.3.4	FDI net inflows, % GDP.....		3.2	52			
5.3.5	Research talent, % in business enterprise.....		25.1	49			
KNOWLEDGE & TECHNOLOGY OUTPUTS				34.6	28	◇	
6.1	Knowledge creation		42.5	17	●		
6.1.1	Patents by origin/bn PPP\$ GDP.....		6.2	17	●	◆	
6.1.2	PCT patents by origin/bn PPP\$ GDP.....		0.4	38	◆		
6.1.3	Utility models by origin/bn PPP\$ GDP.....		24.3	1	●	◆	
6.1.4	Scientific & technical articles/bn PPP\$ GDP.....		9.2	54			
6.1.5	Citable documents H-index.....		15.0	49			
6.2	Knowledge impact		40.1	47			
6.2.1	Growth rate of PPP\$ GDP/worker, %.....		3.2	22			
6.2.2	New businesses/th pop. 15-64.....		1.5	60			
6.2.3	Computer software spending, % GDP.....		0.5	19	●	◆	
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....		3.5	70			
6.2.5	High- & medium-high-tech manufactures, %.....		0.2	56			
6.3	Knowledge diffusion		21.3	47			
6.3.1	Intellectual property receipts, % total trade.....		0.2	43			
6.3.2	High-tech net exports, % total trade.....		2.0	53			
6.3.3	ICT services exports, % total trade.....		4.8	11	●	◆	
6.3.4	FDI net outflows, % GDP.....		0.1	96			
CREATIVE OUTPUTS				33.5	42	◇	
7.1	Intangible assets		55.8	17	●		
7.1.1	Trademarks by origin/bn PPP\$ GDP.....		128.6	6	●	◆	
7.1.2	Industrial designs by origin/bn PPP\$ GDP.....		13.4	8	●	◆	
7.1.3	ICTs & business model creation*.....		49.1	109	○		
7.1.4	ICTs & organizational model creation*.....		55.6	58			
7.2	Creative goods & services		8.8	91			
7.2.1	Cultural & creative services exports, % total trade.....		0.4	58			
7.2.2	National feature films/mn pop. 15-69.....		0.6	94	○		
7.2.3	Entertainment & Media market/th pop. 15-69.....		n/a	n/a			
7.2.4	Printing & other media, % manufacturing.....		1.0	62			
7.2.5	Creative goods exports, % total trade.....		0.2	82			
7.3	Online creativity		13.6	43	◆		
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....		4.5	57	◆		
7.3.2	Country-code TLDs/th pop. 15-69.....		4.7	51	◆		
7.3.3	Wikipedia edits/mn pop. 15-69.....		31.1	38	◆		
7.3.4	Mobile app creation/bn PPP\$ GDP.....		24.3	19	◆		

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question. ⊙ indicates that the economy's data are older than the base year; see Appendix II for details, including the year of the data, at <http://globalinnovationindex.org>. Square brackets [] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.