

BAHRAIN

79th

Bahrain ranks 79th 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 Bahrain 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 Bahrain in the GII 2020 is between ranks 75 and 82.

Rankings of Bahrain (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	79	63	89
2019	78	69	87
2018	72	70	74

- Bahrain performs better in innovation inputs than innovation outputs in 2020.
- This year Bahrain ranks 63rd in innovation inputs, higher than last year and higher compared to 2018.
- As for innovation outputs, Bahrain ranks 89th. This position is lower than last year and lower compared to 2018.

47th

Bahrain ranks 47th among the 49 high-income group economies.

12th

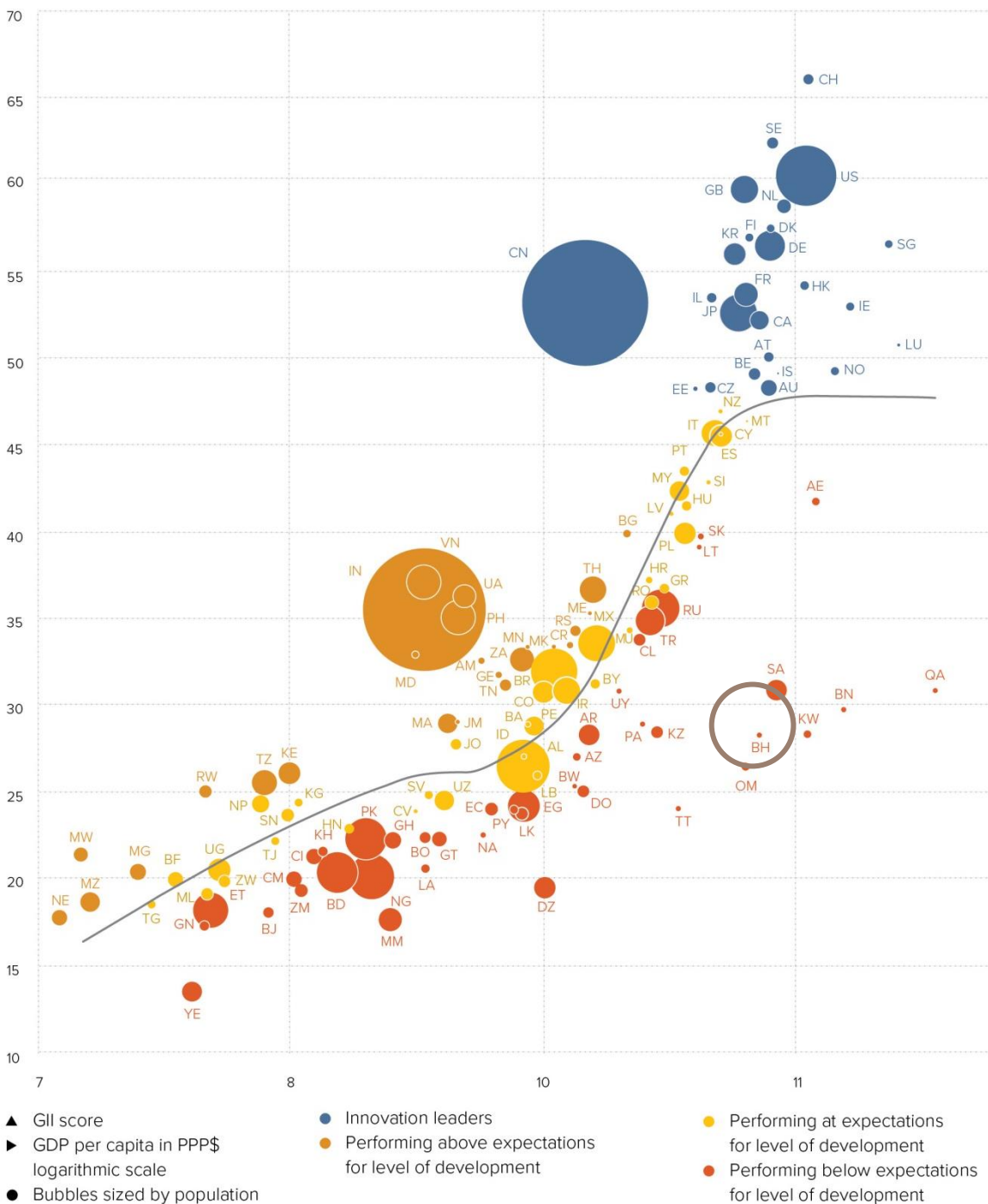
Bahrain ranks 12th among the 19 economies in Northern Africa and Western Asia.

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, Bahrain is performing below expectations for its level of development.

The positive relationship between innovation and development

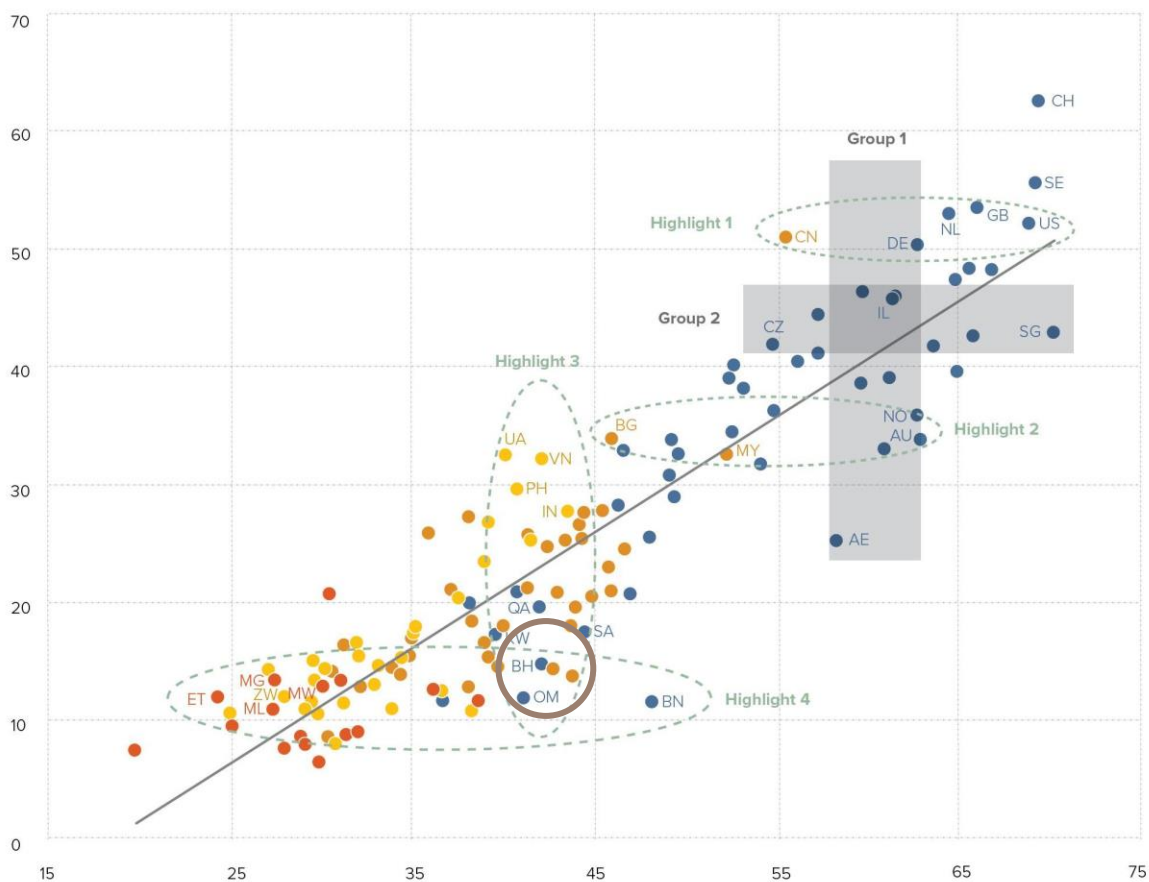


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Bahrain produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance, 2020

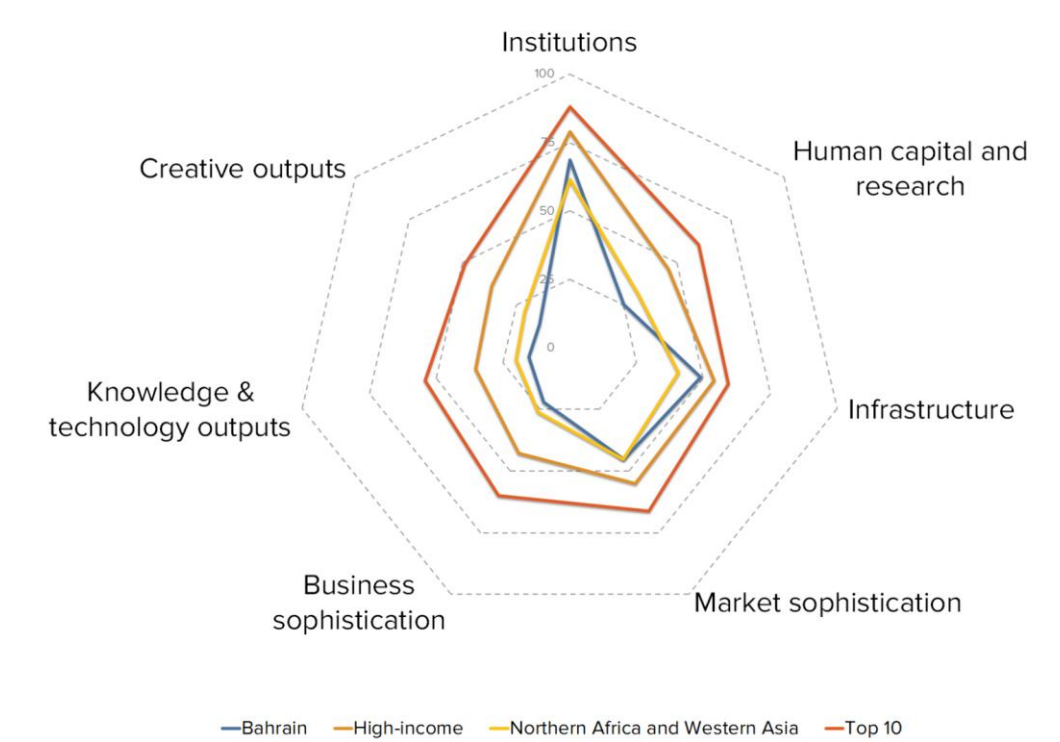


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

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 BAHRAIN AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND NORTHERN AFRICA AND WESTERN ASIA

Bahrain's scores in the seven GII pillars



High-income group economies

Bahrain scores below average for its income group in all seven of the GII pillars.

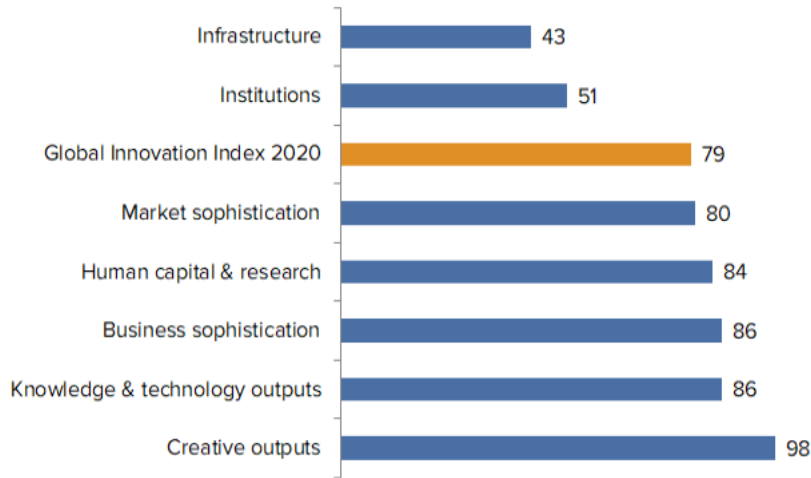
Northern Africa and Western Asia

Compared to other economies in Northern Africa and Western Asia, Bahrain performs:

- above average in three out of the seven GII pillars: Institutions, Infrastructure and Market sophistication; and
- below average in four of the seven GII pillars: Human capital & research, Business sophistication, Knowledge & technology outputs and Creative outputs.

OVERVIEW OF BAHRAIN RANKINGS IN THE SEVEN GII AREAS

Bahrain performs best in Infrastructure and its weakest performance is in Creative outputs.



*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 Bahrain in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.1.3	School life expectancy, years	28	2.1.1	Expenditure on education, % GDP	112
2.1.5	Pupil-teacher ratio, secondary	37	2.3.2	Gross expenditure on R&D, % GDP	106
2.2.3	Tertiary inbound mobility, %	12	2.3.3	Global R&D companies, top 3, mn US\$	42
3.1	Information & communication technologies (ICTs)	36	3.3.1	GDP/unit of energy use	113
3.1.1	ICT access*	21	5.3	Knowledge absorption	125
3.1.2	ICT use*	35	5.3.4	FDI net inflows, % GDP	118
3.2	General infrastructure	12	5.3.5	Research talent, % in business enterprise	83
3.2.1	Electricity output, GWh/mn pop	3	6.1	Knowledge creation	123
3.2.3	Gross capital formation, % GDP	23	6.3.2	High-tech net exports, % total trade	122
5.2	Innovation linkages	35	7.1.1	Trademarks by origin/bn PPP\$ GDP	124
5.2.2	State of cluster development†	32	7.1.3	Industrial designs by origin/bn PPP\$ GDP	114
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	14	7.2.1	Cultural & creative services exports, % total trade	113
6.3.3	ICT services exports, % total trade	30			

STRENGTHS

GII strengths for Bahrain are found in four of the seven GII pillars.

- Human capital & research (84): shows strengths in the indicators School life expectancy (28), Pupil–teacher ratio (37) and Tertiary inbound mobility (12).
- Infrastructure (43): demonstrates strengths in the sub-pillar Information & communication technologies (36) and General infrastructure (12) and in the indicators ICT access (21), ICT use (35), Electricity output (3) and Gross capital formation (23).
- Business sophistication (86): displays strengths in the sub-pillar Innovation linkages (35) and in the indicators State of cluster development (32) and JV–strategic alliance deals (14).
- Knowledge & technology outputs (86): the indicator ICT services exports (30) reveals a strength.

WEAKNESSES

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

- Human capital & research (84): shows weaknesses in the indicators Expenditure on education (112), Gross expenditure on R&D (106) and Global R&D companies (42).
- Infrastructure (43): the indicator GDP/unit of energy use (113) reveals a weakness.
- Business sophistication (86): demonstrates weaknesses in the sub-pillar Knowledge absorption (125) and in the indicators FDI net inflows (118) and Research talent (83).
- Knowledge & technology outputs (86): displays weaknesses in the sub-pillar Knowledge creation (123) and in the indicator High-tech net exports (122).
- Creative outputs (98): shows weaknesses in the indicators Trademarks by origin (124), Industrial designs by origin (114) and Cultural & creative services exports (113).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
89	63	High	NAWA	1.6	77.0	44,464.7	78
				Score/Value	Rank		
INSTITUTIONS				68.7	51		
1.1	Political environment	59.9	60				
1.1.1	Political and operational stability*	71.4	59				
1.1.2	Government effectiveness*	54.2	60				
1.2	Regulatory environment	72.2	40				
1.2.1	Regulatory quality*	53.6	51				
1.2.2	Rule of law*	57.4	47				
1.2.3	Cost of redundancy dismissal, salary weeks	13.6	49				
1.3	Business environment	73.9	56				
1.3.1	Ease of starting a business*	89.6	57				
1.3.2	Ease of resolving insolvency*	58.2	55				
HUMAN CAPITAL & RESEARCH				25.2	84		
2.1	Education	39.6	82				
2.1.1	Expenditure on education, % GDP	2.3	112				
2.1.2	Government funding/pupil, secondary, % GDP/cap	17.5	66				
2.1.3	School life expectancy, years	16.3	28				
2.1.4	PISA scales in reading, maths, & science	n/a	n/a				
2.1.5	Pupil-teacher ratio, secondary	10.2	37				
2.2	Tertiary education	33.5	64				
2.2.1	Tertiary enrolment, % gross	50.5	59				
2.2.2	Graduates in science & engineering, %	16.1	88				
2.2.3	Tertiary inbound mobility, %	13.4	12				
2.3	Research & development (R&D)	2.7	87				
2.3.1	Researchers, FTE/mn pop.	369.0	74				
2.3.2	Gross expenditure on R&D, % GDP	0.1	106				
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*	4.6	70				
INFRASTRUCTURE				49.0	43		
3.1	Information & communication technologies (ICTs)	78.5	36				
3.1.1	ICT access*	81.6	21				
3.1.2	ICT use*	72.7	35				
3.1.3	Government's online service*	79.9	45				
3.1.4	E-participation*	79.8	53				
3.2	General infrastructure	44.8	12				
3.2.1	Electricity output, kWh/mn pop.	19,614.3	3				
3.2.2	Logistics performance*	40.6	58				
3.2.3	Gross capital formation, % GDP	31.3	23				
3.3	Ecological sustainability	23.6	85				
3.3.1	GDP/unit of energy use	4.5	113				
3.3.2	Environmental performance*	51.0	54				
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	1.4	54				
MARKET SOPHISTICATION				45.3	80		
4.1	Credit	43.4	56				
4.1.1	Ease of getting credit*	55.0	88				
4.1.2	Domestic credit to private sector, % GDP	73.7	43				
4.1.3	Microfinance gross loans, % GDP	n/a	n/a				
4.2	Investment	33.2	83				
4.2.1	Ease of protecting minority investors*	66.0	50				
4.2.2	Market capitalization, % GDP	59.8	27				
4.2.3	Venture capital deals/bn PPP\$ GDP	0.0	40				
4.3	Trade, competition, and market scale	59.3	76				
4.3.1	Applied tariff rate, weighted avg., %	4.3	80				
4.3.2	Intensity of local competition*	70.1	60				
4.3.3	Domestic market scale, bn PPP\$	77.0	90				
BUSINESS SOPHISTICATION				22.1	86		
5.1	Knowledge workers	20.5	[101]				
5.1.1	Knowledge-intensive employment, %	21.9	70				
5.1.2	Firms offering formal training, %	n/a	n/a				
5.1.3	GERD performed by business, % GDP	0.0	80				
5.1.4	GERD financed by business, %	21.8	64				
5.1.5	Females employed w/advanced degrees, %	n/a	n/a				
5.2	Innovation linkages	29.8	35				
5.2.1	University/industry research collaboration†	36.8	90				
5.2.2	State of cluster development†	55.8	32				
5.2.3	GERD financed by abroad, % GDP	0.0	76				
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.2	14				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.1	63				
5.3	Knowledge absorption	16.0	125				
5.3.1	Intellectual property payments, % total trade	n/a	n/a				
5.3.2	High-tech imports, % total trade	5.2	109				
5.3.3	ICT services imports, % total trade	0.4	111				
5.3.4	FDI net inflows, % GDP	0.8	118				
5.3.5	Research talent, % in business enterprise	0.4	83				
KNOWLEDGE & TECHNOLOGY OUTPUTS				15.3	86		
6.1	Knowledge creation	3.0	123				
6.1.1	Patents by origin/bn PPP\$ GDP	0.2	102				
6.1.2	PCT patents by origin/bn PPP\$ GDP	0.0	87				
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	n/a				
6.1.4	Scientific & technical articles/bn PPP\$ GDP	2.2	116				
6.1.5	Citable documents H-index	3.9	115				
6.2	Knowledge impact	22.3	71				
6.2.1	Growth rate of PPP\$ GDP/worker, %	2.3	40				
6.2.2	New businesses/th pop. 15-64	3.1	44				
6.2.3	Computer software spending, % GDP	0.0	41				
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	5.0	55				
6.2.5	High- and medium-high-tech manufacturing, %	8.4	88				
6.3	Knowledge diffusion	20.8	73				
6.3.1	Intellectual property receipts, % total trade	n/a	n/a				
6.3.2	High-tech net exports, % total trade	0.0	122				
6.3.3	ICT services exports, % total trade	3.0	30				
6.3.4	FDI net outflows, % GDP	0.6	68				
CREATIVE OUTPUTS				14.0	98		
7.1	Intangible assets	18.3	102				
7.1.1	Trademarks by origin/bn PPP\$ GDP	4.1	124				
7.1.2	Global brand value, top 5,000, % GDP	13.3	53				
7.1.3	Industrial designs by origin/bn PPP\$ GDP	0.1	114				
7.1.4	ICTs & organizational model creation†	58.2	51				
7.2	Creative goods and services	7.9	[89]				
7.2.1	Cultural & creative services exports, % total trade	0.0	113				
7.2.2	National feature films/mn pop. 15-69	n/a	n/a				
7.2.3	Entertainment & Media market/th pop. 15-69	10.3	36				
7.2.4	Printing and other media, % manufacturing	n/a	n/a				
7.2.5	Creative goods exports, % total trade	0.8	51				
7.3	Online creativity	11.8	77				
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	4.4	57				
7.3.2	Country-code TLDs/th pop. 15-69	0.5	99				
7.3.3	Wikipedia edits/mn pop. 15-69	45.2	71				
7.3.4	Mobile app creation/bn PPP\$ GDP	0.0	89				

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 Bahrain.

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)
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.2	Firms offering formal training, %	n/a	2018	World Bank
5.1.5	Females employed w/advanced degrees, %	n/a	2018	International Labour Organization
5.3.1	Intellectual property payments, % total trade	n/a	2018	World Trade Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2018	World Trade Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics
7.2.4	Printing & other media, % manufacturing	n/a	2017	United Nations Industrial Development Organization

Outdated data

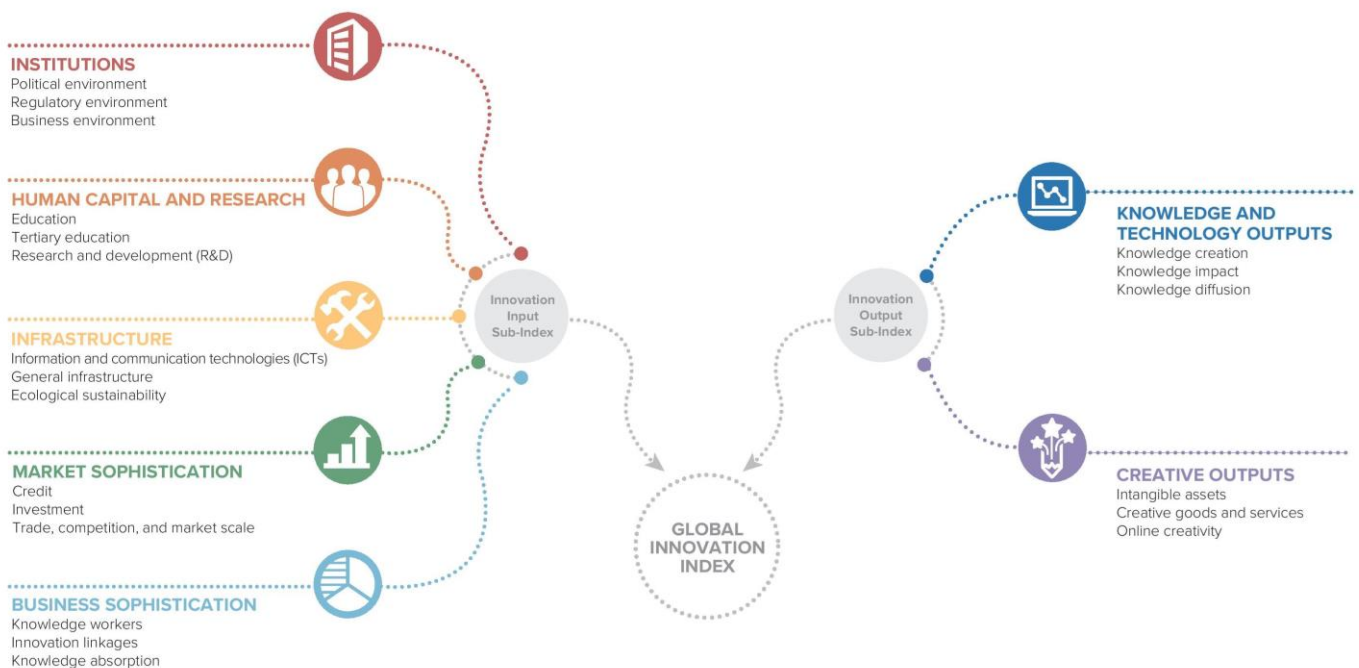
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2017	2018	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2016	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2014	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.1.2	Domestic credit to private sector, % GDP	2015	2018	International Monetary Fund
5.1.1	Knowledge-intensive employment, %	2015	2018	International Labour Organization
5.1.3	GERD performed by business, % GDP	2014	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	2014	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	2014	2017	UNESCO Institute for Statistics
5.3.3	ICT services imports, % total trade	2017	2018	World Trade Organization
5.3.5	Research talent, % in business enterprise	2014	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.2.5	High- & medium-high-tech manufacturing, %	2016	2017	United Nations Industrial Development Organization
6.3.3	ICT services exports, % total trade	2017	2018	World Trade Organization
7.2.1	Cultural & creative services exports, % total trade	2013	2018	World Trade Organization

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.

