

BANGLADESH

116th Bangladesh ranks 116th among the 131 economies featured in the GII 2020.

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 2020 is between ranks 113 and 120.

Rankings of Bangladesh (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	116	119	114
2019	116	117	108
2018	116	114	105

- Bangladesh performs better in innovation outputs than innovation inputs in 2020.
- This year Bangladesh ranks 119th in innovation inputs, lower than last year and lower compared to 2018.
- As for innovation outputs, Bangladesh ranks 114th. This position is lower than last year and lower compared to 2018.

24th Bangladesh ranks 24th among the 29 lower middle-income group economies.

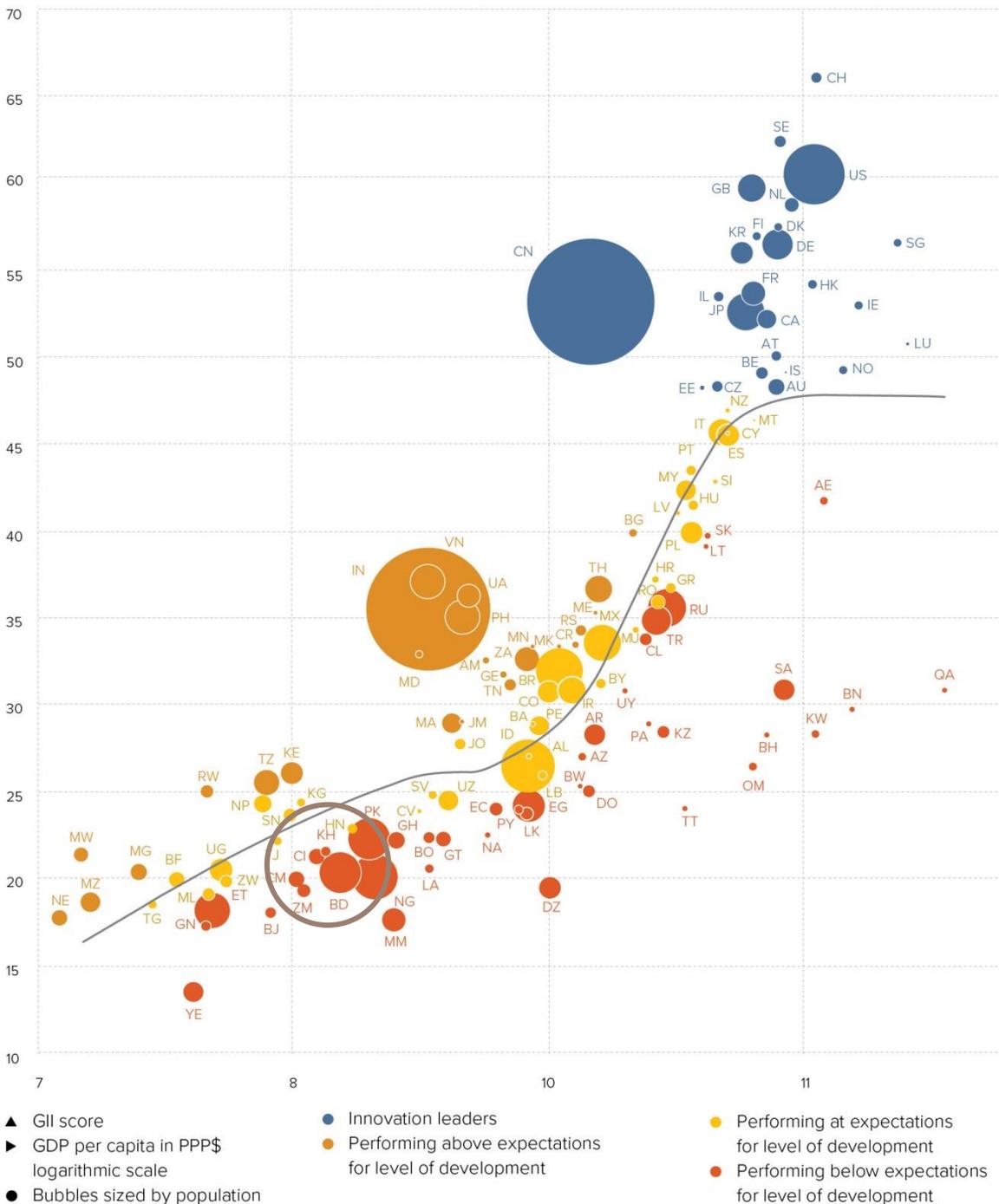
10th Bangladesh ranks 10th among the 10 economies in Central and Southern Asia.

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 is performing below expectations for its level of development.

The positive relationship between innovation and development

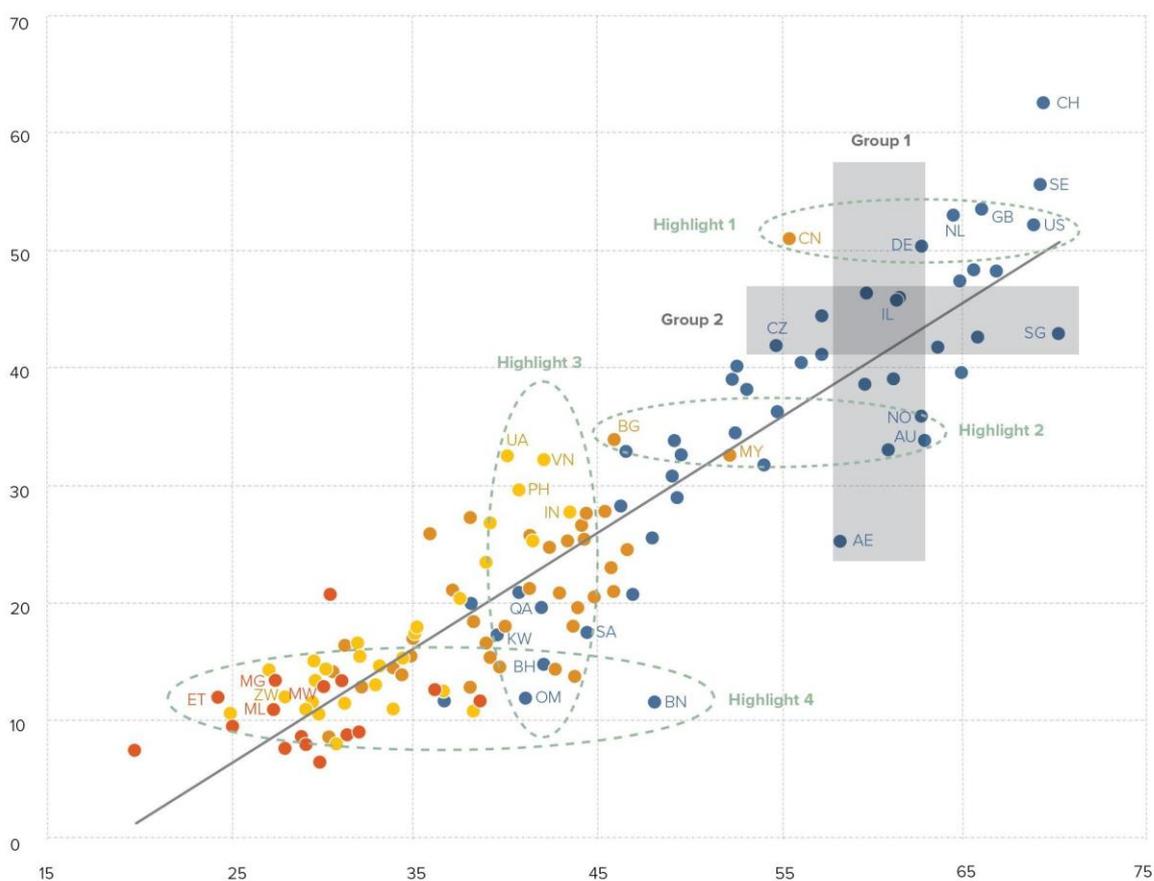


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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, 2020

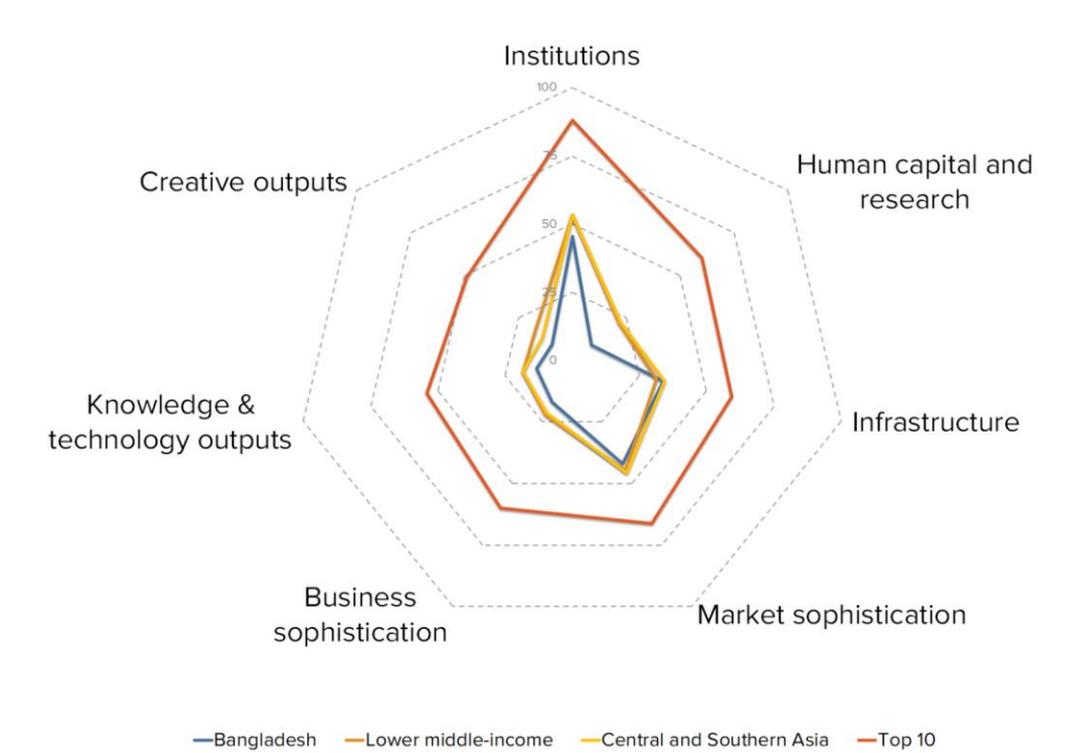


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

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

Bangladesh's scores in the seven GII pillars



Lower middle-income group economies

Bangladesh has high scores in one out of the seven GII pillars: Infrastructure, which is above average for the lower middle-income group.

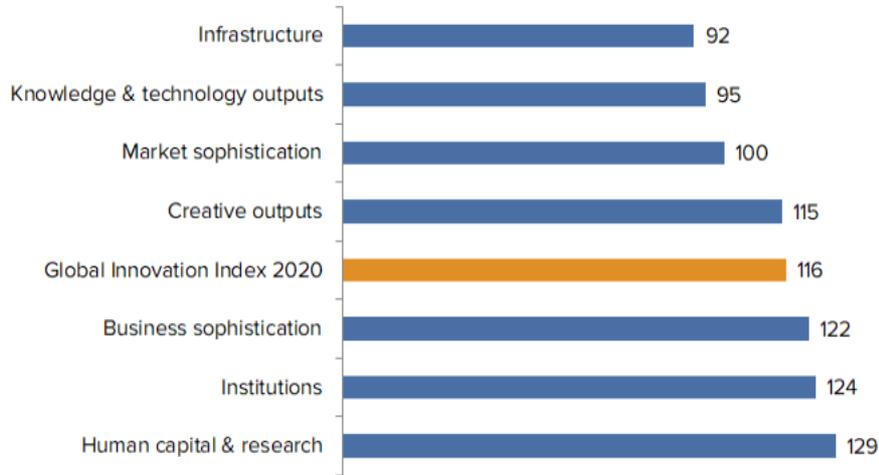
Conversely, Bangladesh scores below average for its income group in six pillars: Institutions, Human capital & research, Market sophistication, Business sophistication, Knowledge & technology outputs and Creative outputs.

Central and Southern Asia

Compared to other economies in Central and Southern Asia, Bangladesh performs below average in all seven of the GII pillars.

OVERVIEW OF BANGLADESH RANKINGS IN THE SEVEN GII AREAS

Bangladesh performs best in Infrastructure and its weakest performance is in Human capital & research.



*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Bangladesh in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
3.1.3	Government's online service*	52	2	Human capital & research	129
3.1.4	E-participation*	51	2.1	Education	129
3.2.3	Gross capital formation, % GDP	25	2.1.1	Expenditure on education, % GDP	115
3.3.1	GDP/unit of energy use	15	2.1.5	Pupil-teacher ratio, secondary	122
4.1.3	Microfinance gross loans, % GDP	23	2.2.2	Graduates in science & engineering, %	103
4.3.3	Domestic market scale, bn PPP\$	29	2.2.3	Tertiary inbound mobility, %	109
5.3.2	High-tech imports, % total trade	56	2.3.3	Global R&D companies, top 3, mn US\$	42
6.1.5	Citable documents H-index	64	3.3.2	Environmental performance*	123
6.2.1	Growth rate of PPP\$ GDP/worker, %	5	5.2.1	University/industry research collaboration*	121
7.1.3	Industrial designs by origin/bn PPP\$ GDP	47	5.3.3	ICT services imports, % total trade	125
			6.2.2	New businesses/th pop. 15–64	120
			6.3.1	Intellectual property receipts, % total trade	103
			7.2.2	National feature films/mn pop. 15–69	104
			7.2.4	Printing & other media, % manufacturing	99

STRENGTHS

GII strengths for Bangladesh are found in five of the seven GII pillars.

- Infrastructure (92): demonstrates strengths in the indicators Government's online service (52), E-participation (51), Gross capital formation (25) and GDP/unit of energy use (15).
- Market sophistication (100): shows strengths in the indicators Microfinance gross loans (23) and Domestic market scale (29).
- Business sophistication (122): the indicator High-tech imports (56) displays a strength.
- Knowledge & technology outputs (95): demonstrates strengths in the indicators Citable documents H-index (64) and Growth rate of PPP (5).
- Creative outputs (115): the indicator Industrial designs by origin (47) reveals a strength.

WEAKNESSES

GII weaknesses for Bangladesh are found in five of the seven GII pillars.

- Human capital & research (129): reveals weaknesses in the sub-pillar Education (129) and in the indicators Expenditure on education (115), Pupil–teacher ratio (122), Graduates in science & engineering (103), Tertiary inbound mobility (109) and Global R&D companies (42).
- Infrastructure (92): displays weakness in the indicator Environmental performance (123).
- Business sophistication (122): demonstrates weaknesses in the indicators University/industry research collaboration (121) and ICT services imports (125).
- Knowledge & technology outputs (95): displays weaknesses in the indicators New businesses (120) and Intellectual property receipts (103).
- Creative outputs (115): shows weaknesses in the indicators National feature films (104) and Printing & other media (99).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
114	119	Lower middle	CSA	163.0	837.6	4,389.6	116
				Score/Value	Rank		
INSTITUTIONS				45.4	124		
1.1	Political environment	41.3	116				
1.1.1	Political and operational stability*	57.1	110				
1.1.2	Government effectiveness*	33.4	117				
1.2	Regulatory environment	39.7	120				
1.2.1	Regulatory quality*	20.0	120				
1.2.2	Rule of law*	30.0	104				
1.2.3	Cost of redundancy dismissal, salary weeks	31.0	120				
1.3	Business environment	55.3	117				
1.3.1	Ease of starting a business*	82.4	101				
1.3.2	Ease of resolving insolvency*	28.1	123				
HUMAN CAPITAL & RESEARCH				9.0	129		
2.1	Education	15.4	129				
2.1.1	Expenditure on education, % GDP	2.0	115				
2.1.2	Government funding/pupil, secondary, % GDP/cap	9.9	96				
2.1.3	School life expectancy, years	12.0	94				
2.1.4	PISA scales in reading, maths, & science	n/a	n/a				
2.1.5	Pupil-teacher ratio, secondary	35.1	122				
2.2	Tertiary education	7.7	117				
2.2.1	Tertiary enrolment, % gross	20.6	93				
2.2.2	Graduates in science & engineering, %	11.2	103				
2.2.3	Tertiary inbound mobility, %	0.1	109				
2.3	Research & development (R&D)	3.8	[82]				
2.3.1	Researchers, FTE/mn pop	n/a	n/a				
2.3.2	Gross expenditure on R&D, % GDP	n/a	n/a				
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	0.0	42				
2.3.4	QS university ranking, average score top 3*	7.6	67				
INFRASTRUCTURE				33.9	92		
3.1	Information & communication technologies (ICTs)	53.5	91				
3.1.1	ICT access*	33.6	117				
3.1.2	ICT use*	21.5	113				
3.1.3	Government's online service*	78.5	52				
3.1.4	E-participation*	80.3	51				
3.2	General infrastructure	23.2	81				
3.2.1	Electricity output, kWh/mn pop	444.3	108				
3.2.2	Logistics performance*	23.8	96				
3.2.3	Gross capital formation, % GDP	31.2	25				
3.3	Ecological sustainability	25.1	81				
3.3.1	GDP/unit of energy use	14.1	15				
3.3.2	Environmental performance*	29.0	123				
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	112				
MARKET SOPHISTICATION				42.1	100		
4.1	Credit	29.9	109				
4.1.1	Ease of getting credit*	45.0	101				
4.1.2	Domestic credit to private sector, % GDP	46.9	73				
4.1.3	Microfinance gross loans, % GDP	1.4	23				
4.2	Investment	37.1	65				
4.2.1	Ease of protecting minority investors*	60.0	71				
4.2.2	Market capitalization, % GDP	31.5	45				
4.2.3	Venture capital deals/bn PPP\$ GDP	n/a	n/a				
4.3	Trade, competition, and market scale	59.3	75				
4.3.1	Applied tariff rate, weighted avg., %	10.7	118				
4.3.2	Intensity of local competition*	67.5	71				
4.3.3	Domestic market scale, bn PPP\$	837.6	29				
BUSINESS SOPHISTICATION				17.0	122		
5.1	Knowledge workers	13.0	[118]				
5.1.1	Knowledge-intensive employment, %	8.3	109				
5.1.2	Firms offering formal training, %	21.9	68				
5.1.3	GERD performed by business, % GDP	n/a	n/a				
5.1.4	GERD financed by business, %	n/a	n/a				
5.1.5	Females employed w/advanced degrees, %	1.3	108				
5.2	Innovation linkages	18.2	85				
5.2.1	University/industry research collaboration†	26.4	121				
5.2.2	State of cluster development†	43.9	81				
5.2.3	GERD financed by abroad, % GDP	n/a	n/a				
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.0	68				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.0	98				
5.3	Knowledge absorption	19.7	102				
5.3.1	Intellectual property payments, % total trade	0.1	106				
5.3.2	High-tech imports, % total trade	8.1	56				
5.3.3	ICT services imports, % total trade	0.1	125				
5.3.4	FDI net inflows, % GDP	1.0	111				
5.3.5	Research talent, % in business enterprise	n/a	n/a				
KNOWLEDGE & TECHNOLOGY OUTPUTS				13.2	95		
6.1	Knowledge creation	6.0	[97]				
6.1.1	Patents by origin/bn PPP\$ GDP	0.1	114				
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	n/a				
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	n/a				
6.1.4	Scientific & technical articles/bn PPP\$ GDP	2.6	109				
6.1.5	Citable documents H-index	11.7	64				
6.2	Knowledge impact	21.6	76				
6.2.1	Growth rate of PPP\$ GDP/worker, %	5.7	5				
6.2.2	New businesses/th pop. 15-64	0.0	120				
6.2.3	Computer software spending, % GDP	0.0	72				
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	0.7	116				
6.2.5	High- and medium-high-tech manufacturing, %	9.4	85				
6.3	Knowledge diffusion	12.0	108				
6.3.1	Intellectual property receipts, % total trade	0.0	103				
6.3.2	High-tech net exports, % total trade	0.2	95				
6.3.3	ICT services exports, % total trade	1.1	80				
6.3.4	FDI net outflows, % GDP	0.0	114				
CREATIVE OUTPUTS				9.4	115		
7.1	Intangible assets	15.2	110				
7.1.1	Trademarks by origin/bn PPP\$ GDP	10.4	110				
7.1.2	Global brand value, top 5,000, % GDP	2.5	76				
7.1.3	Industrial designs by origin/bn PPP\$ GDP	2.5	47				
7.1.4	ICTs & organizational model creation†	42.1	108				
7.2	Creative goods and services	1.2	124				
7.2.1	Cultural & creative services exports, % total trade	0.1	80				
7.2.2	National feature films/mn pop. 15-69	0.3	104				
7.2.3	Entertainment & Media market/th pop. 15-69	n/a	n/a				
7.2.4	Printing and other media, % manufacturing	0.2	99				
7.2.5	Creative goods exports, % total trade	0.1	108				
7.3	Online creativity	5.9	104				
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	0.4	113				
7.3.2	Country-code TLDs/th pop. 15-69	0.1	122				
7.3.3	Wikipedia edits/mn pop. 15-69	26.8	99				
7.3.4	Mobile app creation/bn PPP\$ GDP	0.4	73				

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.

DATA AVAILABILITY

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

Missing data

Code	Indicator name	Country year	Model year	Source
2.1.4	PISA scales in reading, maths & science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.3.1	Researchers, FTE/mn pop.	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.2.3	Venture capital deals/bn PPP\$ GDP	n/a	2019	Thomson Reuters
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2017	UNESCO Institute for Statistics
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC

Outdated data

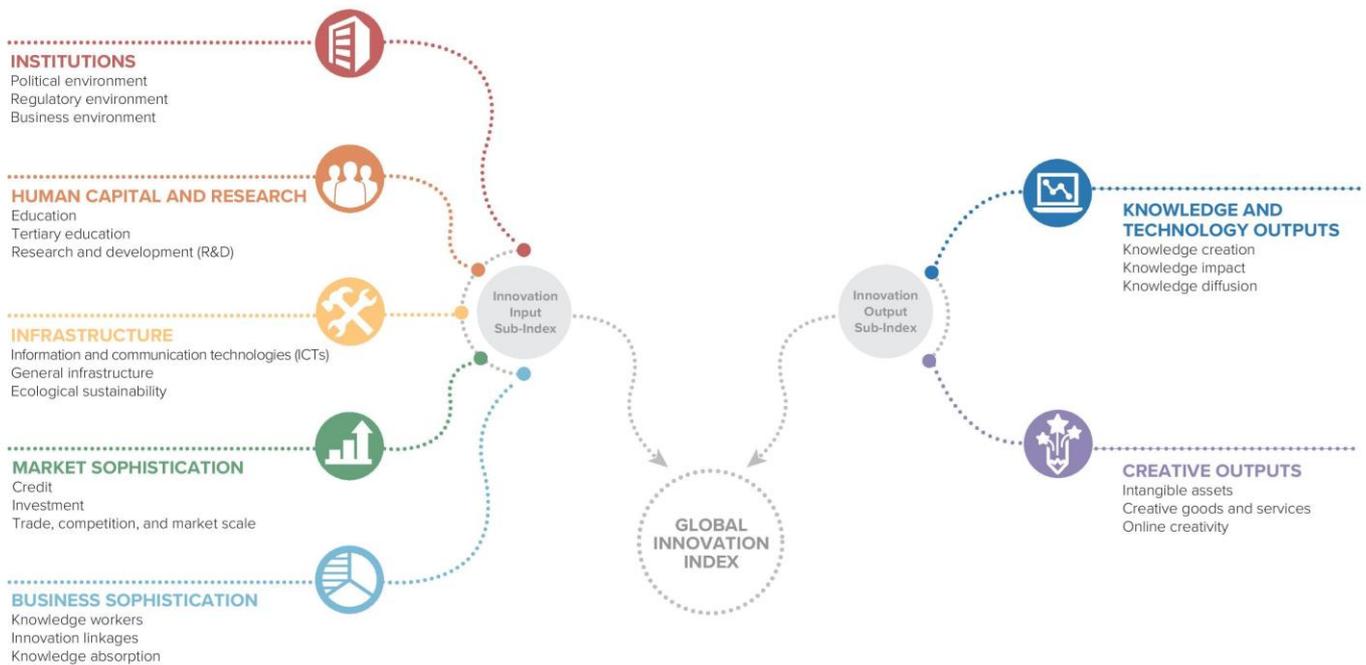
Code	Indicator name	Country year	Model year	Source
2.2.3	Tertiary inbound mobility, %	2009	2017	UNESCO Institute for Statistics
4.3.1	Applied tariff rate, weighted avg., %	2016	2018	World Bank
5.1.1	Knowledge-intensive employment, %	2017	2018	International Labour Organization
5.1.2	Firms offering formal training, %	2012	2018	World Bank
5.1.5	Females employed w/advanced degrees, %	2017	2018	International Labour Organization
5.3.2	High-tech imports, % total trade	2015	2018	United Nations, COMTRADE
6.2.5	High- & medium-high-tech manufacturing, %	2012	2017	United Nations Industrial Development Organization
6.3.2	High-tech net exports, % total trade	2015	2018	United Nations, COMTRADE
7.2.4	Printing & other media, % manufacturing	2012	2017	United Nations Industrial Development Organization
7.2.5	Creative goods exports, % total trade	2015	2018	United Nations, COMTRADE

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.

Framework of the Global Innovation Index 2020



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.

