



Global Innovation Index 2021



BANGLADESH

116th Bangladesh ranks 116th among the 132 economies featured in the GII 2021.

The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

The following table shows the rankings of Bangladesh over the past three years, noting that data availability and changes to the GII model framework influence year-on-year comparisons of the GII rankings. The statistical confidence interval for the ranking of Bangladesh in the GII 2021 is between ranks 115 and 123.

Rankings for Bangladesh (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	116	121	113
2020	116	119	114
2019	116	117	108

- Bangladesh performs better in innovation outputs than innovation inputs in 2021.
- This year Bangladesh ranks 121st in innovation inputs, lower than both 2020 and 2019.
- As for innovation outputs, Bangladesh ranks 113th. This position is higher than last year but lower than 2019.

26th Bangladesh ranks 26th among the 34 lower middle-income group economies.

10th Bangladesh ranks 10th among the 10 economies in Central and Southern Asia.

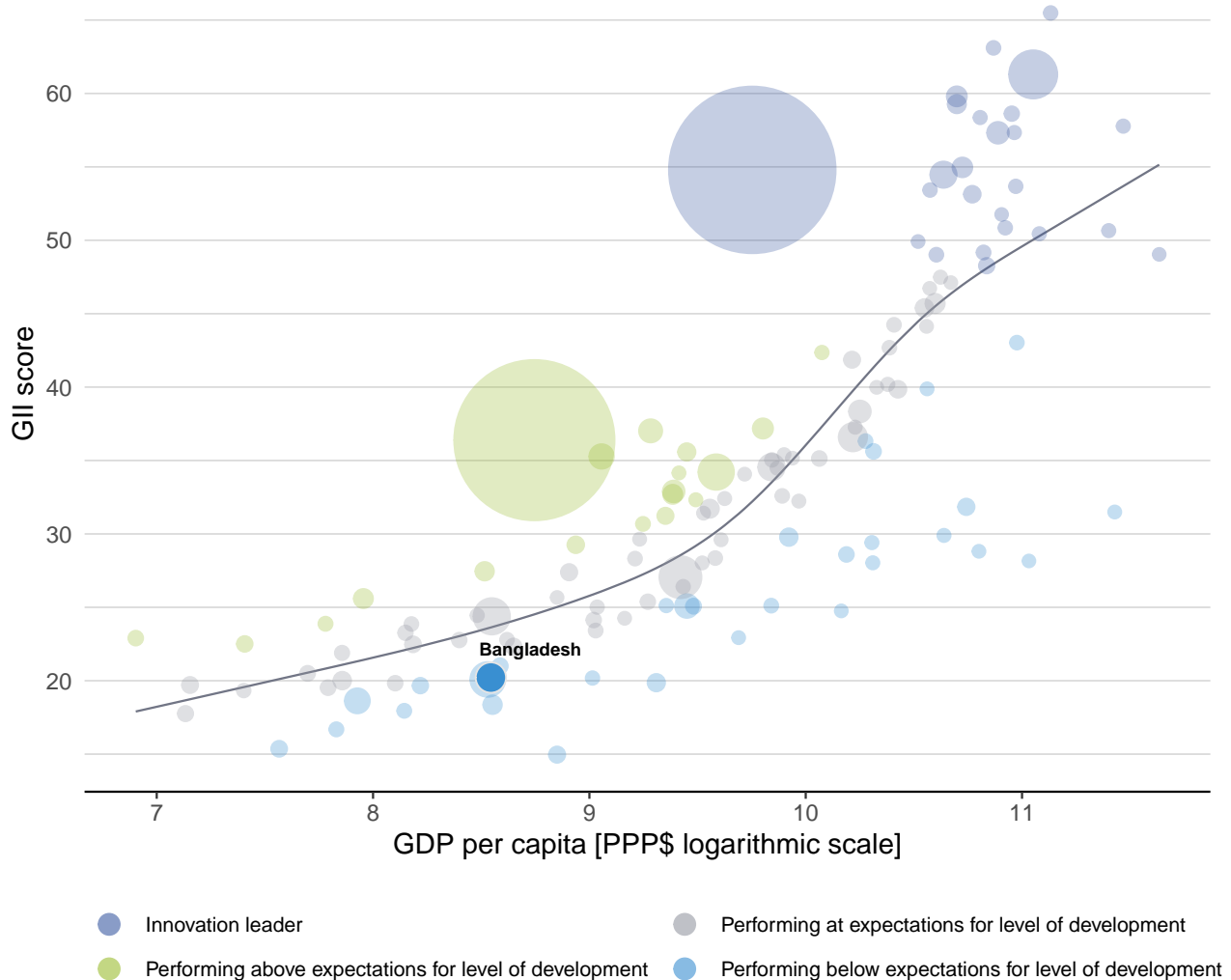


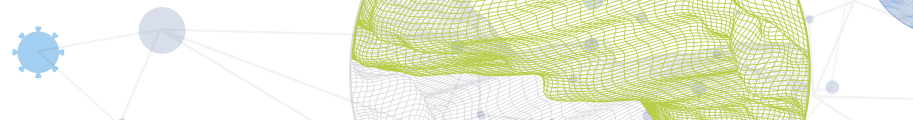
EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

Relative to GDP, Bangladesh's performance is below expectations for its level of development.

The positive relationship between innovation and development



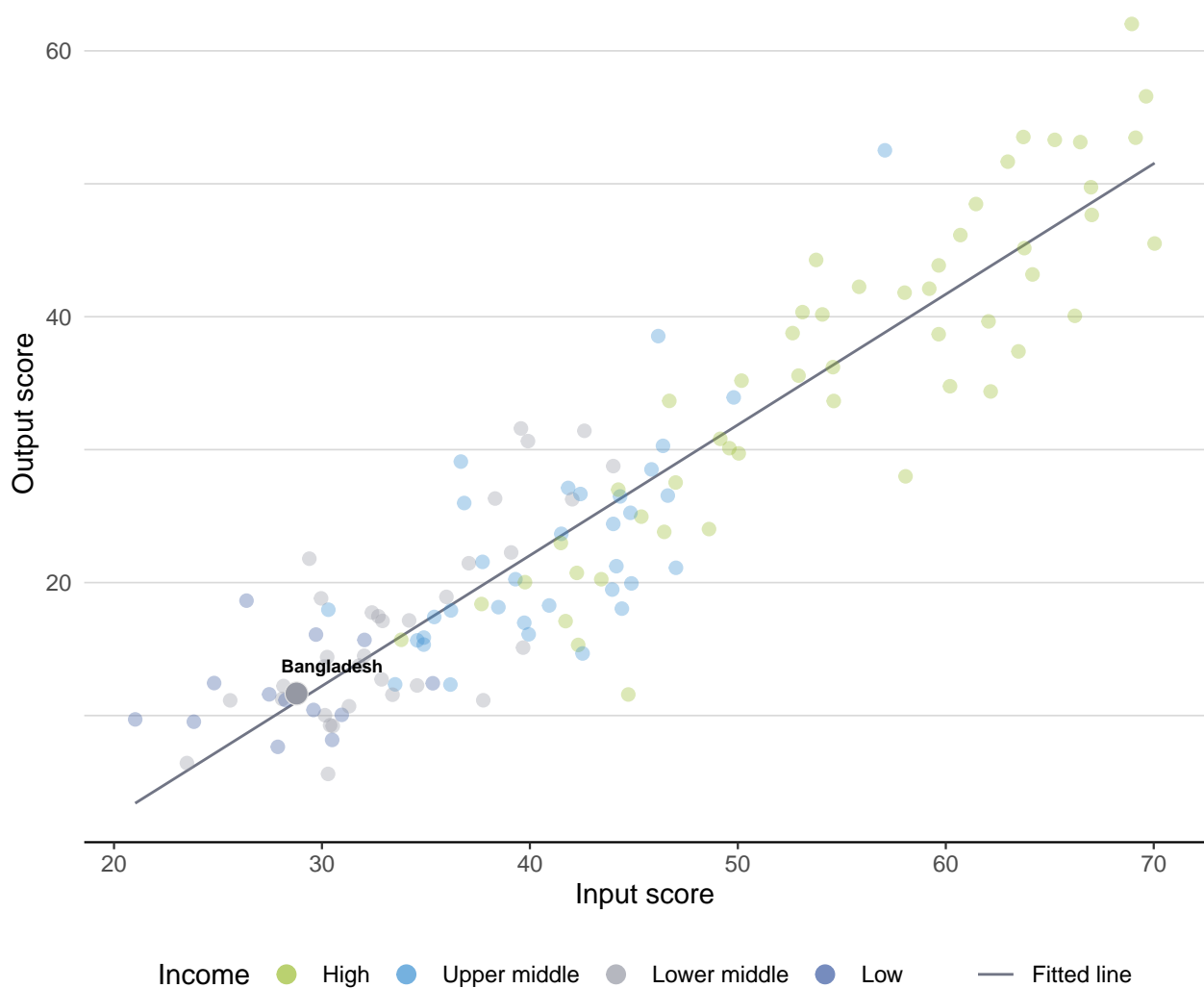


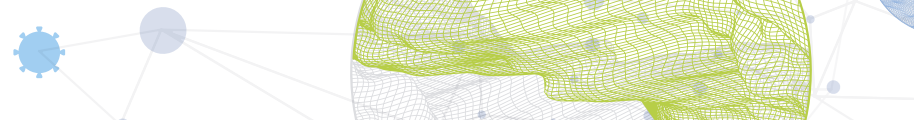
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

Bangladesh produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance





BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND CENTRAL AND SOUTHERN ASIA

The seven GII pillar scores for Bangladesh

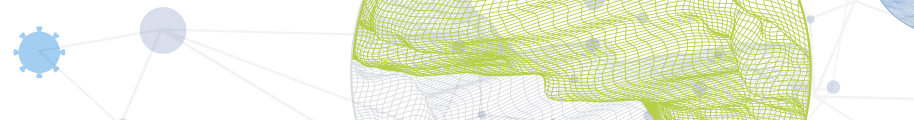


Lower middle-income group economies

Bangladesh performs above the lower middle-income group average in Infrastructure.

Central and Southern Asia

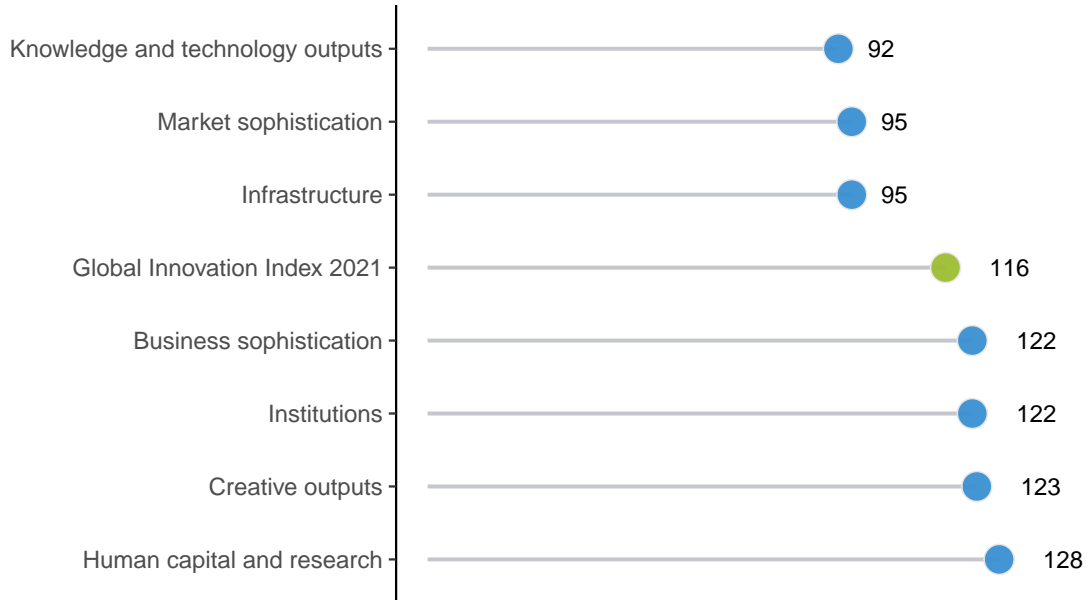
Bangladesh performs below the regional average in all GII pillars.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Bangladesh performs best in Knowledge and technology outputs and its weakest performance is in Human capital and research.

The seven GII pillar ranks for Bangladesh



Note: The highest possible ranking in each pillar is one.










INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Bangladesh in the GII 2021.

Strengths and weaknesses for Bangladesh

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.3.4	QS university ranking, top 3	67	2.1	Education	129
3.2.3	Gross capital formation, % GDP	29	2.1.1	Expenditure on education, % GDP	114
3.3.1	GDP/unit of energy use	17	2.1.5	Pupil-teacher ratio, secondary	122
4.1.3	Microfinance gross loans, % GDP	22	2.2.2	Graduates in science and engineering, %	106
4.2.1	Ease of protecting minority investors	71	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
4.3	Trade, diversification, and market scale	65	4.2.4	Venture capital recipients, deals/bn PPP\$ GDP	91
4.3.3	Domestic market scale, bn PPP\$	30	5.2.1	University-industry R&D collaboration	123
5.3.2	High-tech imports, % total trade	59	5.2.5	Patent families/bn PPP\$ GDP	100
6.1.5	Citable documents H-index	65	5.3.3	ICT services imports, % total trade	128
6.2	Knowledge impact	71	6.2.2	New businesses/th pop. 15–64	120
6.2.1	Labor productivity growth, %	2	7.2.4	Printing and other media, % manufacturing	101
7.1.3	Industrial designs by origin/bn PPP\$ GDP	51			

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GI 2020 rank
113	121	Lower middle	CSA	164.7	864.9	5,139	116

	Score/Value	Rank		Score/Value	Rank
 Institutions	45.5	122	 Business sophistication	15.4	122
1.1 Political environment	41.9	111	5.1 Knowledge workers	12.9	[119]
1.1.1 Political and operational stability*	57.1	106	5.1.1 Knowledge-intensive employment, %	8.3	113
1.1.2 Government effectiveness*	34.2	113	5.1.2 Firms offering formal training, %	21.9	70
1.2 Regulatory environment	39.5	122	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	19.2	125	5.1.4 GERD financed by business, %	n/a	n/a
1.2.2 Rule of law*	30.0	104	5.1.5 Females employed w/advanced degrees, %	1.3	112
1.2.3 Cost of redundancy dismissal	31.0	121	5.2 Innovation linkages	17.0	96
1.3 Business environment	55.3	117	5.2.1 University-industry R&D collaboration†	25.9	123
1.3.1 Ease of starting a business*	82.4	101	5.2.2 State of cluster development and depth†	42.4	91
1.3.2 Ease of resolving insolvency*	28.1	123	5.2.3 GERD financed by abroad, % GDP	n/a	n/a
			5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	86
			5.2.5 Patent families/bn PPP\$ GDP	0.0	100
 Human capital and research	10.1	128	5.3 Knowledge absorption	16.3	109
2.1 Education	15.2	129	5.3.1 Intellectual property payments, % total trade	0.1	107
2.1.1 Expenditure on education, % GDP	1.3	114	5.3.2 High-tech imports, % total trade	8.1	59
2.1.2 Government funding/pupil, secondary, % GDP/cap	8.6	94	5.3.3 ICT services imports, % total trade	0.2	128
2.1.3 School life expectancy, years	12.0	92	5.3.4 FDI net inflows, % GDP	0.7	113
2.1.4 PISA scales in reading, maths and science	n/a	n/a	5.3.5 Research talent, % in businesses	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	38.6	122	 Knowledge and technology outputs	13.7	92
2.2 Tertiary education	10.7	112	6.1 Knowledge creation	6.3	[99]
2.2.1 Tertiary enrolment, % gross	24.0	93	6.1.1 Patents by origin/bn PPP\$ GDP	0.1	115
2.2.2 Graduates in science and engineering, %	11.1	106	6.1.2 PCT patents by origin/bn PPP\$ GDP	n/a	n/a
2.2.3 Tertiary inbound mobility, %	n/a	n/a	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.3 Research and development (R&D)	4.4	[80]	6.1.4 Scientific and technical articles/bn PPP\$ GDP	4.7	112
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.5 Citable documents H-index	11.8	65
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a	6.2 Knowledge impact	27.8	71
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0	41	6.2.1 Labor productivity growth, %	6.9	2
2.3.4 QS university ranking, top 3*	8.8	67	6.2.2 New businesses/th pop. 15–64	0.0	120
			6.2.3 Software spending, % GDP	0.2	74
 Infrastructure	32.0	95	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	0.7	117
3.1 Information and communication technologies (ICTs)	46.3	97	6.2.5 High-tech manufacturing, %	9.4	91
3.1.1 ICT access*	42.1	103	6.3 Knowledge diffusion	7.0	111
3.1.2 ICT use*	24.7	108	6.3.1 Intellectual property receipts, % total trade	0.0	104
3.1.3 Government's online service*	61.2	86	6.3.2 Production and export complexity	23.5	105
3.1.4 E-participation*	57.1	91	6.3.3 High-tech exports, % total trade	0.2	105
3.2 General infrastructure	24.5	86	6.3.4 ICT services exports, % total trade	1.0	83
3.2.1 Electricity output, GWh/mn pop.	487.2	109	 Creative outputs	9.6	123
3.2.2 Logistics performance*	24.6	96	7.1 Intangible assets	15.0	119
3.2.3 Gross capital formation, % GDP	27.7	29	7.1.1 Trademarks by origin/bn PPP\$ GDP	9.3	114
3.3 Ecological sustainability	25.1	81	7.1.2 Global brand value, top 5,000, % GDP	1.0	79
3.3.1 GDP/unit of energy use	16.0	17	7.1.3 Industrial designs by origin/bn PPP\$ GDP	1.7	51
3.3.2 Environmental performance*	29.0	124	7.1.4 ICTs and organizational model creation†	42.1	108
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	109	7.2 Creative goods and services	1.6	121
			7.2.1 Cultural and creative services exports, % total trade	0.2	73
 Market sophistication	40.9	95	7.2.2 National feature films/mn pop. 15–69	0.3	102
4.1 Credit	30.0	106	7.2.3 Entertainment and media market/th pop. 15–69	n/a	n/a
4.1.1 Ease of getting credit*	45.0	101	7.2.4 Printing and other media, % manufacturing	0.2	101
4.1.2 Domestic credit to private sector, % GDP	45.3	76	7.2.5 Creative goods exports, % total trade	0.1	108
4.1.3 Microfinance gross loans, % GDP	1.4	22	7.3 Online creativity	6.9	115
4.2 Investment	23.7	96	7.3.1 Generic top-level domains (TLDs)/th pop. 15–69	0.4	113
4.2.1 Ease of protecting minority investors*	60.0	71	7.3.2 Country-code TLDs/th pop. 15–69	0.0	122
4.2.2 Market capitalization, % GDP	31.5	44	7.3.3 Wikipedia edits/mn pop. 15–69	29.4	107
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	n/a	n/a	7.3.4 Mobile app creation/bn PPP\$ GDP	0.7	76
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	0.0	91			
4.3 Trade, diversification, and market scale	69.1	65			
4.3.1 Applied tariff rate, weighted avg., %	8.6	108			
4.3.2 Domestic industry diversification	79.9	80			
4.3.3 Domestic market scale, bn PPP\$	864.9	30			

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 IV 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.



DATA AVAILABILITY

The following tables list data that are either missing or outdated for Bangladesh.

Missing data for Bangladesh

Code	Indicator name	Economy year	Model year	Source
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.2.3	Tertiary inbound mobility, %	n/a	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.2.3	Venture capital investors, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2018	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC



Outdated data for Bangladesh

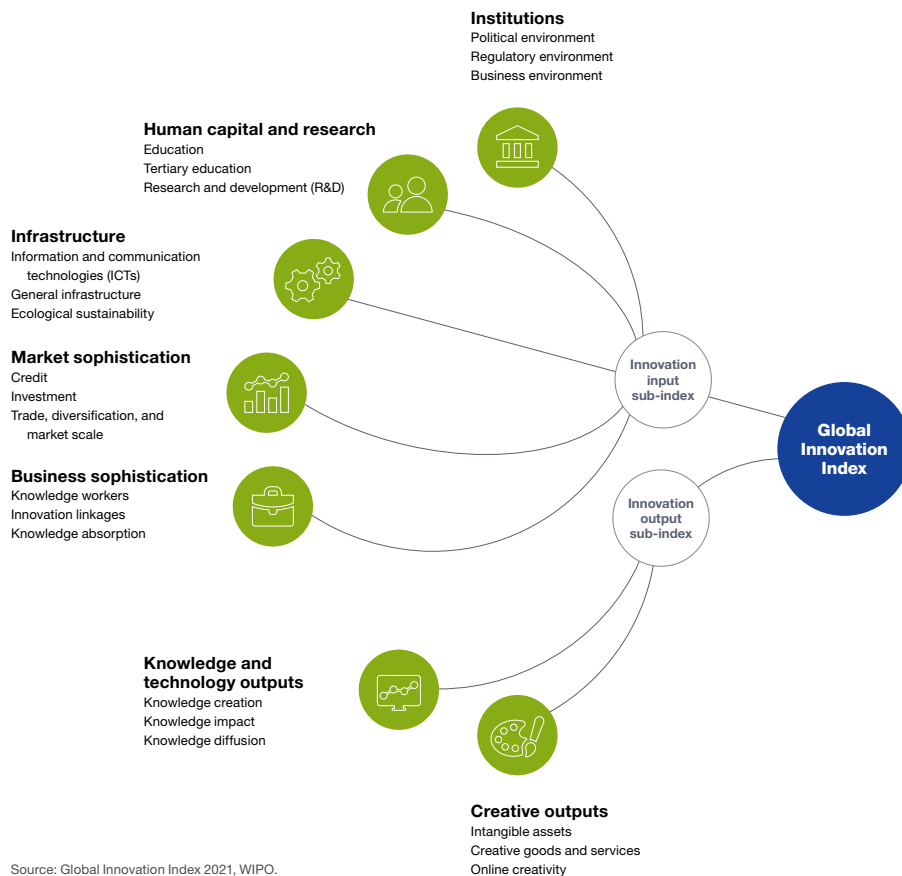
Code	Indicator name	Economy year	Model year	Source
4.2.2	Market capitalization, % GDP	2018	2019	World Federation of Exchanges
5.1.1	Knowledge-intensive employment, %	2017	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2013	2019	World Bank
5.1.5	Females employed w/advanced degrees, %	2017	2019	International Labour Organization
5.3.2	High-tech imports, % total trade	2015	2019	United Nations, COMTRADE
6.2.5	High-tech manufacturing, %	2012	2018	United Nations Industrial Development Organization
6.3.3	High-tech exports, % total trade	2015	2019	United Nations, COMTRADE
7.2.5	Creative goods exports, % total trade	2015	2019	United Nations, COMTRADE



ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.

Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a “tool for action” for economies that incorporate the GII into their innovation agendas.



The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that include institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each consisting of three sub-pillars.