



BANGLADESH

102nd Bangladesh ranks 102nd among the 132 economies featured in the GII 2022.

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 2022 is between ranks 93 and 110.

Rankings for Bangladesh (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	116	119	114
2021	116	121	113
2022	102	112	90

- Bangladesh performs better in innovation outputs than innovation inputs in 2022.
- This year Bangladesh ranks 112th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Bangladesh ranks 90th. This position is higher than both 2021 and 2020.

20th Bangladesh ranks 20th among the 36 lower-middle-income group economies.

8th Bangladesh ranks 8th among the 10 economies in Central and Southern Asia.

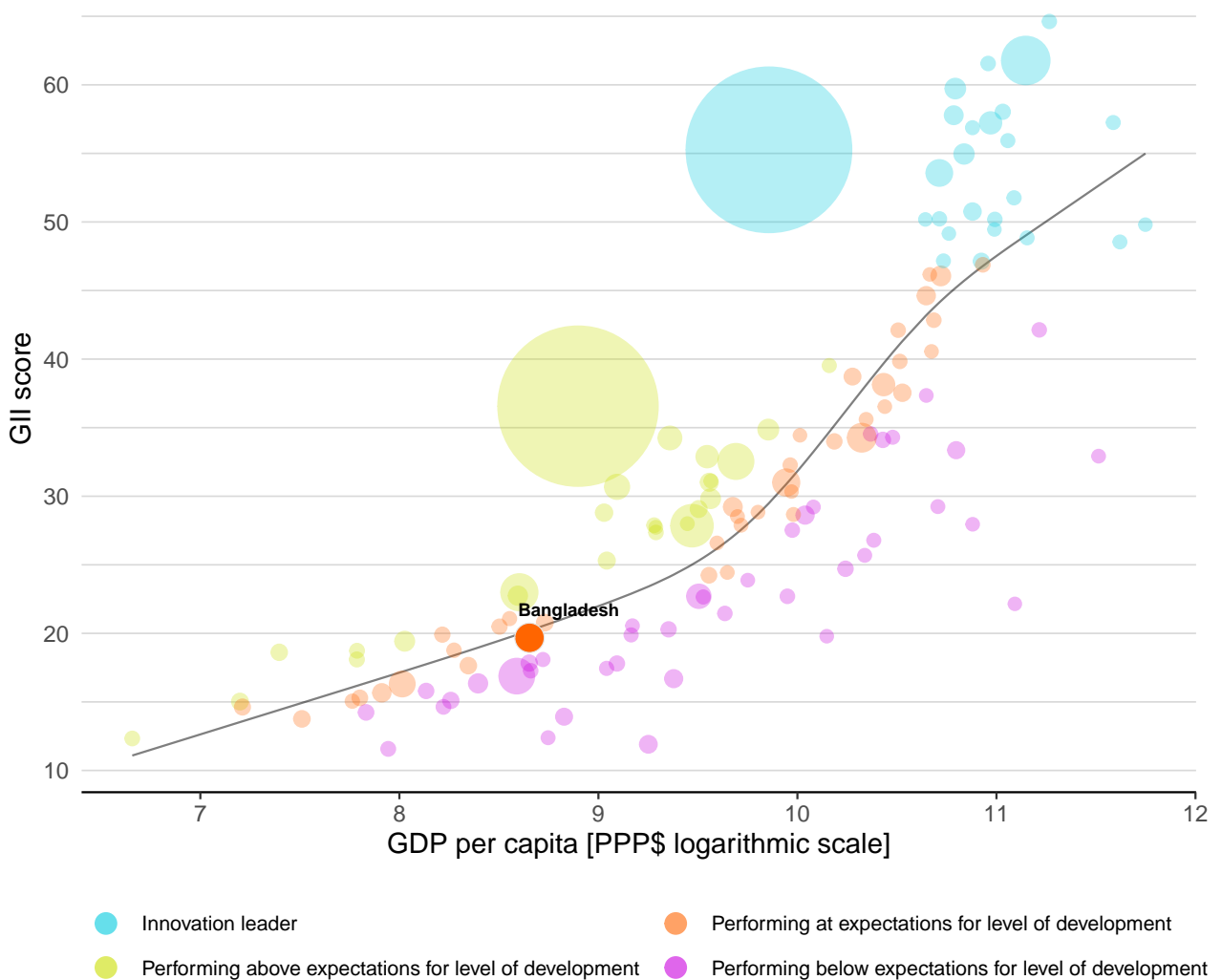


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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 at expectations for its level of development.

The positive relationship between innovation and development



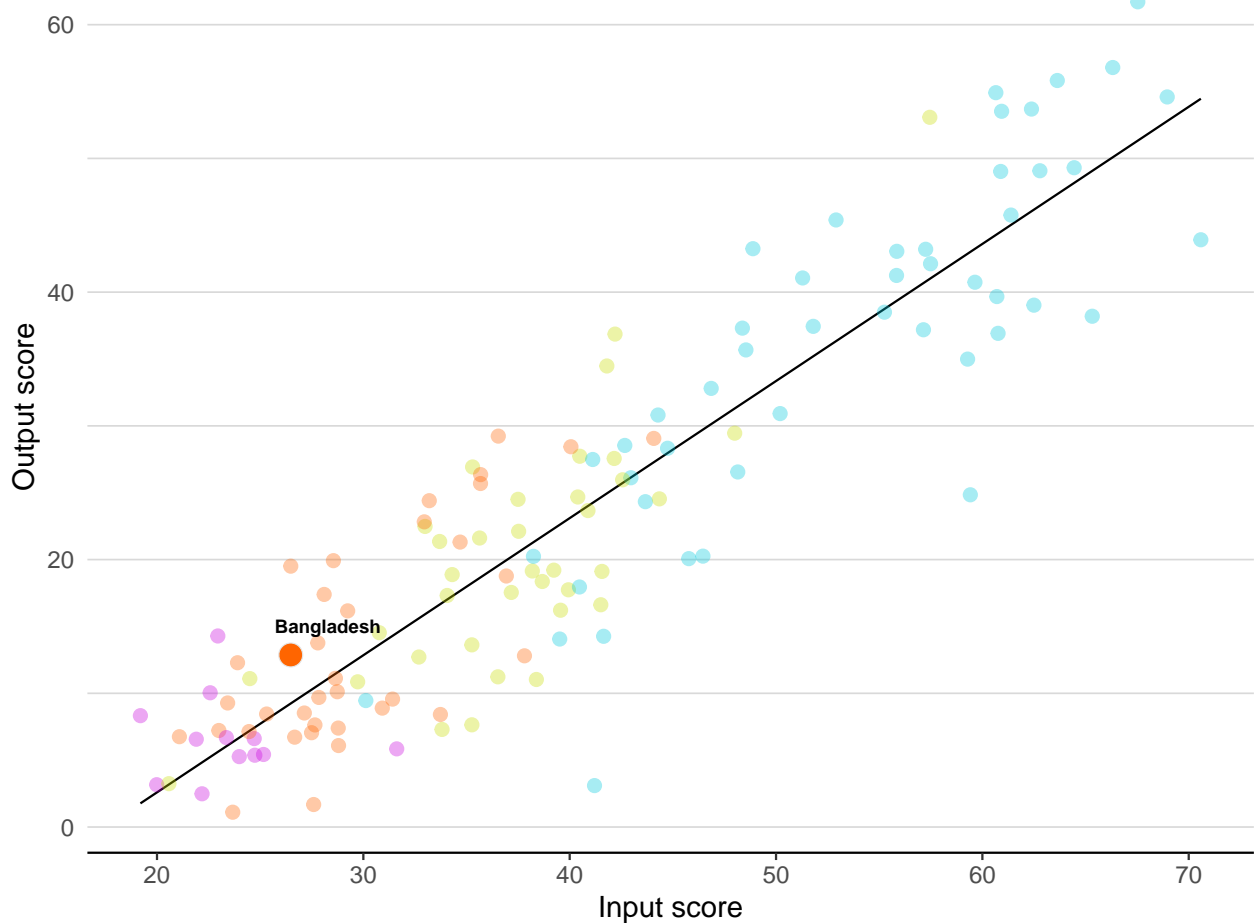


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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

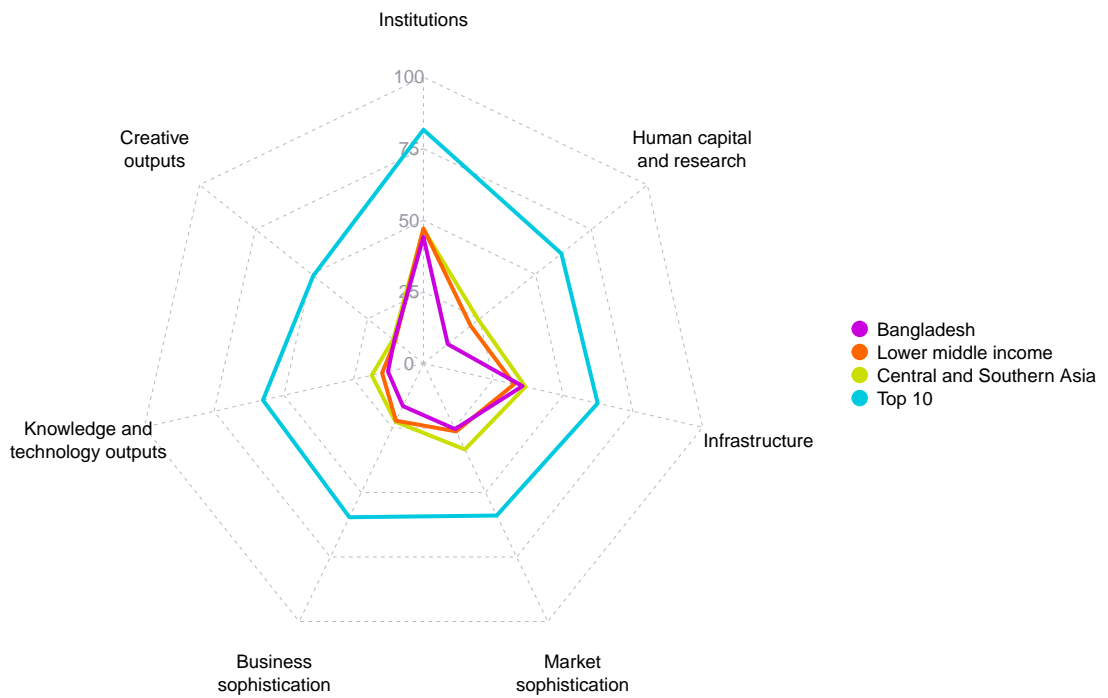


Income ● High income ● Upper middle ● Lower middle ● Low income — Fitted line



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 two pillars, namely: Infrastructure; and, Creative outputs.

Central and Southern Asia

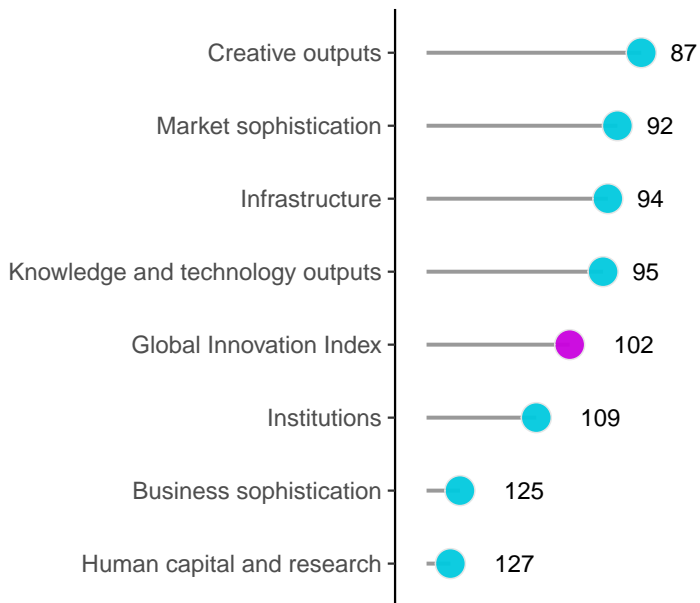
Bangladesh performs below the regional average in all GII pillars.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Bangladesh performs best in Creative 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 1.

The full WIPO Intellectual Property Statistics profile for Bangladesh can be found at:

https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=BD.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Bangladesh in the GII 2022.








Strengths and weaknesses for Bangladesh

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.3.4	QS university ranking, top 3	65	2.1.1	Expenditure on education, % GDP	127
3.2.3	Gross capital formation, % GDP	24	2.1.2	Government funding/pupil, secondary, % GDP/cap	103
3.3.1	GDP/unit of energy use	13	2.1.5	Pupil-teacher ratio, secondary	120
4.1.3	Loans from microfinance institutions, % GDP	11	2.2.2	Graduates in science and engineering, %	106
4.3.3	Domestic market scale, bn PPP\$	30	2.3.3	Global corporate R&D investors, top 3, mn USD	38
5.3.2	High-tech imports, % total trade	68	3.3.2	Environmental performance	127
6.1.5	Citable documents H-index	63	4.2.2	Venture capital investors, deals/bn PPP\$ GDP	95
6.2.1	Labor productivity growth, %	5	5.3.3	ICT services imports, % total trade	129
7.1.1	Intangible asset intensity, top 15, %	26	6.2.2	New businesses/th pop. 15–64	122
7.1.4	Industrial designs by origin/bn PPP\$ GDP	59	7.2.4	Printing and other media, % manufacturing	96

Bangladesh

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Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
90	112	Lower middle	CSA	166.3	953.4	5,733

	Score/Value	Rank		Score/Value	Rank
 Institutions	44.1	109	 Business sophistication	16.5	125
1.1 Political environment	45.5	112	5.1 Knowledge workers	11.8	[117]
1.1.1 Political and operational stability*	58.2	103	5.1.1 Knowledge-intensive employment, %	8.3	111
1.1.2 Government effectiveness*	32.7	118	5.1.2 Firms offering formal training, %	21.9	72
1.2 Regulatory environment	40.6	122	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	22.4	121	5.1.4 GERD financed by business, %	n/a	n/a
1.2.2 Rule of law*	31.2	97	5.1.5 Females employed w/advanced degrees, %	1.3	111
1.2.3 Cost of redundancy dismissal	31.0	122	5.2 Innovation linkages	19.1	99
1.3 Business environment	46.3	[69]	5.2.1 University-industry R&D collaboration†	29.4	118
1.3.1 Policies for doing business†	46.3	76	5.2.2 State of cluster development and depth†	43.1	87
1.3.2 Entrepreneurship policies and culture*	n/a	n/a	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	92
			5.2.5 Patent families/bn PPP\$ GDP	0.0	100
 Human capital and research	10.8	127	5.3 Knowledge absorption	18.7	118
2.1 Education	18.8	129	5.3.1 Intellectual property payments, % total trade	0.1	102
2.1.1 Expenditure on education, % GDP	1.3	127	5.3.2 High-tech imports, % total trade	8.1	68
2.1.2 Government funding/pupil, secondary, % GDP/cap	7.5	103	5.3.3 ICT services imports, % total trade	0.2	129
2.1.3 School life expectancy, years	12.4	89	5.3.4 FDI net inflows, % GDP	0.6	111
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	32.8	120	 Knowledge and technology outputs	12.7	95
2.2 Tertiary education	9.3	110	6.1 Knowledge creation	7.1	[90]
2.2.1 Tertiary enrolment, % gross	22.8	93	6.1.1 Patents by origin/bn PPP\$ GDP	0.0	122
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	[74]	6.1.4 Scientific and technical articles/bn PPP\$ GDP	6.6	105
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.5 Citable documents H-index	12.2	63
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a	6.2 Knowledge impact	22.9	78
2.3.3 Global corporate R&D investors, top 3, mn USD	0.0	38	6.2.1 Labor productivity growth, %	5.3	5
2.3.4 QS university ranking, top 3*	8.9	65	6.2.2 New businesses/th pop. 15-64	0.0	122
			6.2.3 Software spending, % GDP	0.2	75
			6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	0.6	117
			6.2.5 High-tech manufacturing, %	6.5	97
 Infrastructure	35.5	94	6.3 Knowledge diffusion	8.2	110
3.1 Information and communication technologies (ICTs)	58.2	95	6.3.1 Intellectual property receipts, % total trade	0.0	94
3.1.1 ICT access*	76.0	90	6.3.2 Production and export complexity	20.9	100
3.1.2 ICT use*	38.6	102	6.3.3 High-tech exports, % total trade	0.2	104
3.1.3 Government's online service*	61.2	86	6.3.4 ICT services exports, % total trade	0.9	88
3.1.4 E-participation*	57.1	90	 Creative outputs	13.0	87
3.2 General infrastructure	23.9	83	7.1 Intangible assets	24.5	68
3.2.1 Electricity output, GWh/mn pop.	518.6	109	7.1.1 Intangible asset intensity, top 15, %	68.6	26
3.2.2 Logistics performance*	24.7	92	7.1.2 Trademarks by origin/bn PPP\$ GDP	11.2	108
3.2.3 Gross capital formation, % GDP	30.4	24	7.1.3 Global brand value, top 5,000, % GDP	4.2	69
3.3 Ecological sustainability	24.3	75	7.1.4 Industrial designs by origin/bn PPP\$ GDP	1.3	59
3.3.1 GDP/unit of energy use	17.0	13	7.2 Creative goods and services	2.1	[114]
3.3.2 Environmental performance*	23.1	127	7.2.1 Cultural and creative services exports, % total trade	0.2	76
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	108	7.2.2 National feature films/mn pop. 15-69	n/a	n/a
			7.2.3 Entertainment and media market/th pop. 15-69	n/a	n/a
			7.2.4 Printing and other media, % manufacturing	0.2	96
			7.2.5 Creative goods exports, % total trade	0.1	106
 Market sophistication	25.4	92	7.3 Online creativity	0.9	103
4.1 Credit	31.4	49	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	0.4	111
4.1.1 Finance for startups and scaleups*	n/a	n/a	7.3.2 Country-code TLDs/th pop. 15-69	0.1	123
4.1.2 Domestic credit to private sector, % GDP	45.3	76	7.3.3 GitHub commit pushes received/mn pop. 15-69	1.4	92
4.1.3 Loans from microfinance institutions, % GDP	3.2	11	7.3.4 Mobile app creation/bn PPP\$ GDP	1.9	73
4.2 Investment	3.1	93			
4.2.1 Market capitalization, % GDP	25.8	52			
4.2.2 Venture capital investors, deals/bn PPP\$ GDP	0.0	95			
4.2.3 Venture capital recipients, deals/bn PPP\$ GDP	0.0	93			
4.2.4 Venture capital received, value, % GDP	0.0	77			
4.3 Trade, diversification, and market scale	41.8	97			
4.3.1 Applied tariff rate, weighted avg., %	11.0	123			
4.3.2 Domestic industry diversification	75.1	77			
4.3.3 Domestic market scale, bn PPP\$	953.4	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 appendices for details, including the year of the data, at https://www.wipo.int/global_innovation_index/en/2022. 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 indicators that are either missing or outdated for Bangladesh.

Missing data for Bangladesh

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.2.3	Tertiary inbound mobility, %	n/a	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	n/a	2020	UNESCO Institute for Statistics
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
5.1.3	GERD performed by business, % GDP	n/a	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	n/a	2019	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, % GDP	n/a	2019	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2019	OMDIA
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO

Outdated data for Bangladesh

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2019	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
4.3.2	Domestic industry diversification	2018	2019	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2017	2021	International Labour Organization
5.1.2	Firms offering formal training, %	2013	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2017	2021	International Labour Organization
5.3.2	High-tech imports, % total trade	2015	2020	United Nations Comtrade Database
6.2.2	New businesses/th pop. 15–64	2018	2020	World Bank, Entrepreneurship Database
6.2.5	High-tech manufacturing, %	2018	2019	United Nations Industrial Development Organization



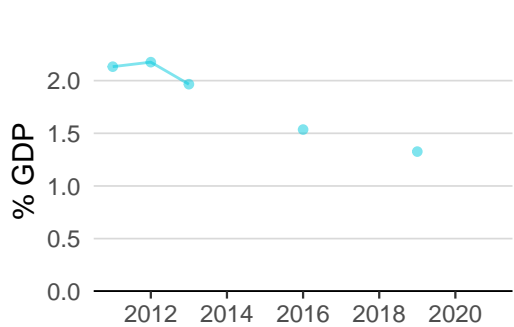
Code	Indicator name	Economy year	Model year	Source
6.3.3	High-tech exports, % total trade	2015	2020	United Nations Comtrade Database
7.2.4	Printing and other media, % manufacturing	2018	2019	United Nations Industrial Development Organization
7.2.5	Creative goods exports, % total trade	2015	2020	United Nations Comtrade Database



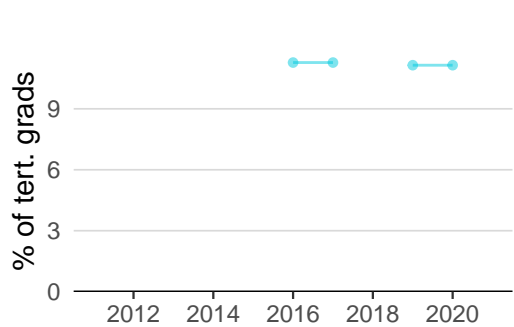
BANGLADESH'S INNOVATION SYSTEM

As far as practicable, the plots below present unscaled indicator data.

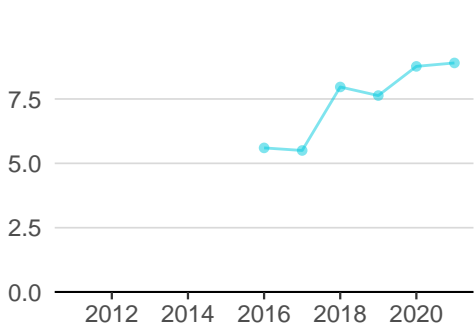
Innovation inputs



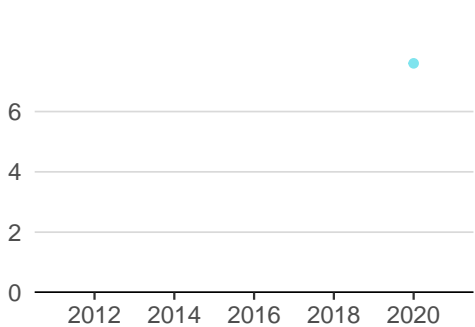
2.1.1 Expenditure on education was equal to 1.3% GDP in 2019 and equivalent to an indicator rank of 127.



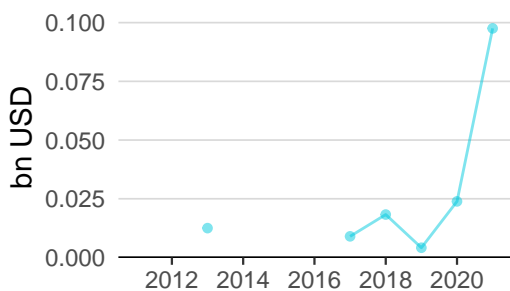
2.2.2 Graduates in science and engineering was equal to 11.1% of tert. grads in 2020—effectively unchanged from the year prior—and equivalent to an indicator rank of 106.



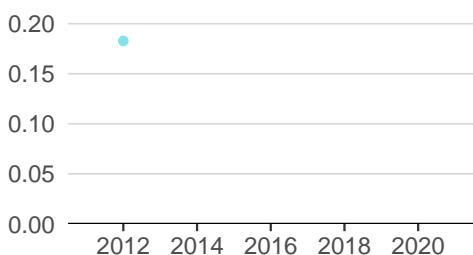
2.3.4 QS university ranking was equal to 8.9 in 2021—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 65.



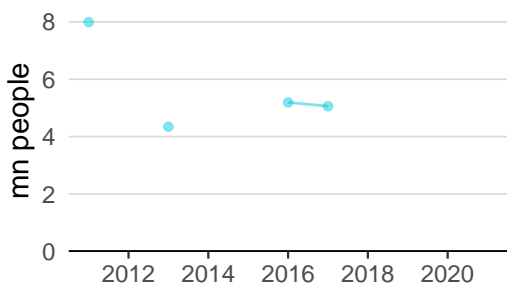
3.1.1 ICT access was equal to 7.6 in 2020 and equivalent to an indicator rank of 90.



4.2.4 Venture capital received was equal to 0.1 bn USD in 2021—up by 309 percentage points from the year prior—and equivalent to an indicator rank of 77.

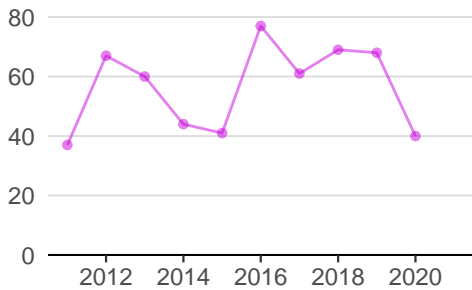


4.3.2 Domestic industry diversification was equal to 0.2 in 2018 and equivalent to an indicator rank of 77.

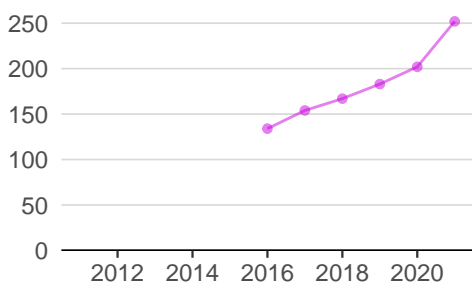


5.1.1 Knowledge-intensive employment was equal to 5.1 mn people in 2017—down by 3 percentage points from the year prior—and equivalent to an indicator rank of 111.

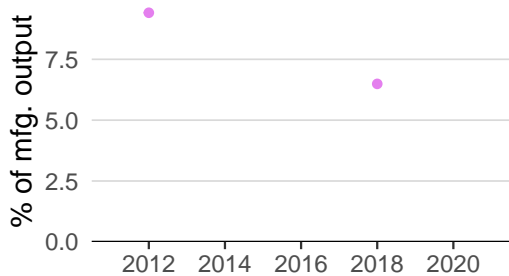
Innovation outputs



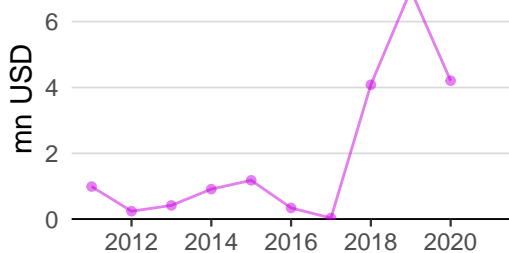
6.1.1 Patents by origin was equal to 40.0 in 2020—down by 41 percentage points from the year prior—and equivalent to an indicator rank of 122.



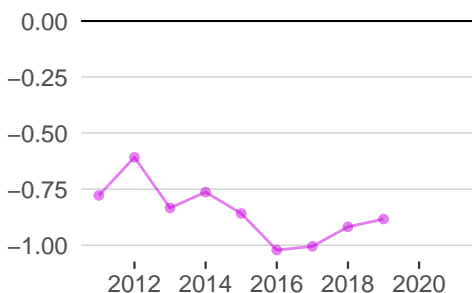
6.1.5 Citable documents H-index was equal to 252.0 in 2021—up by 25 percentage points from the year prior—and equivalent to an indicator rank of 63.



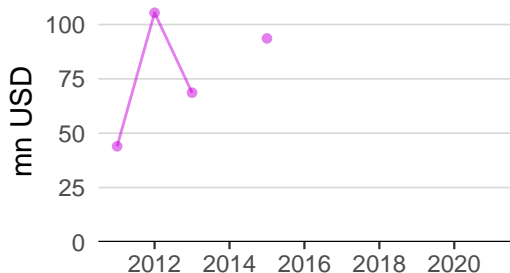
6.2.5 High-tech manufacturing was equal to 6.5% of mfg. output in 2018 and equivalent to an indicator rank of 97.



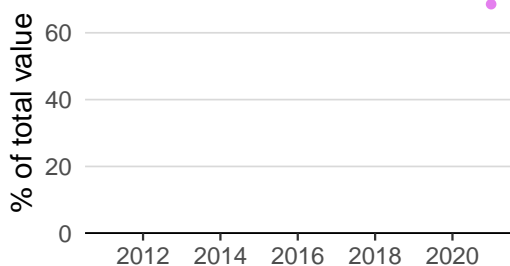
6.3.1 Intellectual property receipts was equal to 4.2 mn USD in 2020—down by 40 percentage points from the year prior—and equivalent to an indicator rank of 94.



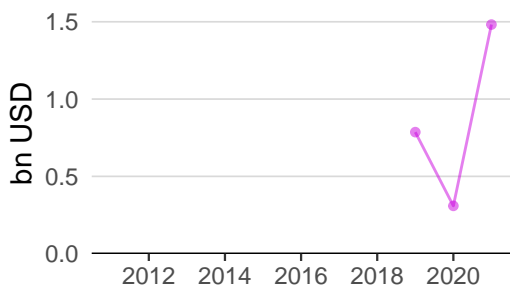
6.3.2 Production and export complexity was equal to -0.9 in 2019—up by 4 percentage points from the year prior—and equivalent to an indicator rank of 100.



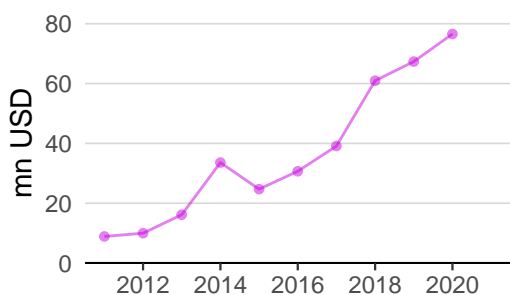
6.3.3 High-tech exports was equal to 93.6 mn USD in 2015 and equivalent to an indicator rank of 104.



7.1.1 Intangible asset intensity was equal to 68.6% of total value in 2021 and equivalent to an indicator rank of 26.



7.1.3 Global brand value was equal to 1.5 bn USD in 2021—up by 379 percentage points from the year prior—and equivalent to an indicator rank of 69.



7.2.1 Cultural and creative services exports was equal to 76.6 mn USD in 2020—up by 14 percentage points from the year prior—and equivalent to an indicator rank of 76.

BANGLADESH'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
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No observations

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard>).

2.3.4 QS university ranking

University	Score	Rank
BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY	13.1	801-1000
UNIVERSITY OF DHAKA	13.6	801-1000

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2022>).

Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100]. Ranks can represent a single value "x", a tie "x=" or a range "x-y".

7.1.1 Intangible asset intensity, top 15

Firm	Rank
GRAMEENPHONE	1
WALTON HI-TECH INDUSTRIES	2
RENATA	3

Source: Brand Finance (<https://brandirectory.com/reports/gift-2021>).

Note: Brand Finance only provides within economy ranks.

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank
DERBY	Tobacco	1
ROBI	Telecoms	2
BANGLALINK	Telecoms	3

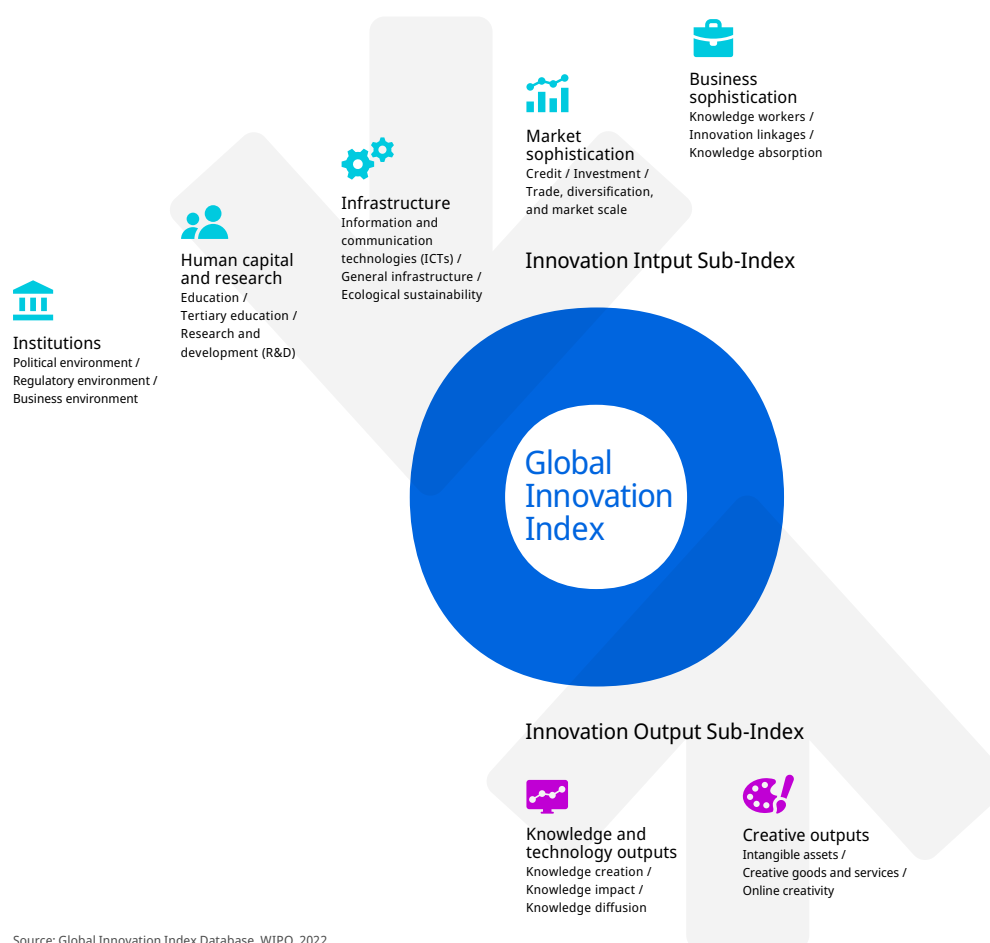
Source: Brand Finance (<https://brandirectory.com>).

Note: Rank corresponds to within economy ranks.

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.