



# Global Innovation Index 2021



## BAHRAIN

**78th**

Bahrain ranks 78th 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 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 2021 is between ranks 73 and 81.

### Rankings for Bahrain (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	78	63	99
2020	79	63	89
2019	78	69	87

- Bahrain performs better in innovation inputs than innovation outputs in 2021.
- This year Bahrain ranks 63rd in innovation inputs, the same as last year but higher than 2019.
- As for innovation outputs, Bahrain ranks 99th. This position is lower than both 2020 and 2019.

**48th**

Bahrain ranks 48th among the 51 high-income group economies.

**13th**

Bahrain ranks 13th among the 19 economies in Northern Africa and Western Asia.

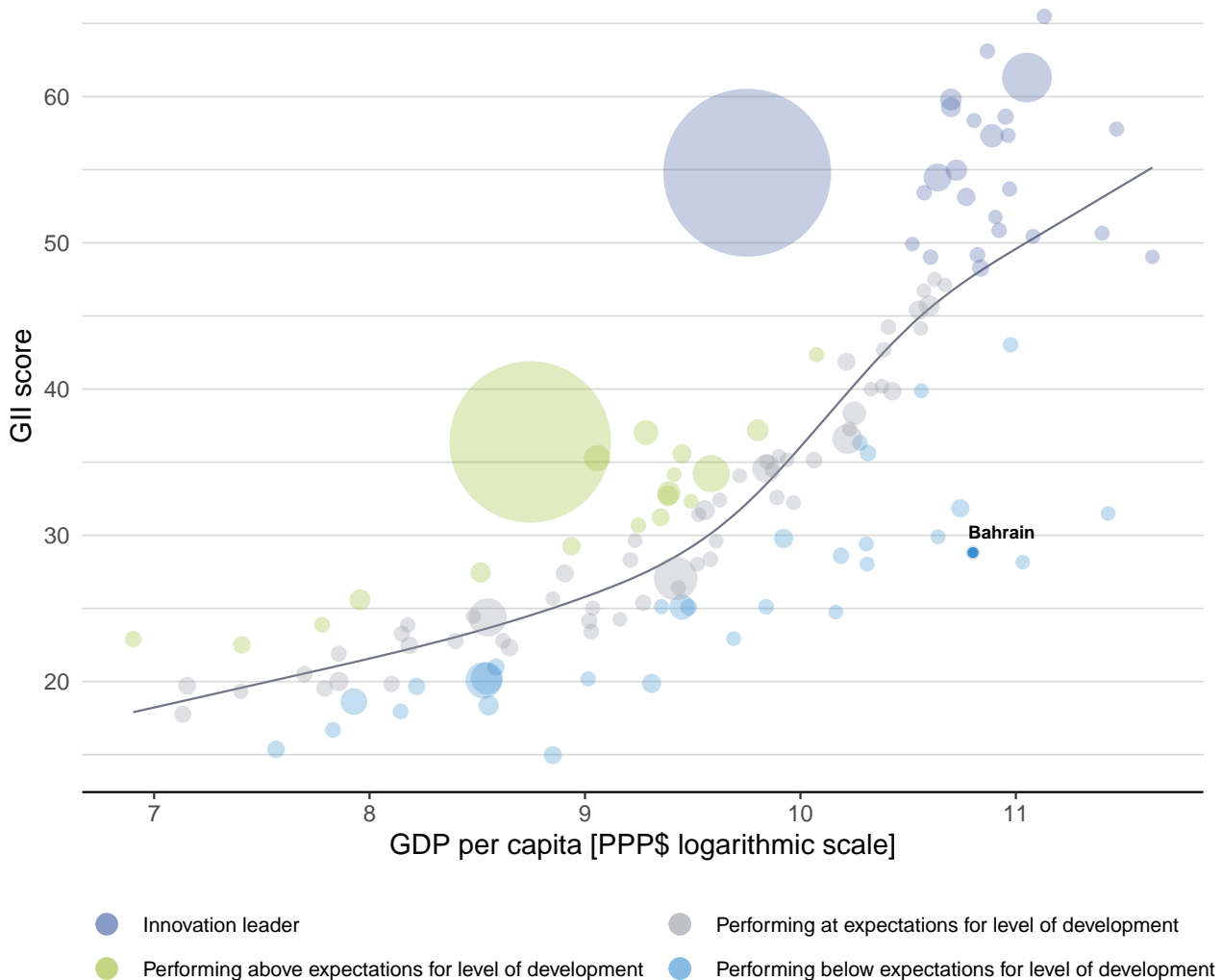


## EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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



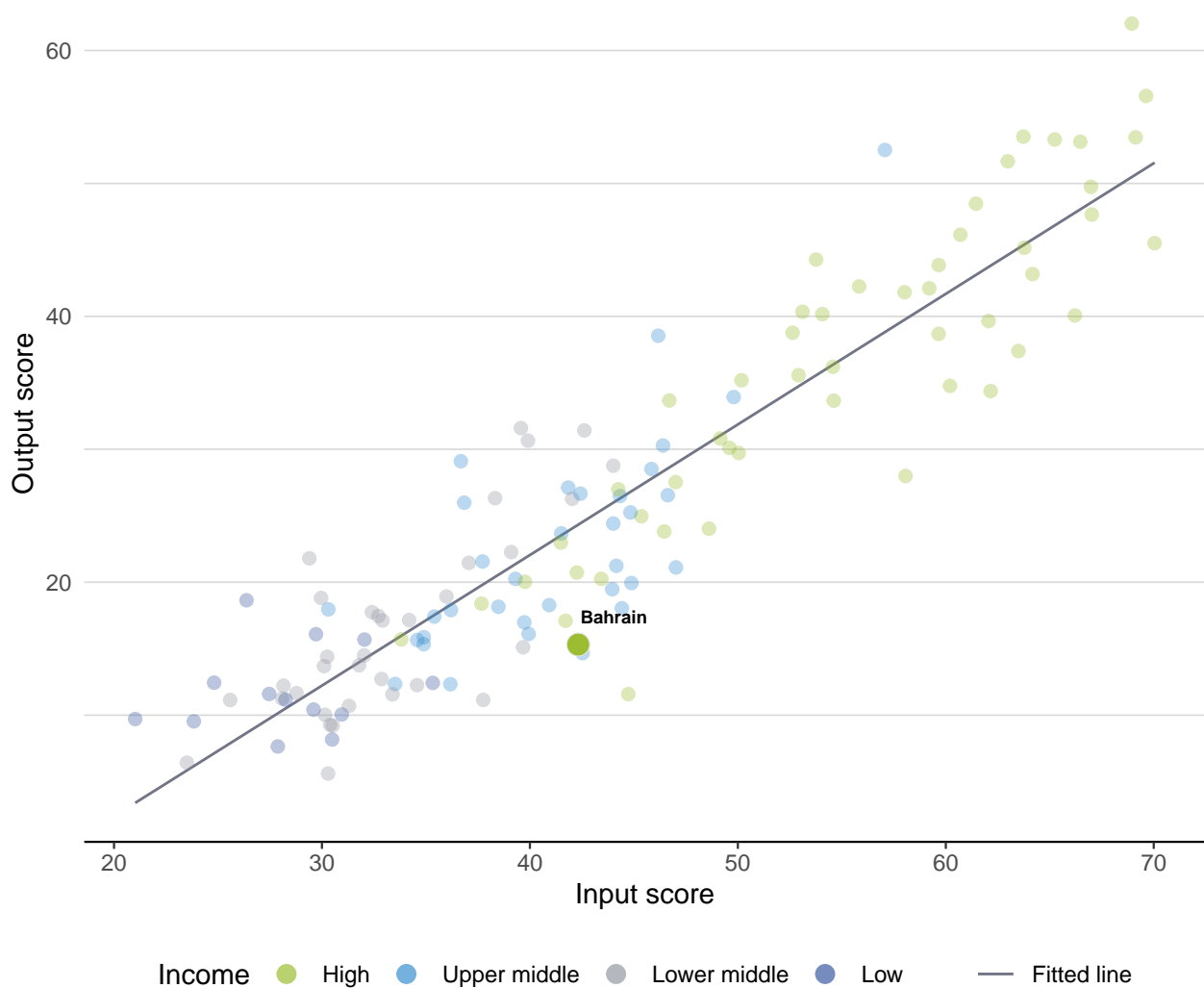


## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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

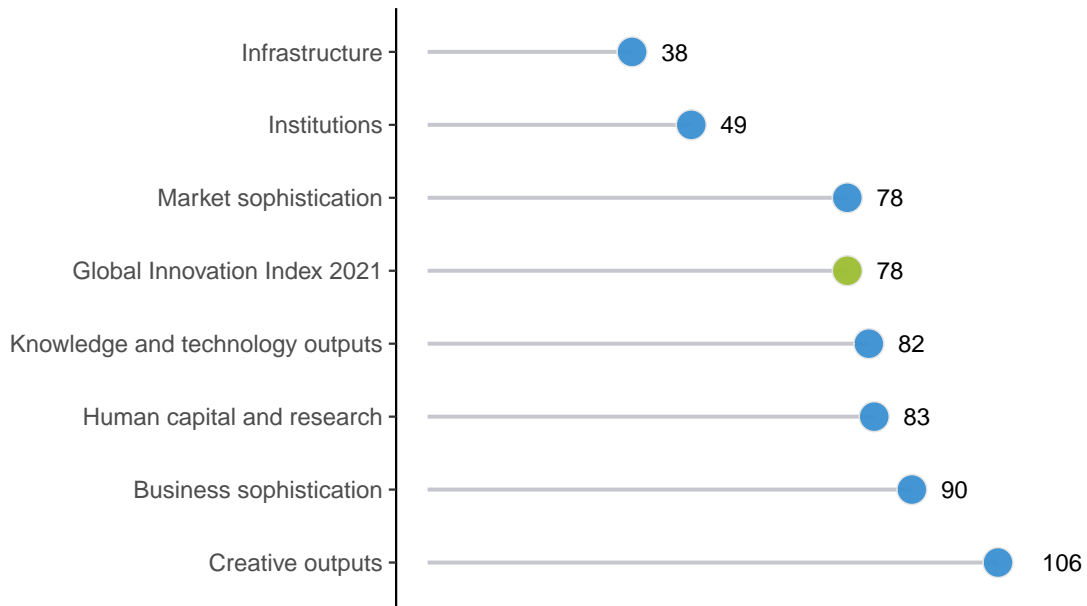
Bahrain performs above the regional average in two pillars, namely: Institutions; and, Infrastructure.



## OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

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

### The seven GII pillar ranks for Bahrain



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 Bahrain in the GII 2021.

### Strengths and weaknesses for Bahrain

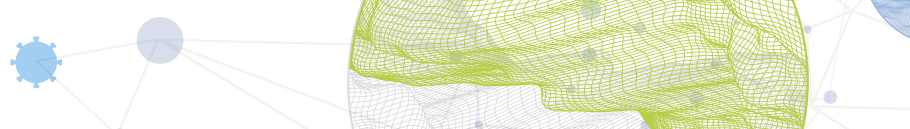
Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.1.3	School life expectancy, years	28	2.1.1	Expenditure on education, % GDP	108
2.1.5	Pupil-teacher ratio, secondary	32	2.3.2	Gross expenditure on R&D, % GDP	105
2.2.3	Tertiary inbound mobility, %	12	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
3.1.1	ICT access	23	3.3.1	GDP/unit of energy use	116
3.2	General infrastructure	10	5.1.3	GERD performed by business, % GDP	82
3.2.1	Electricity output, GWh/mn pop.	3	5.3	Knowledge absorption	126
3.2.3	Gross capital formation, % GDP	15	5.3.5	Research talent, % in businesses	83
5.2	Innovation linkages	33	6.1	Knowledge creation	121
5.2.2	State of cluster development and depth	33	6.3.1	Intellectual property receipts, % total trade	114
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	9	7.1.1	Trademarks by origin/bn PPP\$ GDP	125
6.2.3	Software spending, % GDP	30	7.1.3	Industrial designs by origin/bn PPP\$ GDP	110
6.3.4	ICT services exports, % total trade	33	7.2.1	Cultural and creative services exports, % total trade	113

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
99	63	High	NAWA	1.7	74.2	49,057	79

	Score/ Value	Rank		Score/ Value	Rank
 <b>Institutions</b>	69.4	49	 <b>Business sophistication</b>	21.1	90
<b>1.1 Political environment</b>	60.8	56	<b>5.1 Knowledge workers</b>	19.9	[101]
1.1.1 Political and operational stability*	67.9	71	5.1.1 Knowledge-intensive employment, %	21.9	72
1.1.2 Government effectiveness*	57.3	55	5.1.2 Firms offering formal training, %	n/a	n/a
<b>1.2 Regulatory environment</b>	73.4	40	5.1.3 GERD performed by business, % GDP	0.0	82
1.2.1 Regulatory quality*	56.2	51	5.1.4 GERD financed by business, %	21.8	65
1.2.2 Rule of law*	59.7	45	5.1.5 Females employed w/advanced degrees, %	n/a	n/a
1.2.3 Cost of redundancy dismissal	13.6	49	<b>5.2 Innovation linkages</b>	30.5	33
<b>1.3 Business environment</b>	73.9	56	5.2.1 University-industry R&D collaboration†	38.2	87
1.3.1 Ease of starting a business*	89.6	57	5.2.2 State of cluster development and depth†	56.3	33
1.3.2 Ease of resolving insolvency*	58.2	55	5.2.3 GERD financed by abroad, % GDP	0.0	74
			5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.2	9
			5.2.5 Patent families/bn PPP\$ GDP	0.0	76
 <b>Human capital and research</b>	26.3	83	<b>5.3 Knowledge absorption</b>	12.9	126
<b>2.1 Education</b>	44.1	81	5.3.1 Intellectual property payments, % total trade	n/a	n/a
2.1.1 Expenditure on education, % GDP	2.3	108	5.3.2 High-tech imports, % total trade	5.2	109
2.1.2 Government funding/pupil, secondary, % GDP/cap	17.5	62	5.3.3 ICT services imports, % total trade	0.4	113
2.1.3 School life expectancy, years	16.3	28	5.3.4 FDI net inflows, % GDP	1.4	98
2.1.4 PISA scales in reading, maths and science	n/a	n/a	5.3.5 Research talent, % in businesses	0.4	83
2.1.5 Pupil-teacher ratio, secondary	10.4	32	 <b>Knowledge and technology outputs</b>	15.8	82
<b>2.2 Tertiary education</b>	30.5	73	<b>6.1 Knowledge creation</b>	3.4	121
2.2.1 Tertiary enrolment, % gross	55.6	53	6.1.1 Patents by origin/bn PPP\$ GDP	0.1	113
2.2.2 Graduates in science and engineering, %	15.6	96	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0	85
2.2.3 Tertiary inbound mobility, %	14.2	12	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
<b>2.3 Research and development (R&amp;D)</b>	4.2	82	6.1.4 Scientific and technical articles/bn PPP\$ GDP	4.7	113
2.3.1 Researchers, FTE/mn pop.	369.0	73	6.1.5 Citable documents H-index	4.4	112
2.3.2 Gross expenditure on R&D, % GDP	0.1	105	<b>6.2 Knowledge impact</b>	26.2	80
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0	41	6.2.1 Labor productivity growth, %	-0.2	71
2.3.4 QS university ranking, top 3*	10.9	64	6.2.2 New businesses/th pop. 15-64	3.1	44
			6.2.3 Software spending, % GDP	0.3	30
 <b>Infrastructure</b>	50.5	38	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	5.7	48
<b>3.1 Information and communication technologies (ICTs)</b>	77.7	41	6.2.5 High-tech manufacturing, %	9.8	89
3.1.1 ICT access*	83.4	23	<b>6.3 Knowledge diffusion</b>	17.8	61
3.1.2 ICT use*	71.3	45	6.3.1 Intellectual property receipts, % total trade	0.0	114
3.1.3 Government's online service*	78.8	45	6.3.2 Production and export complexity	50.9	48
3.1.4 E-participation*	77.4	51	6.3.3 High-tech exports, % total trade	0.4	94
<b>3.2 General infrastructure</b>	50.3	10	6.3.4 ICT services exports, % total trade	3.1	33
3.2.1 Electricity output, GWh/mn pop.	18,831.1	3	 <b>Creative outputs</b>	14.8	106
3.2.2 Logistics performance*	41.2	58	<b>7.1 Intangible assets</b>	18.8	107
3.2.3 Gross capital formation, % GDP	33.6	15	7.1.1 Trademarks by origin/bn PPP\$ GDP	4.5	125
<b>3.3 Ecological sustainability</b>	23.5	84	7.1.2 Global brand value, top 5,000, % GDP	17.0	51
3.3.1 GDP/unit of energy use	4.9	116	7.1.3 Industrial designs by origin/bn PPP\$ GDP	0.1	110
3.3.2 Environmental performance*	51.0	54	7.1.4 ICTs and organizational model creation†	58.2	51
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	1.8	48	<b>7.2 Creative goods and services</b>	6.7	[95]
			7.2.1 Cultural and creative services exports, % total trade	0.0	113
 <b>Market sophistication</b>	44.3	78	7.2.2 National feature films/mn pop. 15-69	n/a	n/a
<b>4.1 Credit</b>	42.3	58	7.2.3 Entertainment and media market/th pop. 15-69	8.1	39
4.1.1 Ease of getting credit*	55.0	88	7.2.4 Printing and other media, % manufacturing	n/a	n/a
4.1.2 Domestic credit to private sector, % GDP	73.9	44	7.2.5 Creative goods exports, % total trade	0.8	50
4.1.3 Microfinance gross loans, % GDP	n/a	n/a	<b>7.3 Online creativity</b>	14.9	74
<b>4.2 Investment</b>	29.3	70	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	4.2	57
4.2.1 Ease of protecting minority investors*	66.0	50	7.3.2 Country-code TLDs/th pop. 15-69	0.4	101
4.2.2 Market capitalization, % GDP	63.0	25	7.3.3 Wikipedia edits/mn pop. 15-69	54.5	58
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	0.1	33	7.3.4 Mobile app creation/bn PPP\$ GDP	0.0	93
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	0.0	40			
<b>4.3 Trade, diversification, and market scale</b>	61.4	88			
4.3.1 Applied tariff rate, weighted avg., %	3.5	68			
4.3.2 Domestic industry diversification	70.9	96			
4.3.3 Domestic market scale, bn PPP\$	74.2	92			

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 Bahrain.

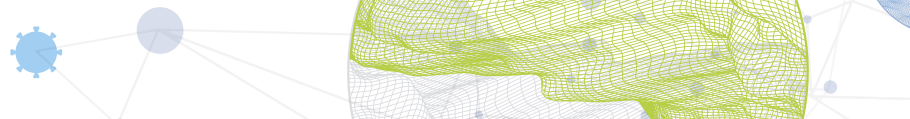
### Missing data for Bahrain

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)
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.2	Firms offering formal training, %	n/a	2019	World Bank
5.1.5	Females employed w/advanced degrees, %	n/a	2019	International Labour Organization
5.3.1	Intellectual property payments, % total trade	n/a	2019	World Trade Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics
7.2.4	Printing and other media, % manufacturing	n/a	2018	United Nations Industrial Development Organization

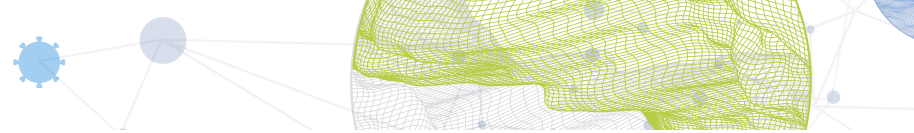
### Outdated data for Bahrain

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2017	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.2	Domestic credit to private sector, % GDP	2015	2019	International Monetary Fund
5.1.1	Knowledge-intensive employment, %	2015	2019	International Labour Organization





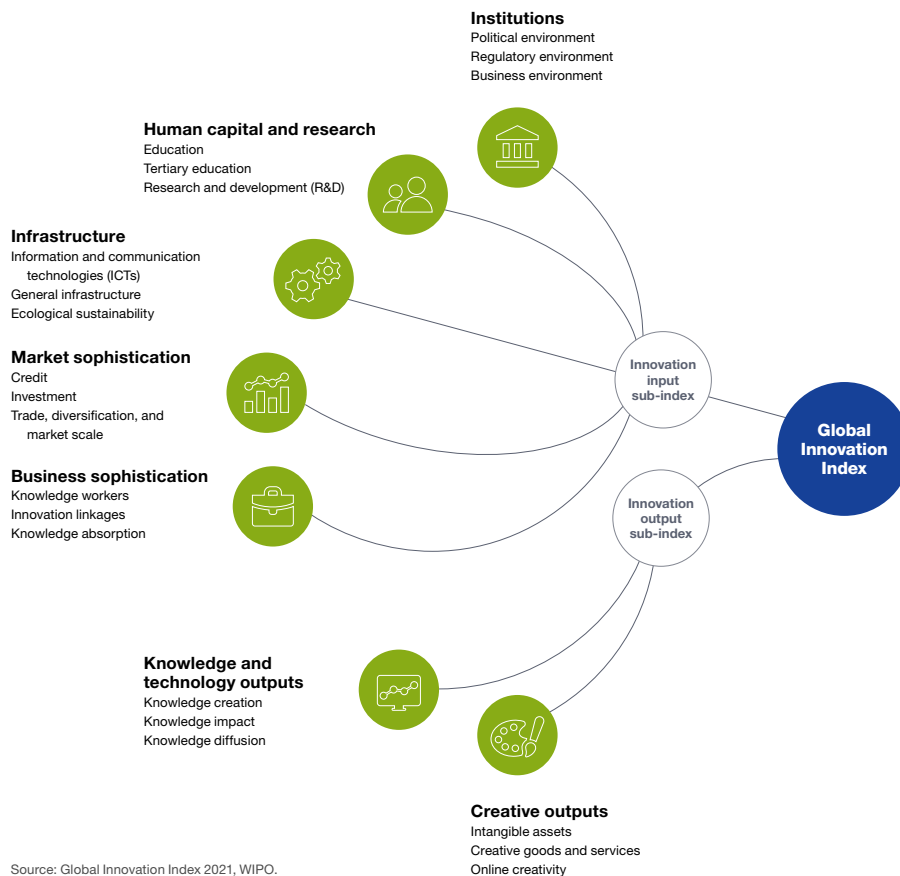
<b>Code</b>	<b>Indicator name</b>	<b>Economy year</b>	<b>Model year</b>	<b>Source</b>
5.1.3	GERD performed by business, % GDP	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	2014	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	2014	2018	UNESCO Institute for Statistics
5.3.2	High-tech imports, % total trade	2018	2019	United Nations, COMTRADE
5.3.5	Research talent, % in businesses	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.3.1	Intellectual property receipts, % total trade	2013	2019	World Trade Organization
6.3.3	High-tech exports, % total trade	2018	2019	United Nations, COMTRADE
7.2.1	Cultural and creative services exports, % total trade	2013	2019	World Trade Organization
7.2.5	Creative goods exports, % total trade	2018	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.