Global Innovation Index 2022

QATAR

52nd Qatar ranks 52nd 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 Qatar 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 Qatar in the GII 2022 is between ranks 51 and 65.

Rankings for Qatar (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	70	64	72
2021	68	64	70
2022	52	38	67

- Qatar performs better in innovation inputs than innovation outputs in 2022.
- This year Qatar ranks 38th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Qatar ranks 67th. This position is higher than both 2021 and 2020.

42nd Qatar ranks 42nd among the 48 high-income group economies.

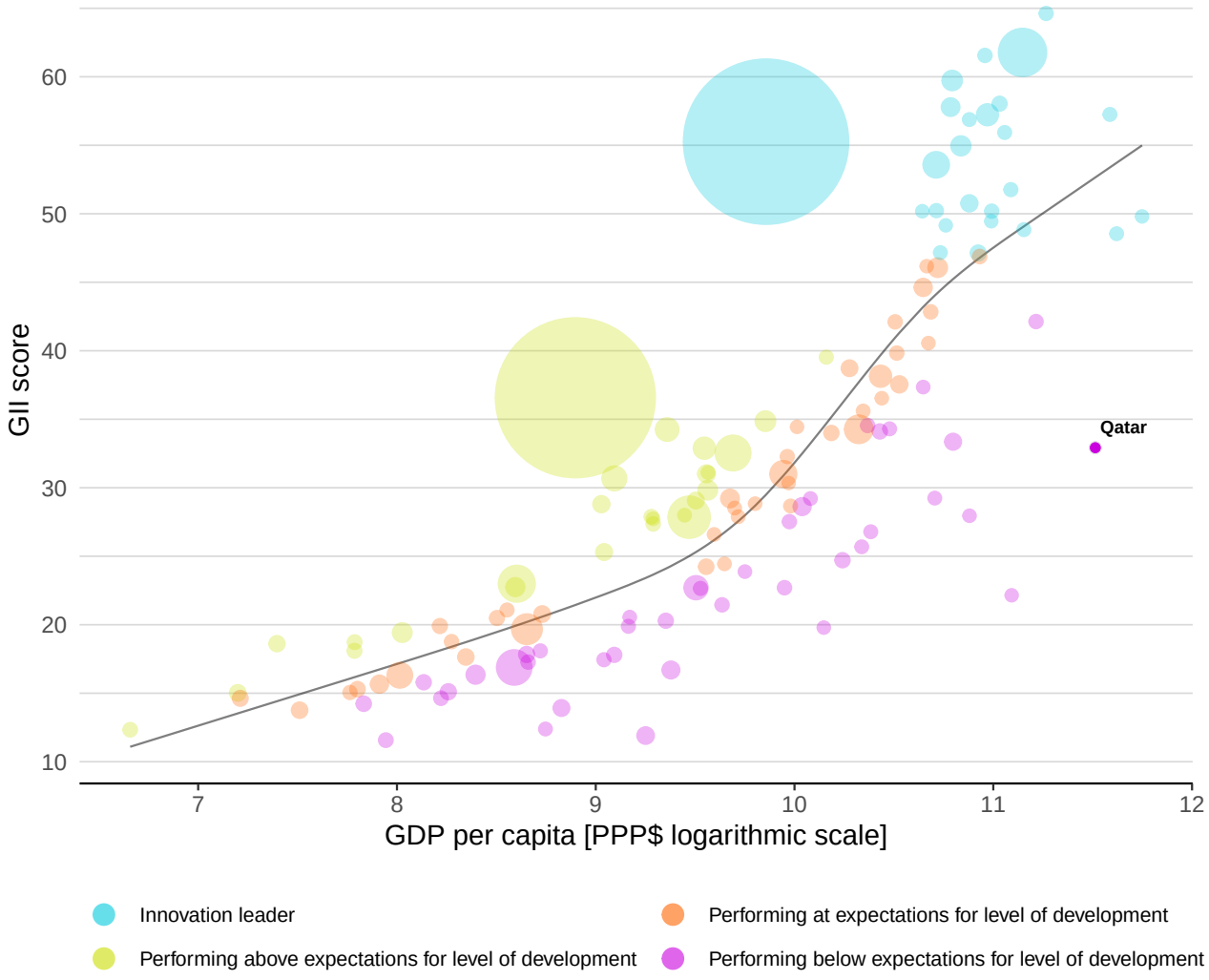
6th Qatar ranks 6th among the 19 economies in Northern Africa and Western Asia.

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

The positive relationship between innovation and development

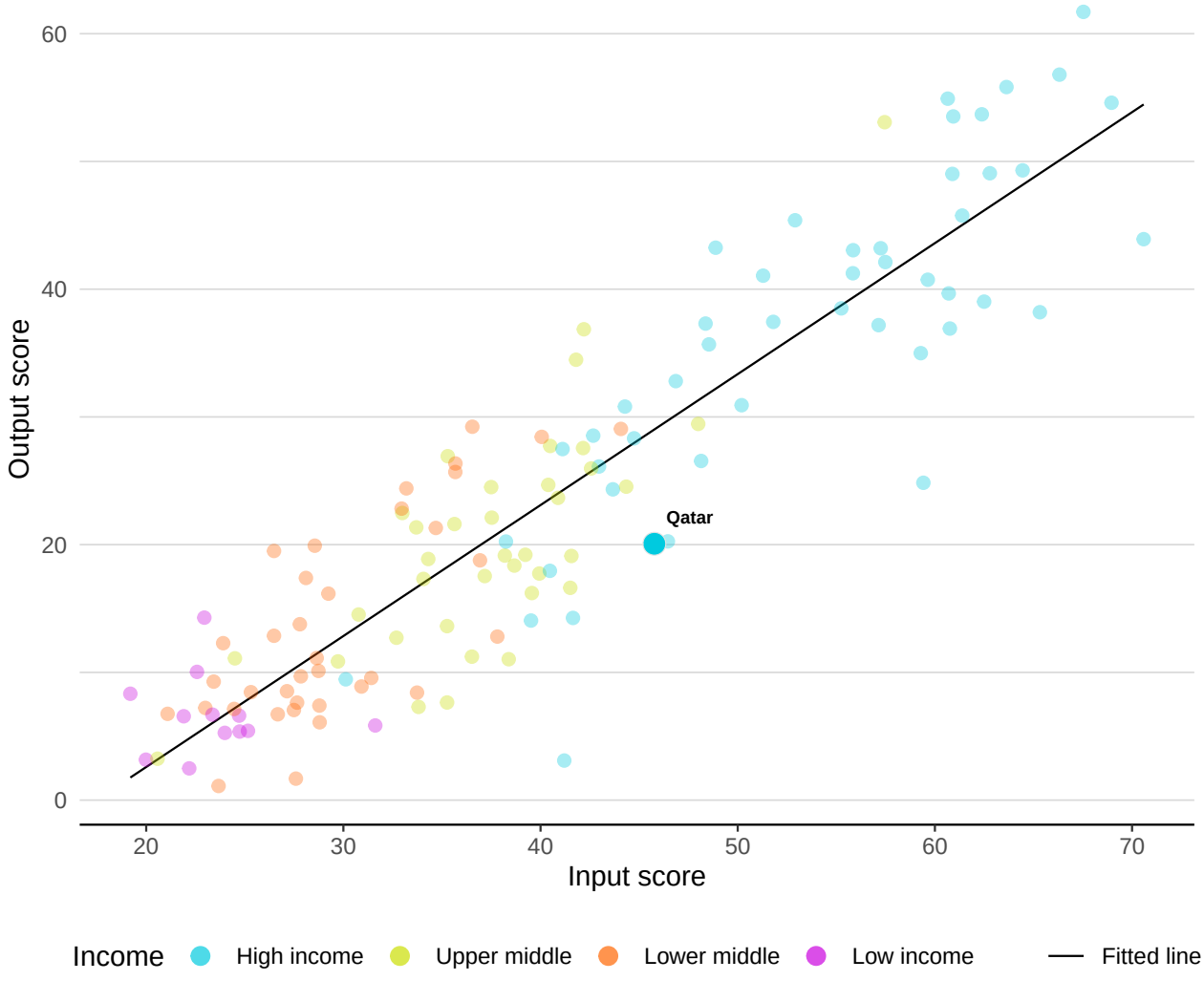


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

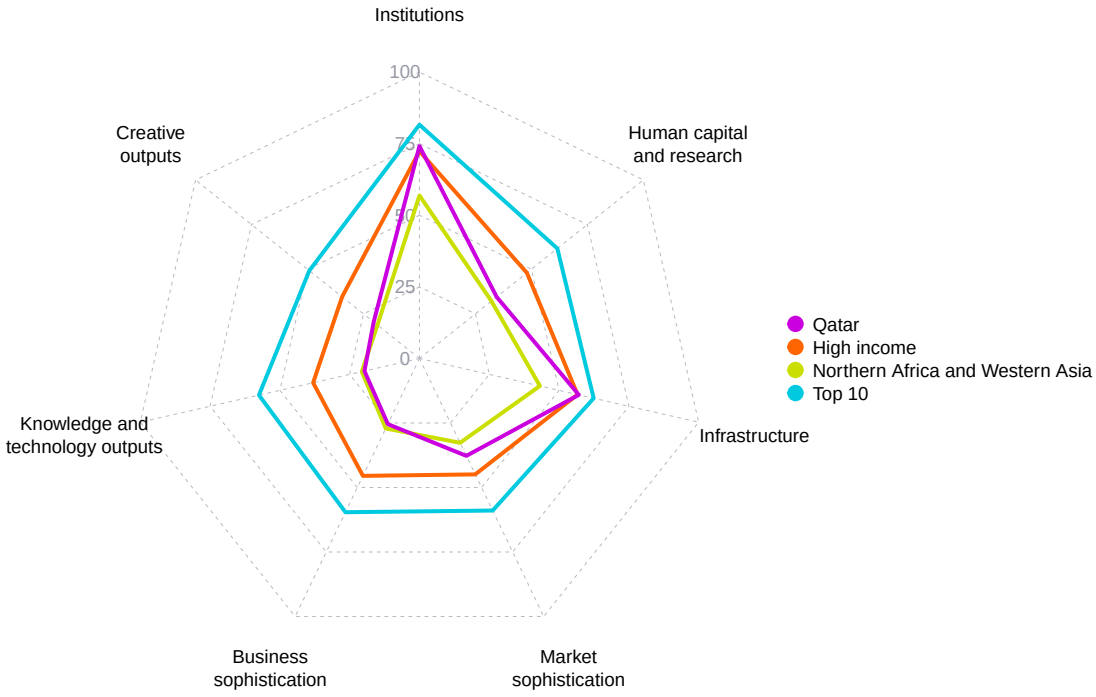
Qatar produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



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

The seven GII pillar scores for Qatar



High-income group economies

Qatar performs above the high-income group average in two pillars, namely: Institutions; and, Infrastructure.

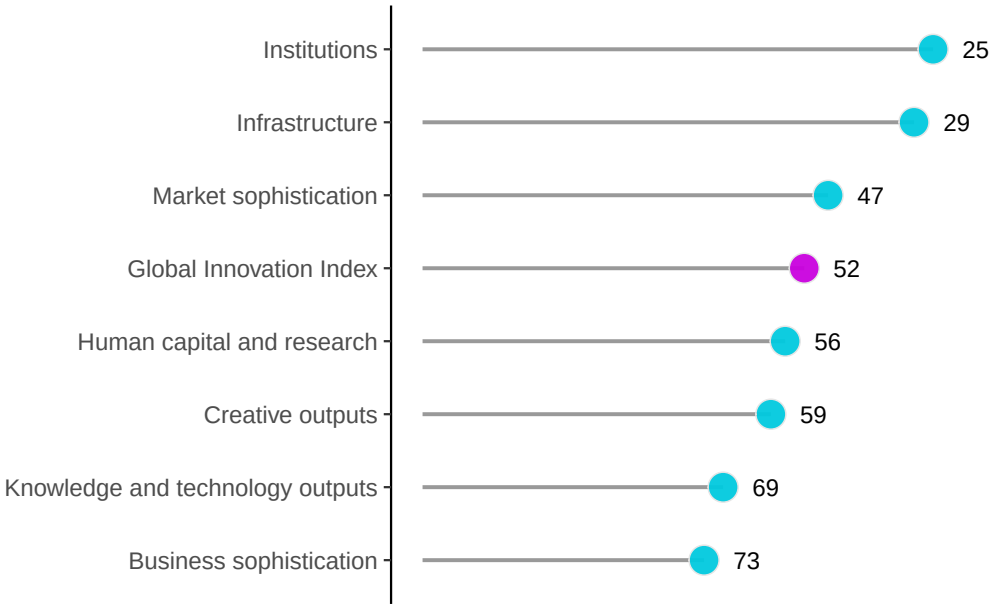
Northern Africa and Western Asia

Qatar performs above the regional average in five pillars, namely: Institutions; Human capital and research; Infrastructure; Market sophistication; and, Creative outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Qatar performs best in Institutions and its weakest performance is in Business sophistication.

The seven GII pillar ranks for Qatar



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

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Qatar

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.3.1	Policies for doing business	12	2.3.3	Global corporate R&D investors, top 3, mn USD	38
1.3.2	Entrepreneurship policies and culture	5	3.3.1	GDP/unit of energy use	112
2.2.3	Tertiary inbound mobility, %	1	4.2.3	Venture capital recipients, deals/bn PPP$ GDP	98
3.1.1	ICT access	11	4.2.4	Venture capital received, value, % GDP	96
3.2.1	Electricity output, GWh/mn pop.	5	5.2.3	GERD financed by abroad, % GDP	90
4.1.2	Domestic credit to private sector, % GDP	15	5.3.1	Intellectual property payments, % total trade	122
5.2.1	University-industry R&D collaboration	12	5.3.4	FDI net inflows, % GDP	125
5.3.3	ICT services imports, % total trade	8	6.3.1	Intellectual property receipts, % total trade	113
6.2.2	New businesses/th pop. 15–64	23	7.1.2	Trademarks by origin/bn PPP$ GDP	118
7.1.3	Global brand value, top 5,000, % GDP	19	7.2.5	Creative goods exports, % total trade	112

GII 2022 rank

Qatar

52

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
67	38	High	NAWA	2.9	273.9	100,037

		Score/ Value	Rank	
Institutions		**74.1**	**25**	
1.1	**Political environment**	72.8	36	
1.1.1	Political and operational stability*	76.4	37	
1.1.2	Government effectiveness*	69.3	34	
1.2	**Regulatory environment**	69.5	52	◇
1.2.1	Regulatory quality*	66.2	37	
1.2.2	Rule of law*	72.0	28	
1.2.3	Cost of redundancy dismissal	23.2	101	◇
1.3	**Business environment**	80.1	7	● ◆
1.3.1	Policies for doing business†	74.5	12	●
1.3.2	Entrepreneurship policies and culture*	85.7	5	● ◆
Human capital and research		**34.5**	**56**	◇
2.1	**Education**	45.9	76	◇
2.1.1	Expenditure on education, % GDP	3.2	103	◇
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years	12.6	86	◇
2.1.4	PISA scales in reading, maths and science	413.5	60	◇
2.1.5	Pupil-teacher ratio, secondary	11.5	45	
2.2	**Tertiary education**	50.3	10	●
2.2.1	Tertiary enrolment, % gross	20.8	96	◇
2.2.2	Graduates in science and engineering, %	21.1	60	
2.2.3	Tertiary inbound mobility, %	37.5	1	● ◆
2.3	**Research and development (R&D)**	7.2	65	◇
2.3.1	Researchers, FTE/mn pop.	577.3	64	◇
2.3.2	Gross expenditure on R&D, % GDP	0.5	60	◇
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38	○ ◇
2.3.4	QS university ranking, top 3*	13.6	58	
Infrastructure		**57.1**	**29**	
3.1	**Information and communication technologies (ICTs)**	75.4	60	◇
3.1.1	ICT access*	95.1	11	●
3.1.2	ICT use*	75.2	41	
3.1.3	Government's online service*	65.9	76	◇
3.1.4	E-participation*	65.5	77	◇
3.2	**General infrastructure**	76.2	1	● ◆
3.2.1	Electricity output, GWh/mn pop.	17,621.9	5	● ◆
3.2.2	Logistics performance*	66.0	29	
3.2.3	Gross capital formation, % GDP	n/a	n/a	
3.3	**Ecological sustainability**	19.6	97	◇
3.3.1	GDP/unit of energy use	6.1	112	○ ◇
3.3.2	Environmental performance*	33.0	97	◇
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	2.1	47	
Market sophistication		**37.7**	**47**	
4.1	**Credit**	49.5	19	●
4.1.1	Finance for startups and scaleups*	46.3	21	
4.1.2	Domestic credit to private sector, % GDP	138.9	15	●
4.1.3	Loans from microfinance institutions, % GDP	n/a	n/a	
4.2	**Investment**	10.6	54	
4.2.1	Market capitalization, % GDP	98.1	16	
4.2.2	Venture capital investors, deals/bn PPP$ GDP	0.0	48	
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	0.0	98	○ ◇
4.2.4	Venture capital received, value, % GDP	0.0	96	○
4.3	**Trade, diversification, and market scale**	53.0	76	
4.3.1	Applied tariff rate, weighted avg., %	3.5	78	◇
4.3.2	Domestic industry diversification	76.1	74	
4.3.3	Domestic market scale, bn PPP$	273.9	60	

		Score/ Value	Rank	
Business sophistication		**25.4**	**73**	◇
5.1	**Knowledge workers**	15.5	110	◇
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	0.1	67	◇
5.1.4	GERD financed by business, %	9.3	76	◇
5.1.5	Females employed w/advanced degrees, %	5.3	92	◇
5.2	**Innovation linkages**	28.0	45	
5.2.1	University-industry R&D collaboration†	66.8	12	●
5.2.2	State of cluster development and depth†	54.8	38	
5.2.3	GERD financed by abroad, % GDP	0.0	90	○ ◇
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.1	30	
5.2.5	Patent families/bn PPP$ GDP	0.0	78	◇
5.3	**Knowledge absorption**	32.9	56	
5.3.1	Intellectual property payments, % total trade	0.0	122	○ ◇
5.3.2	High-tech imports, % total trade	7.4	83	
5.3.3	ICT services imports, % total trade	4.5	8	● ◆
5.3.4	FDI net inflows, % GDP	−1.5	125	○
5.3.5	Research talent, % in businesses	16.1	56	◇
Knowledge and technology outputs		**19.7**	**69**	◇
6.1	**Knowledge creation**	8.6	83	◇
6.1.1	Patents by origin/bn PPP$ GDP	0.3	85	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.1	64	
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific and technical articles/bn PPP$ GDP	13.4	73	◇
6.1.5	Citable documents H-index	11.3	66	
6.2	**Knowledge impact**	32.1	51	
6.2.1	Labor productivity growth, %	0.1	87	
6.2.2	New businesses/th pop. 15–64	6.3	23	●
6.2.3	Software spending, % GDP	0.3	33	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	3.5	69	
6.2.5	High-tech manufacturing, %	37.7	31	
6.3	**Knowledge diffusion**	18.4	78	◇
6.3.1	Intellectual property receipts, % total trade	0.0	113	○ ◇
6.3.2	Production and export complexity	31.8	79	◇
6.3.3	High-tech exports, % total trade	1.0	73	◇
6.3.4	ICT services exports, % total trade	3.4	34	
Creative outputs		**20.4**	**59**	◇
7.1	**Intangible assets**	34.8	50	
7.1.1	Intangible asset intensity, top 15, %	42.2	61	
7.1.2	Trademarks by origin/bn PPP$ GDP	4.9	118	○ ◇
7.1.3	Global brand value, top 5,000, % GDP	106.5	19	●
7.1.4	Industrial designs by origin/bn PPP$ GDP	n/a	n/a	
7.2	**Creative goods and services**	10.1	82	◇
7.2.1	Cultural and creative services exports, % total trade	0.4	60	
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	11.7	31	◇
7.2.4	Printing and other media, % manufacturing	0.8	59	
7.2.5	Creative goods exports, % total trade	0.0	112	○
7.3	**Online creativity**	2.0	86	◇
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	3.5	59	◇
7.3.2	Country-code TLDs/th pop. 15–69	2.5	65	◇
7.3.3	GitHub commit pushes received/mn pop. 15–69	1.7	90	◇
7.3.4	Mobile app creation/bn PPP$ GDP	0.5	84	

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 Qatar.

Missing data for Qatar

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2018	UNESCO Institute for Statistics
3.2.3	Gross capital formation, % GDP	n/a	2021	International Monetary Fund
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
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2020	World Intellectual Property Organization
7.1.4	Industrial designs 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

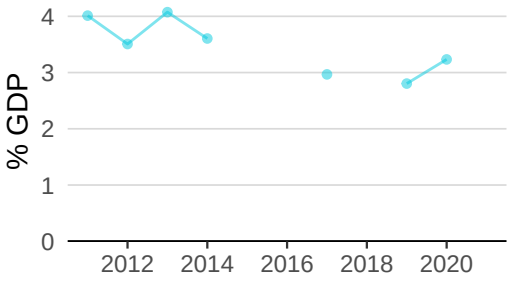
Outdated data for Qatar

Code	Indicator name	Economy year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	2018	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2018	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	2019	2021	Refinitiv
4.2.4	Venture capital received, value, % GDP	2019	2021	Refinitiv
5.1.1	Knowledge-intensive employment, %	2020	2021	International Labour Organization
5.1.3	GERD performed by business, % GDP	2018	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	2018	2019	UNESCO Institute for Statistics
5.1.5	Females employed w/advanced degrees, %	2020	2021	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2018	2019	UNESCO Institute for Statistics
5.3.1	Intellectual property payments, % total trade	2015	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2018	2020	UNESCO Institute for Statistics
6.2.2	New businesses/th pop. 15–64	2018	2020	World Bank, Enterpreneurship Database
6.3.1	Intellectual property receipts, % total trade	2015	2020	World Trade Organization and United Nations Conference on Trade and Development

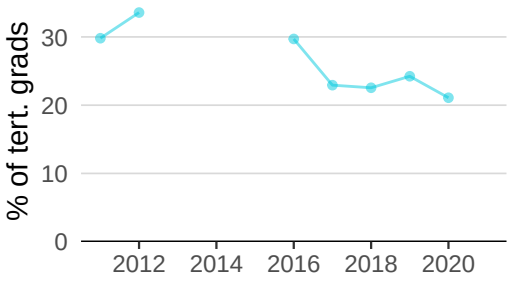
QATAR'S INNOVATION SYSTEM

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

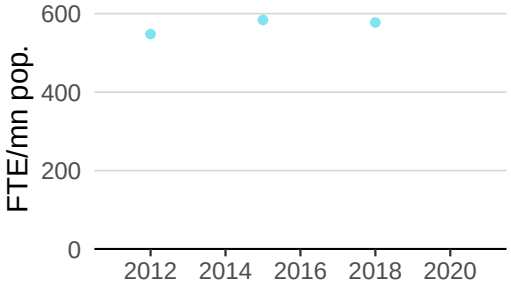
Innovation inputs



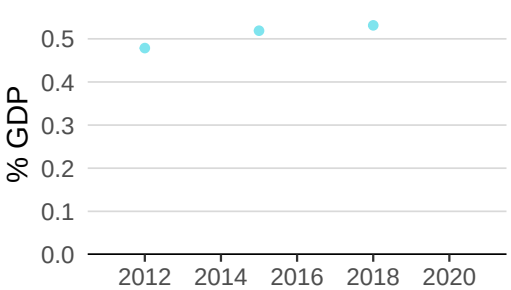
2.1.1 Expenditure on education was equal to 3.2% GDP in 2020–up by 15 percentage points from the year prior–and equivalent to an indicator rank of 103.



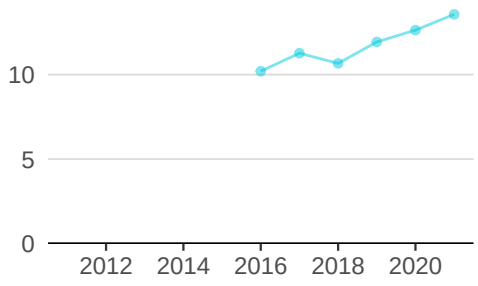
2.2.2 Graduates in science and engineering was equal to 21.1% of tert. grads in 2020–down by 13 percentage points from the year prior–and equivalent to an indicator rank of 60.



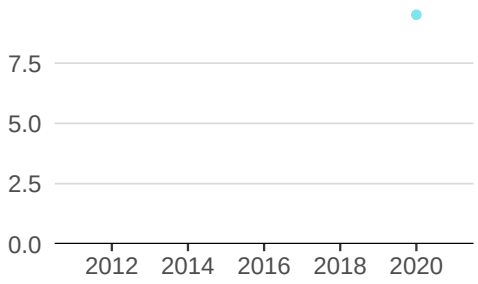
2.3.1 Researchers was equal to 577.3 FTE/mn pop. in 2018 and equivalent to an indicator rank of 64.



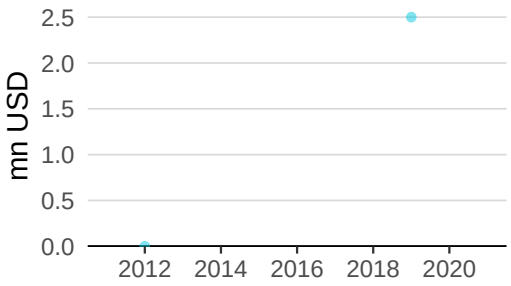
2.3.2 Gross expenditure on R&D was equal to 0.5% GDP in 2018 and equivalent to an indicator rank of 60.



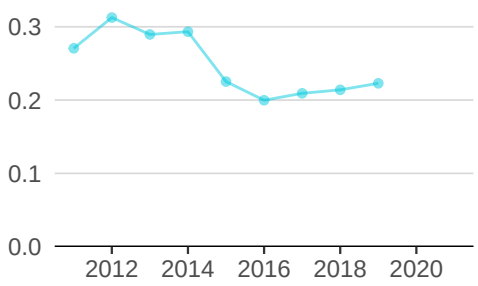
2.3.4 QS university ranking was equal to 13.6 in 2021–up by 7 percentage points from the year prior–and equivalent to an indicator rank of 58.



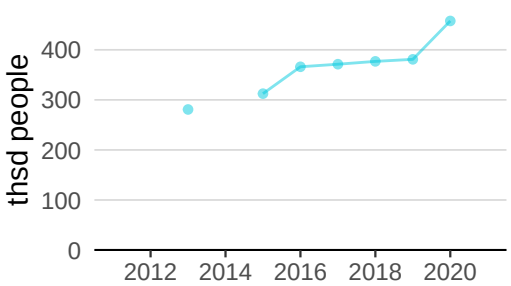
3.1.1 ICT access was equal to 9.5 in 2020 and equivalent to an indicator rank of 11.



4.2.4 Venture capital received was equal to 2.5 mn USD in 2019 and equivalent to an indicator rank of 96.

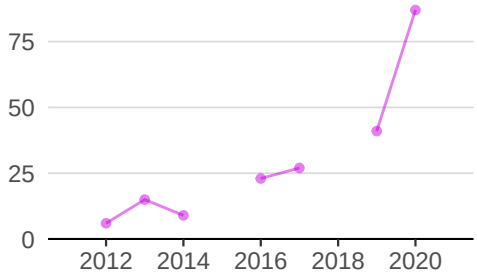


4.3.2 Domestic industry diversification was equal to 0.2 in 2019–up by 4 percentage points from the year prior–and equivalent to an indicator rank of 74.

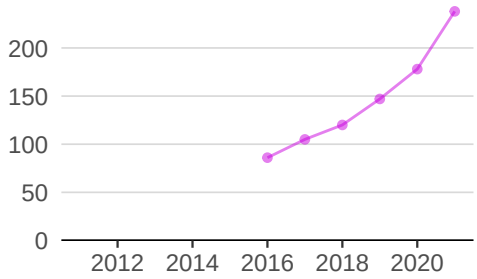


5.1.1 Knowledge-intensive employment was equal to 457.6 thsd people in 2020–up by 20 percentage points from the year prior–and equivalent to an indicator rank of 70.

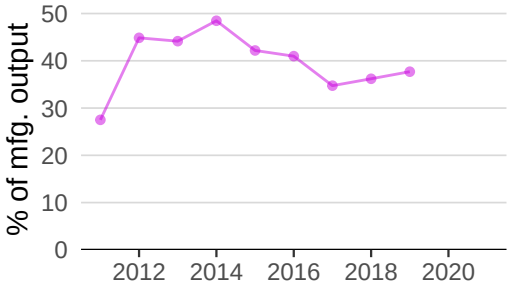
Innovation outputs



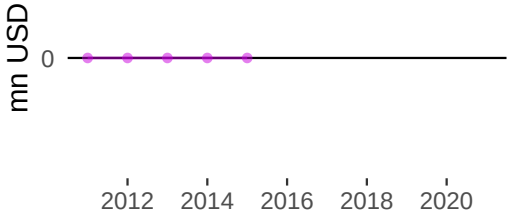
6.1.1 Patents by origin was equal to 87.0 in 2020–up by 112 percentage points from the year prior–and equivalent to an indicator rank of 85.



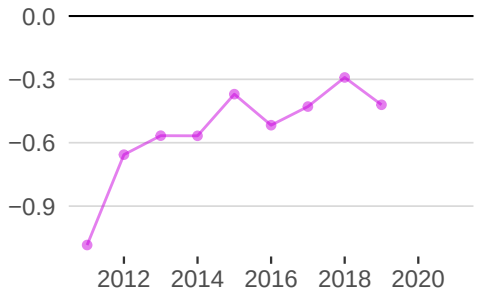
6.1.5 Citable documents H-index was equal to 238.0 in 2021–up by 34 percentage points from the year prior–and equivalent to an indicator rank of 66.



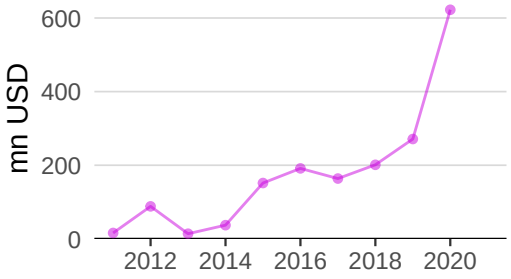
6.2.5 High-tech manufacturing was equal to 37.7% of mfg. output in 2019–up by 4 percentage points from the year prior–and equivalent to an indicator rank of 31.



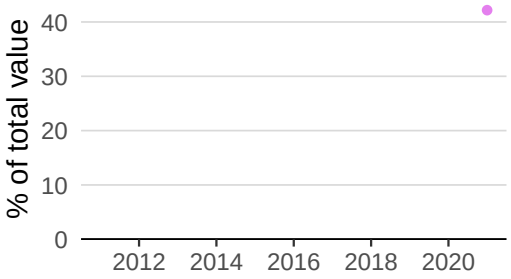
6.3.1 Intellectual property receipts was equal to 0.0 mn USD in 2015–effectively unchanged from the year prior–and equivalent to an indicator rank of 113.



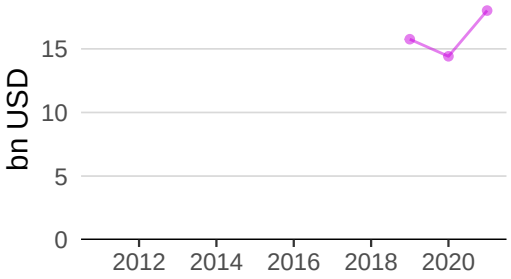
6.3.2 Production and export complexity was equal to -0.4 in 2019–down by 44 percentage points from the year prior–and equivalent to an indicator rank of 79.



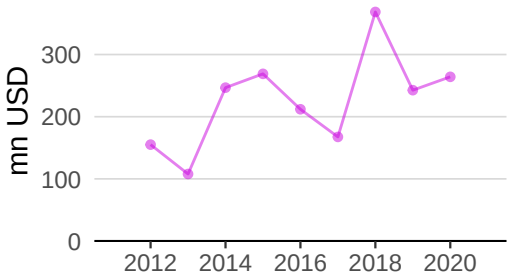
6.3.3 High-tech exports was equal to 622.3 mn USD in 2020–up by 129 percentage points from the year prior–and equivalent to an indicator rank of 73.



7.1.1 Intangible asset intensity was equal to 42.2% of total value in 2021 and equivalent to an indicator rank of 61.



7.1.3 Global brand value was equal to 18.0 bn USD in 2021–up by 25 percentage points from the year prior–and equivalent to an indicator rank of 19.



7.2.1 Cultural and creative services exports was equal to 264.1 mn USD in 2020–up by 9 percentage points from the year prior–and equivalent to an indicator rank of 60.

QATAR'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank

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
QATAR UNIVERSITY	40.7	224

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
QATAR NATIONAL BANK	1
INDUSTRIES QATAR	2
OOREDOO QPSC	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

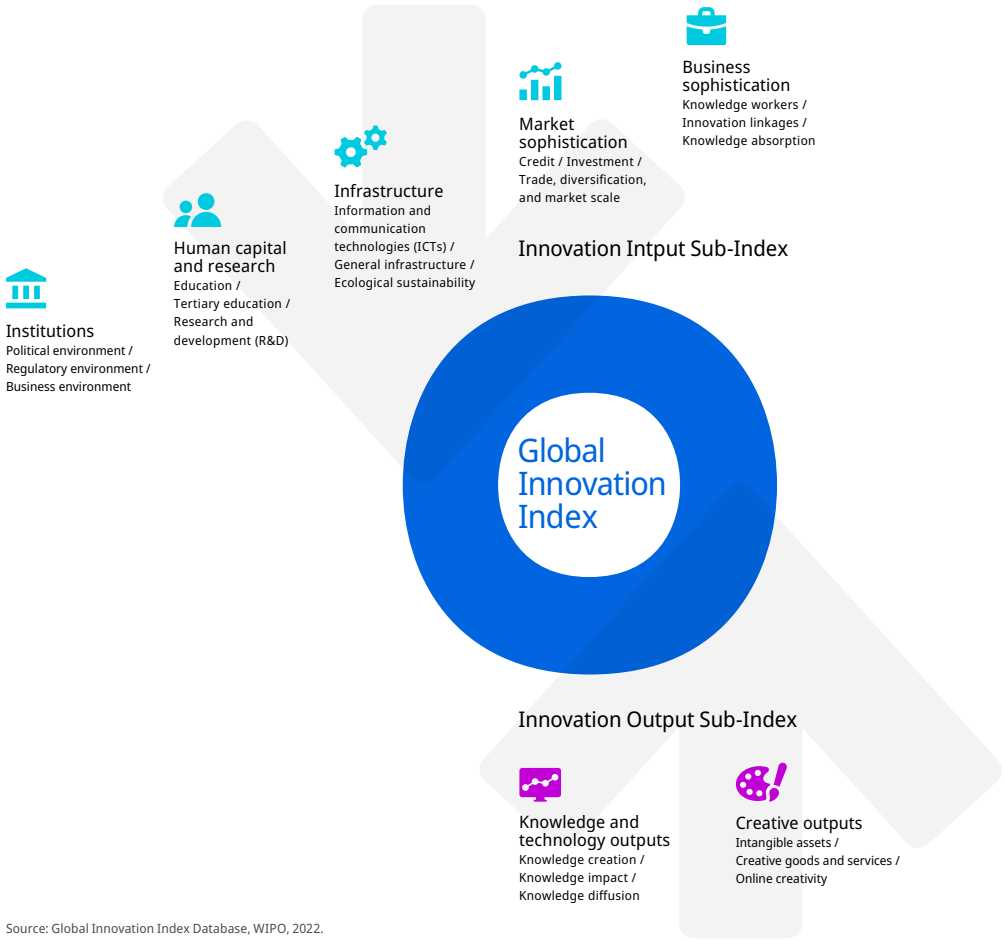
Brand	Industry	Rank
QNB	Banking	1
OOREDOO	Telecoms	2
QATAR AIRWAYS	Airlines	3

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.



Source: Global Innovation Index Database, WIPO, 2022.

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.