



BAHRAIN

72nd Bahrain ranks 72nd 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 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 2022 is between ranks 68 and 83.

Rankings for Bahrain (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	79	63	89
2021	78	63	99
2022	72	50	86

- Bahrain performs better in innovation inputs than innovation outputs in 2022.
- This year Bahrain ranks 50th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Bahrain ranks 86th. This position is higher than both 2021 and 2020.

45th Bahrain ranks 45th among the 48 high-income group economies.

9th Bahrain ranks 9th among the 19 economies in Northern Africa and Western Asia.

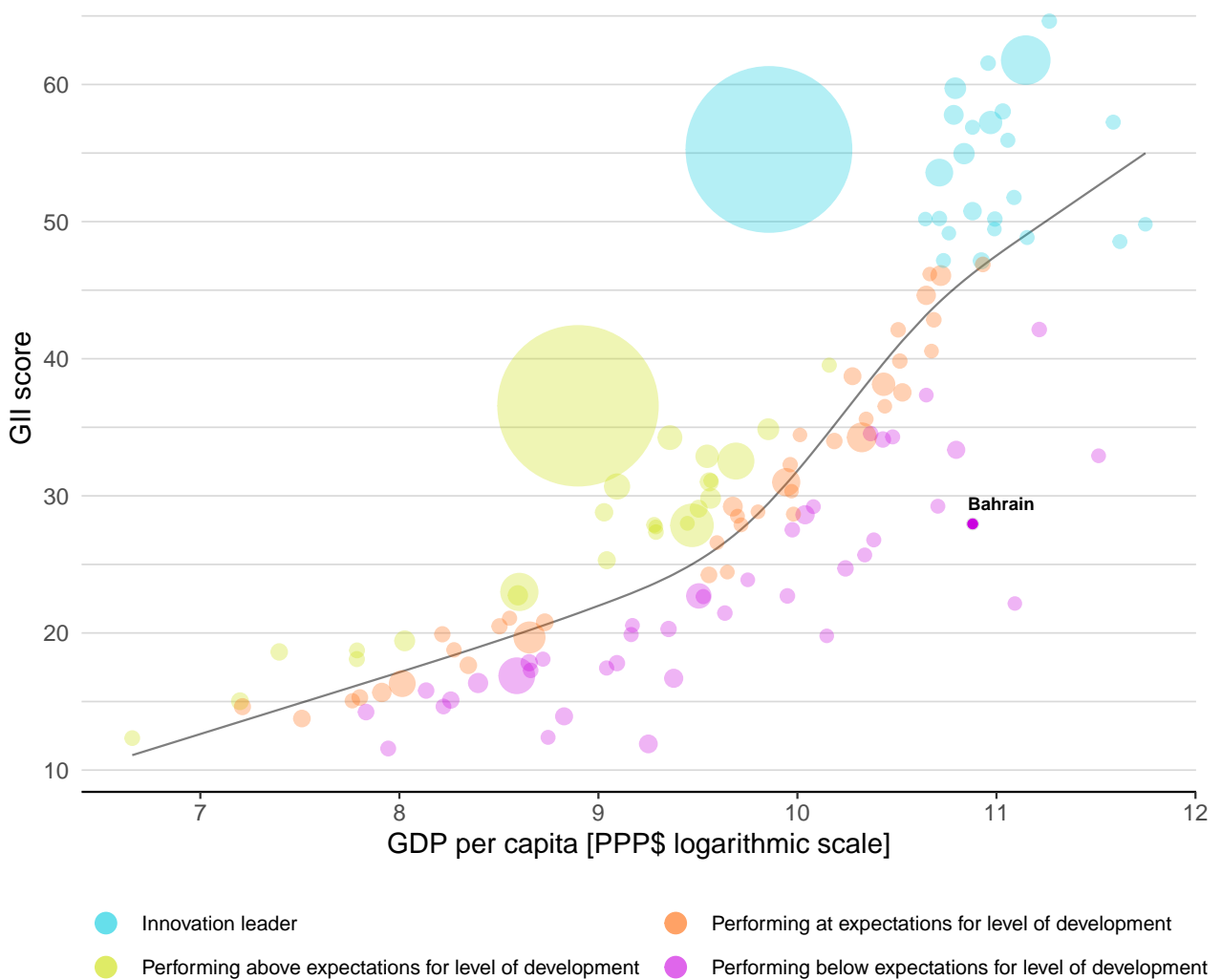


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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's performance is below expectations for its level of development.

The positive relationship between innovation and development



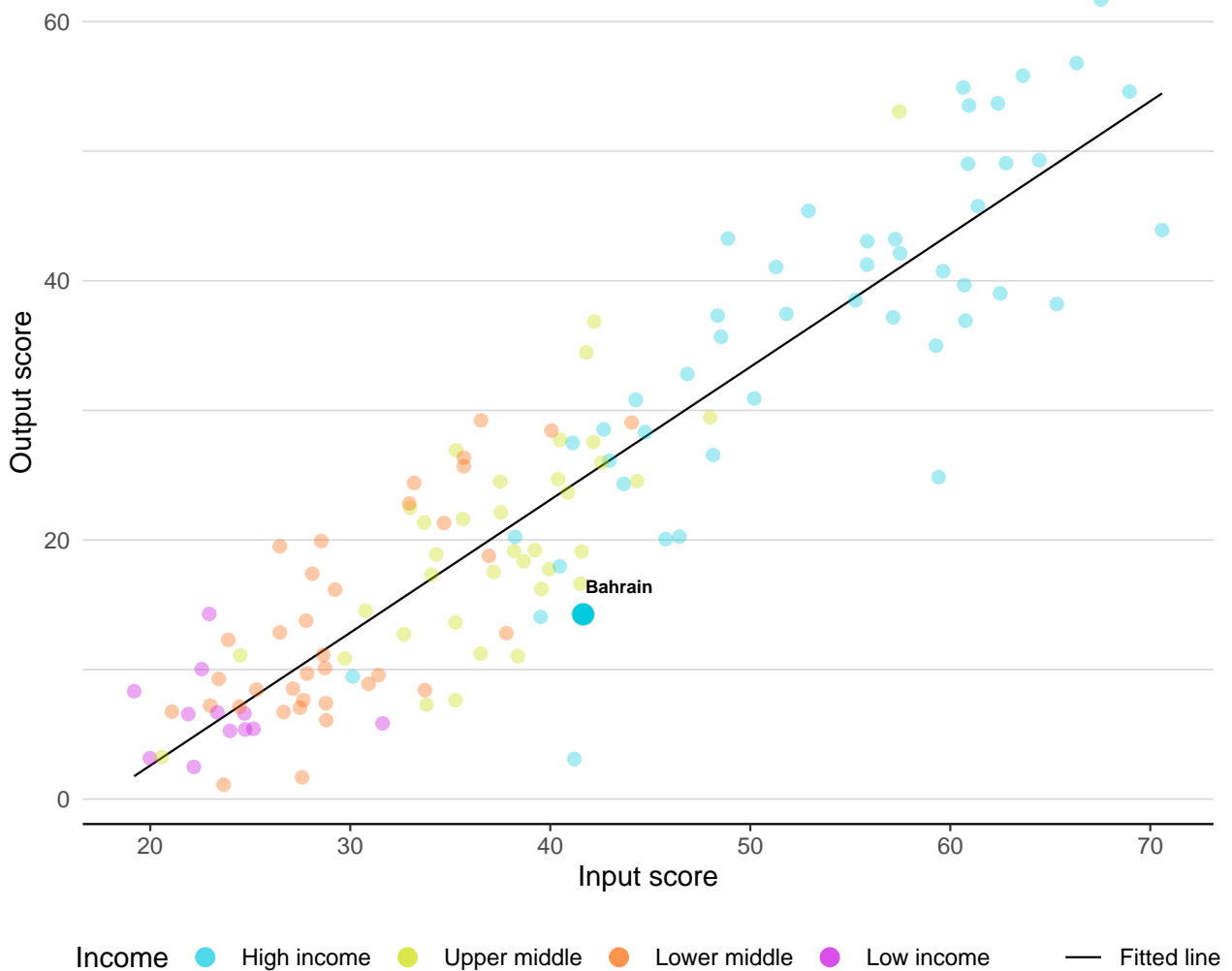


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

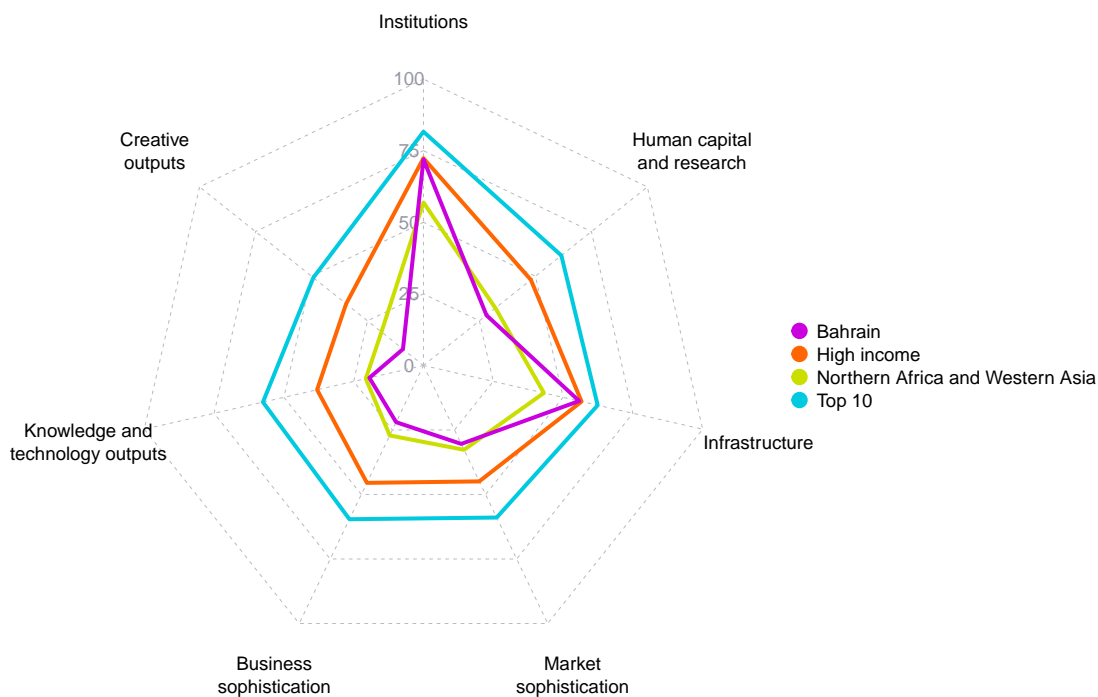
Innovation input to output performance





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

The seven GII pillar scores for Bahrain



High-income group economies

Bahrain performs below the high-income group average in all GII pillars.

Northern Africa and Western Asia

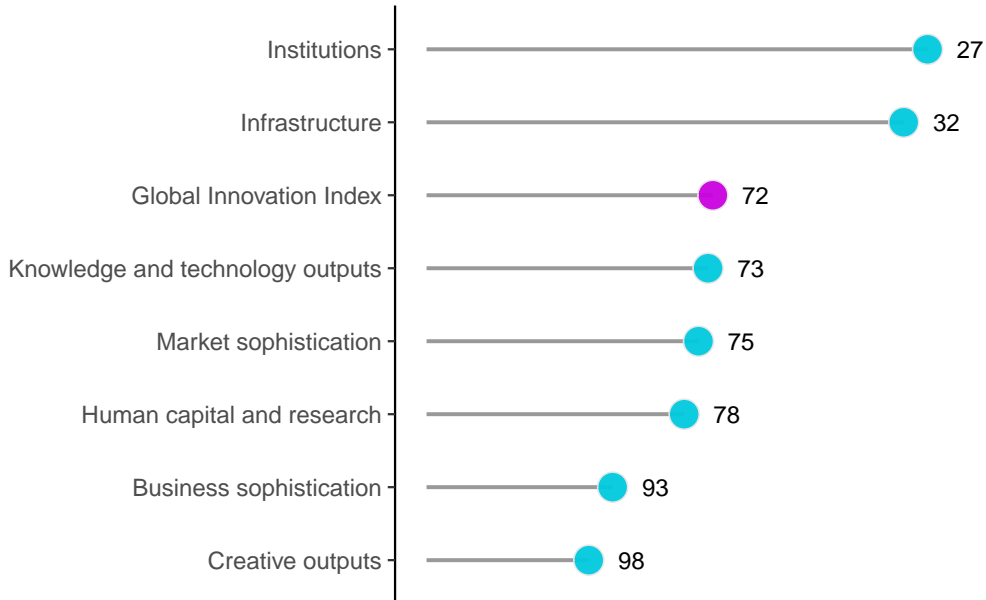
Bahrain performs above the regional average in two pillars, namely: Institutions; and, Infrastructure.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

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

The seven GII pillar ranks for Bahrain



Note: The highest possible ranking in each pillar is 1.

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Bahrain

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.3.1	Policies for doing business	8	2.1.1	Expenditure on education, % GDP	123
2.1.3	School life expectancy, years	28	2.3.2	Gross expenditure on R&D, % GDP	105
2.2.3	Tertiary inbound mobility, %	15	2.3.3	Global corporate R&D investors, top 3, mn USD	38
3.1.1	ICT access	16	3.3.1	GDP/unit of energy use	124
3.1.2	ICT use	30	5.1.3	GERD performed by business, % GDP	80
3.2.1	Electricity output, GWh/mn pop.	1	5.3.2	High-tech imports, % total trade	118
3.2.3	Gross capital formation, % GDP	9	5.3.3	ICT services imports, % total trade	118
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	16	5.3.5	Research talent, % in businesses	82
6.2.1	Labor productivity growth, %	15	7.1.1	Intangible asset intensity, top 15, %	70
6.2.3	Software spending, % GDP	31	7.1.2	Trademarks by origin/bn PPP\$ GDP	119

Bahrain

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Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
86	50	High	NAWA	1.7	79.0	53,128

	Score/Value	Rank		Score/Value	Rank
Institutions	71.9	27 ●	Business sophistication	22.0	93 ◊
1.1 Political environment	64.0	51 ◊	5.1 Knowledge workers	19.8	[96]
1.1.1 Political and operational stability*	69.1	63 ◊	5.1.1 Knowledge-intensive employment, %	21.9	69 ◊
1.1.2 Government effectiveness*	58.9	46 ◊	5.1.2 Firms offering formal training, %	n/a	n/a
1.2 Regulatory environment	74.3	38	5.1.3 GERD performed by business, % GDP	2.0	80 ◊
1.2.1 Regulatory quality*	60.6	42 ◊	5.1.4 GERD financed by business, %	21.8	65 ◊
1.2.2 Rule of law*	58.8	45 ◊	5.1.5 Females employed w/advanced degrees, %	n/a	n/a
1.2.3 Cost of redundancy dismissal	13.6	49	5.2 Innovation linkages	29.3	41
1.3 Business environment	77.5	[9]	5.2.1 University-industry R&D collaboration†	39.0	86 ◊
1.3.1 Policies for doing business†	77.5	8 ● ◆	5.2.2 State of cluster development and depth†	56.2	33
1.3.2 Entrepreneurship policies and culture*	n/a	n/a	5.2.3 GERD financed by abroad, % GDP	0.0	70 ◊
			5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.2	16 ●
			5.2.5 Patent families/bn PPP\$ GDP	0.0	74 ◊
Human capital and research	28.1	78 ◊	5.3 Knowledge absorption	16.9	131 ◊
2.1 Education	48.5	72 ◊	5.3.1 Intellectual property payments, % total trade	n/a	n/a
2.1.1 Expenditure on education, % GDP	2.2	123 ◊	5.3.2 High-tech imports, % total trade	4.9	118 ◊
2.1.2 Government funding/pupil, secondary, % GDP/cap	17.6	67 ◊	5.3.3 ICT services imports, % total trade	0.4	118 ◊
2.1.3 School life expectancy, years	16.3	28 ●	5.3.4 FDI net inflows, % GDP	2.4	64
2.1.4 PISA scales in reading, maths and science	n/a	n/a	5.3.5 Research talent, % in businesses	0.4	82 ◊
2.1.5 Pupil-teacher ratio, secondary	10.4	32			
2.2 Tertiary education	31.1	66 ◊	Knowledge and technology outputs	19.4	73 ◊
2.2.1 Tertiary enrolment, % gross	60.3	51	6.1 Knowledge creation	3.7	114 ◊
2.2.2 Graduates in science and engineering, %	15.5	93 ◊	6.1.1 Patents by origin/bn PPP\$ GDP	0.1	108
2.2.3 Tertiary inbound mobility, %	12.8	15 ●	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.1	71 ◊
2.3 Research and development (R&D)	4.8	72 ◊	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.3.1 Researchers, FTE/mn pop.	369.0	77 ◊	6.1.4 Scientific and technical articles/bn PPP\$ GDP	6.4	106 ◊
2.3.2 Gross expenditure on R&D, % GDP	0.1	105 ◊	6.1.5 Citable documents H-index	4.0	105 ◊
2.3.3 Global corporate R&D investors, top 3, mn USD	0.0	38 ◊	6.2 Knowledge impact	28.8	60
2.3.4 QS university ranking, top 3*	11.6	60 ◊	6.2.1 Labor productivity growth, %	3.3	15 ● ◆
			6.2.2 New businesses/th pop. 15-64	3.1	42
			6.2.3 Software spending, % GDP	0.3	31 ●
			6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	6.3	44
			6.2.5 High-tech manufacturing, %	9.8	90 ◊
			6.3 Knowledge diffusion	25.6	56
			6.3.1 Intellectual property receipts, % total trade	n/a	n/a
			6.3.2 Production and export complexity	42.5	58 ◊
			6.3.3 High-tech exports, % total trade	0.6	87 ◊
			6.3.4 ICT services exports, % total trade	3.1	41
			Creative outputs	9.2	98 ◊
			7.1 Intangible assets	13.5	93 ◊
			7.1.1 Intangible asset intensity, top 15, %	19.9	70 ◊
			7.1.2 Trademarks by origin/bn PPP\$ GDP	4.9	119 ◊
			7.1.3 Global brand value, top 5,000, % GDP	14.3	53
			7.1.4 Industrial designs by origin/bn PPP\$ GDP	0.2	106 ◊
			7.2 Creative goods and services	7.5	[92]
			7.2.1 Cultural and creative services exports, % total trade	n/a	n/a
			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	4.7	45 ◊
			7.2.4 Printing and other media, % manufacturing	n/a	n/a
			7.2.5 Creative goods exports, % total trade	0.9	48
			7.3 Online creativity	2.1	85 ◊
			7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	4.3	57
			7.3.2 Country-code TLDs/th pop. 15-69	0.9	89 ◊
			7.3.3 GitHub commit pushes received/mn pop. 15-69	3.1	70 ◊
			7.3.4 Mobile app creation/bn PPP\$ GDP	0.1	95
Infrastructure	55.8	32 ●			
3.1 Information and communication technologies (ICTs)	81.9	40			
3.1.1 ICT access*	94.2	16 ●			
3.1.2 ICT use*	77.1	30 ●			
3.1.3 Government's online service*	78.8	45			
3.1.4 E-participation*	77.4	51			
3.2 General infrastructure	64.3	6 ● ◆			
3.2.1 Electricity output, GWh/mn pop.	20,390.2	1 ● ◆			
3.2.2 Logistics performance*	40.9	58 ◊			
3.2.3 Gross capital formation, % GDP	34.2	9 ● ◆			
3.3 Ecological sustainability	21.1	90 ◊			
3.3.1 GDP/unit of energy use	4.5	124 ◊			
3.3.2 Environmental performance*	42.0	66 ◊			
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	2.2	42			
Market sophistication	30.4	75 ◊			
4.1 Credit	27.0	[66]			
4.1.1 Finance for startups and scaleups*	n/a	n/a			
4.1.2 Domestic credit to private sector, % GDP	73.9	45			
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a			
4.2 Investment	13.4	44			
4.2.1 Market capitalization, % GDP	66.1	27			
4.2.2 Venture capital investors, deals/bn PPP\$ GDP	0.1	32			
4.2.3 Venture capital recipients, deals/bn PPP\$ GDP	0.0	50			
4.2.4 Venture capital received, value, % GDP	0.0	51			
4.3 Trade, diversification, and market scale	50.8	80			
4.3.1 Applied tariff rate, weighted avg., %	2.0	62			
4.3.2 Domestic industry diversification	63.8	95 ◊			
4.3.3 Domestic market scale, bn PPP\$	79.0	91			

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 Bahrain.

Missing data for Bahrain

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
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
4.1.3	Loans from microfinance institutions, % GDP	n/a	2020	International Monetary Fund, Financial Access Survey (FAS)
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	n/a	2021	International Labour Organization
5.3.1	Intellectual property payments, % total trade	n/a	2020	World Trade Organization and United Nations Conference on Trade and Development
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2020	World Trade Organization and United Nations Conference on Trade and Development
7.2.1	Cultural and creative services exports, % total trade	n/a	2020	World Trade Organization and United Nations Conference on Trade and Development
7.2.2	National feature films/mn pop. 15–69	n/a	2019	OMDIA
7.2.4	Printing and other media, % manufacturing	n/a	2019	United Nations Industrial Development Organization

Outdated data for Bahrain

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2014	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
4.1.2	Domestic credit to private sector, % GDP	2015	2020	International Monetary Fund
4.3.2	Domestic industry diversification	2016	2019	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2015	2021	International Labour Organization
5.1.3	GERD performed by business, % GDP	2014	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	2014	2019	UNESCO Institute for Statistics

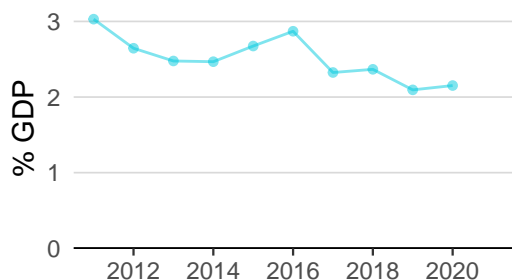
Code	Indicator name	Economy year	Model year	Source
5.2.3	GERD financed by abroad, % GDP	2014	2019	UNESCO Institute for Statistics
5.3.2	High-tech imports, % total trade	2019	2020	United Nations Comtrade Database
5.3.3	ICT services imports, % total trade	2018	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2014	2020	UNESCO Institute for Statistics
6.2.2	New businesses/th pop. 15–64	2018	2020	World Bank, Entrepreneurship Database
6.2.5	High-tech manufacturing, %	2016	2019	United Nations Industrial Development Organization
6.3.3	High-tech exports, % total trade	2019	2020	United Nations Comtrade Database
6.3.4	ICT services exports, % total trade	2018	2020	World Trade Organization and United Nations Conference on Trade and Development
7.2.5	Creative goods exports, % total trade	2019	2020	United Nations Comtrade Database



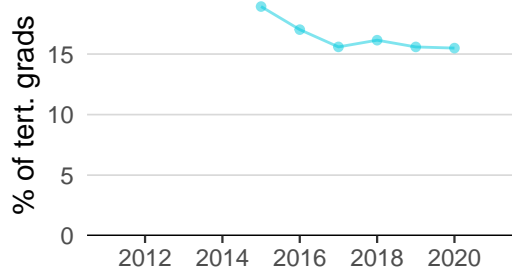
BAHRAIN'S INNOVATION SYSTEM

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

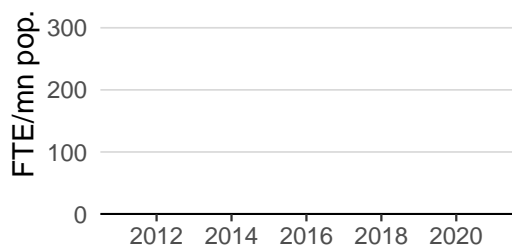
Innovation inputs



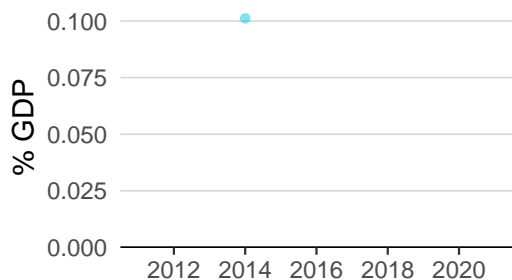
2.1.1 Expenditure on education was equal to 2.2% GDP in 2020—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 123.



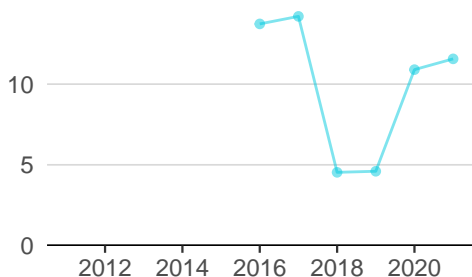
2.2.2 Graduates in science and engineering was equal to 15.5% of tert. grads in 2020—down by 1 percentage point from the year prior—and equivalent to an indicator rank of 93.



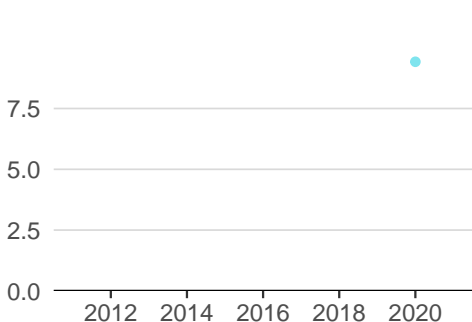
2.3.1 Researchers was equal to 369.0 FTE/mn pop. in 2014 and equivalent to an indicator rank of 77.



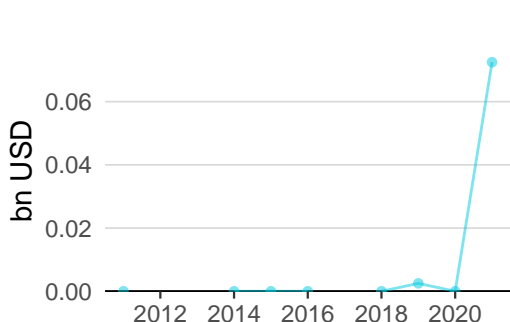
2.3.2 Gross expenditure on R&D was equal to 0.1% GDP in 2014 and equivalent to an indicator rank of 105.



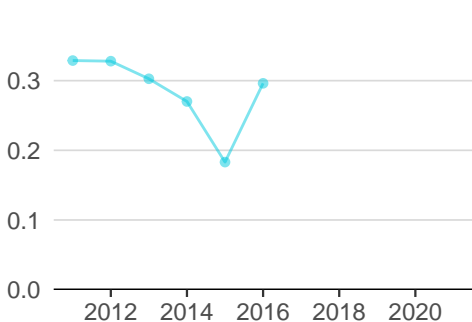
2.3.4 QS university ranking was equal to 11.6 in 2021—up by 6 percentage points from the year prior—and equivalent to an indicator rank of 60.



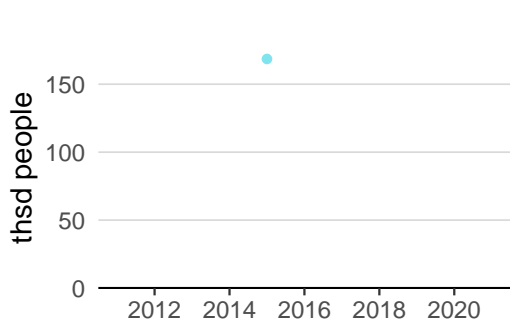
3.1.1 ICT access was equal to 9.4 in 2020 and equivalent to an indicator rank of 16.



4.2.4 Venture capital received was equal to 0.1 bn USD in 2021—up by 100 percentage points from the year prior—and equivalent to an indicator rank of 51.

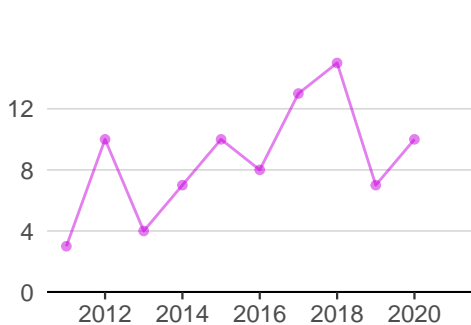


4.3.2 Domestic industry diversification was equal to 0.3 in 2016—up by 62 percentage points from the year prior—and equivalent to an indicator rank of 95.

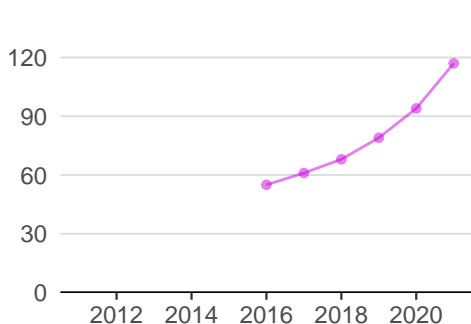


5.1.1 Knowledge-intensive employment was equal to 168.6 thsd people in 2015 and equivalent to an indicator rank of 69.

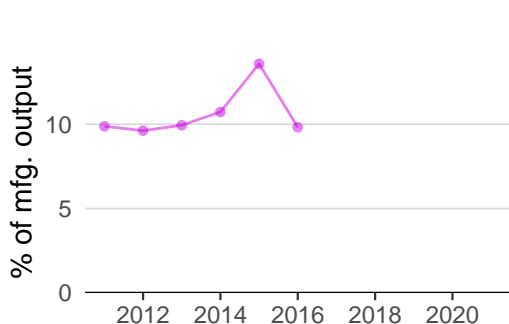
Innovation outputs



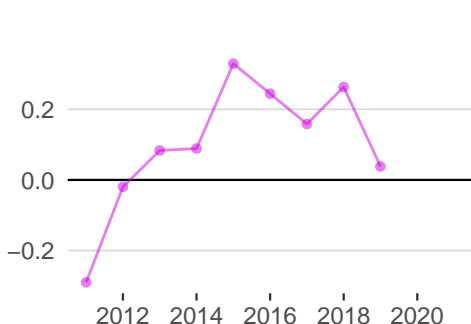
6.1.1 Patents by origin was equal to 10.0 in 2020—up by 43 percentage points from the year prior—and equivalent to an indicator rank of 108.



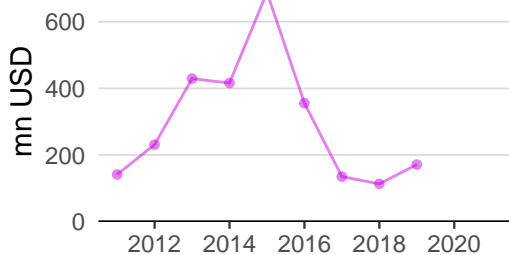
6.1.5 Citable documents H-index was equal to 117.0 in 2021—up by 24 percentage points from the year prior—and equivalent to an indicator rank of 105.



6.2.5 High-tech manufacturing was equal to 9.8% of mfg. output in 2016—down by 28 percentage points from the year prior—and equivalent to an indicator rank of 90.



6.3.2 Production and export complexity was equal to 0.0 in 2019—down by 85 percentage points from the year prior—and equivalent to an indicator rank of 58.



6.3.3 High-tech exports was equal to 171.0 mn USD in 2019—up by 51 percentage points from the year prior—and equivalent to an indicator rank of 87.



7.1.1 Intangible asset intensity was equal to 19.9% of total value in 2021 and equivalent to an indicator rank of 70.



7.1.3 Global brand value was equal to 560.2 mn USD in 2021—down by 5 percentage points from the year prior—and equivalent to an indicator rank of 53.

BAHRAIN'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
APPLIED SCIENCE UNIVERSITY - BAHRAIN	20.4	591-600
UNIVERSITY OF BAHRAIN	14.3	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
AHLI UNITED BANK	1
BAHRAIN TELECOM	2
NATIONAL BANK OF BAHRAIN	3

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

Note: Brand Finance only provides within economy ranks.

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank
AHLI UNITED BANK	Banking	1
ALBA	Mining, Iron & Steel	2

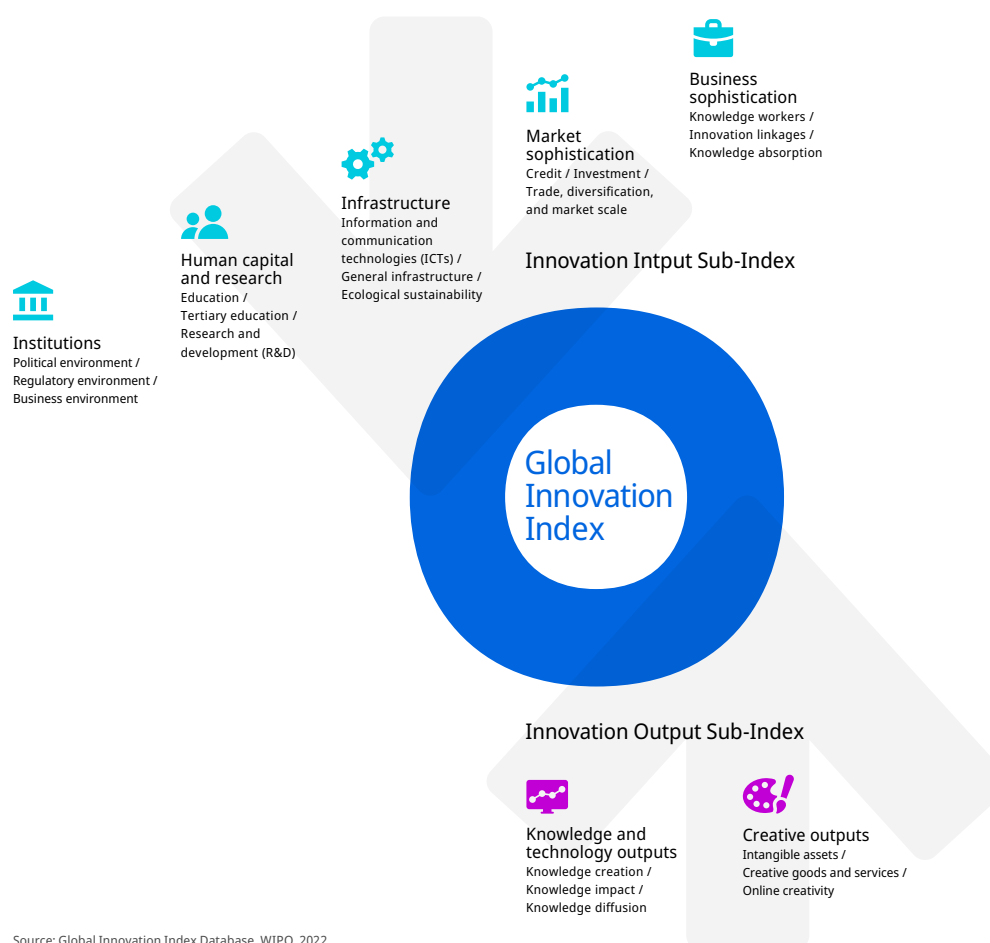
Source: Brand Finance (<https://brandirectory.com>).

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.