Global Innovation Index 2022

IRAQ

131st Iraq ranks 131st 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 Iraq 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 Iraq in the GII 2022 is between ranks 127 and 132.

Rankings for Iraq (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020			
2021			
2022	131	130	127

- Iraq performs better in innovation outputs than innovation inputs in 2022.
- This year Iraq ranks 130th in innovation inputs and was not ranked last year.
- As for innovation outputs, Iraq ranks 127th .

36th Iraq ranks 36th among the 36 upper-middle-income group economies.

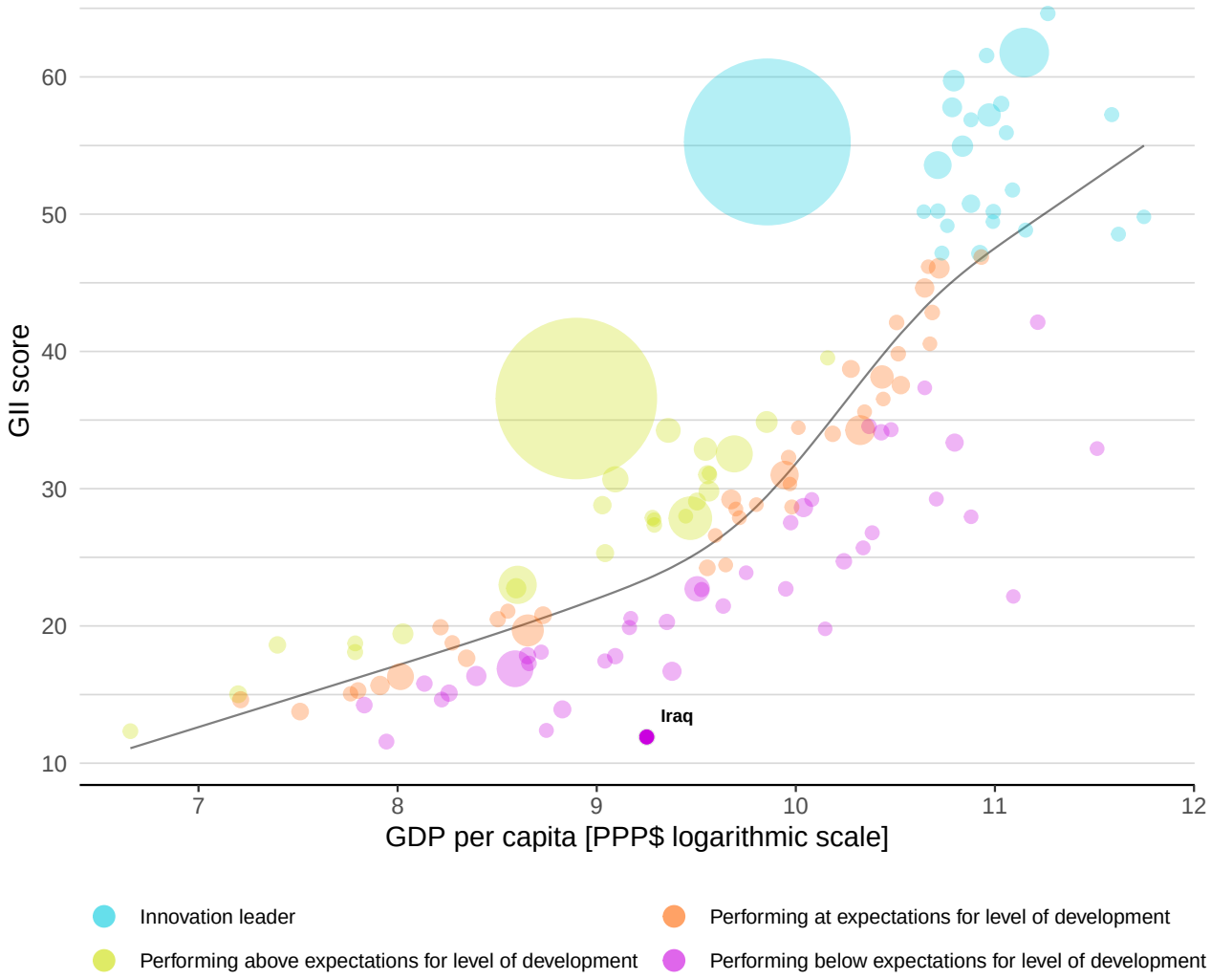
19th Iraq ranks 19th among the 19 economies in Northern Africa and Western Asia.

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

The positive relationship between innovation and development

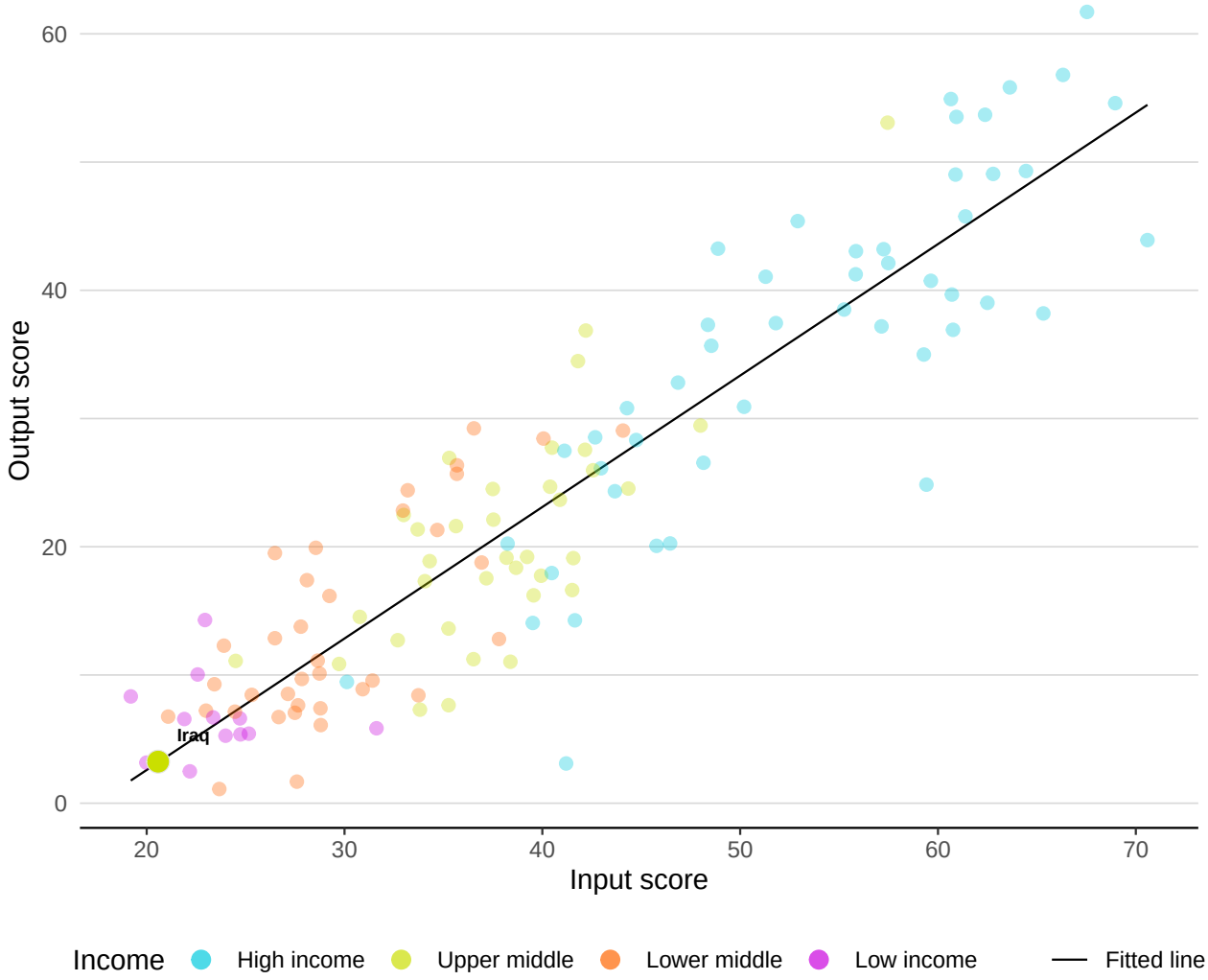


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

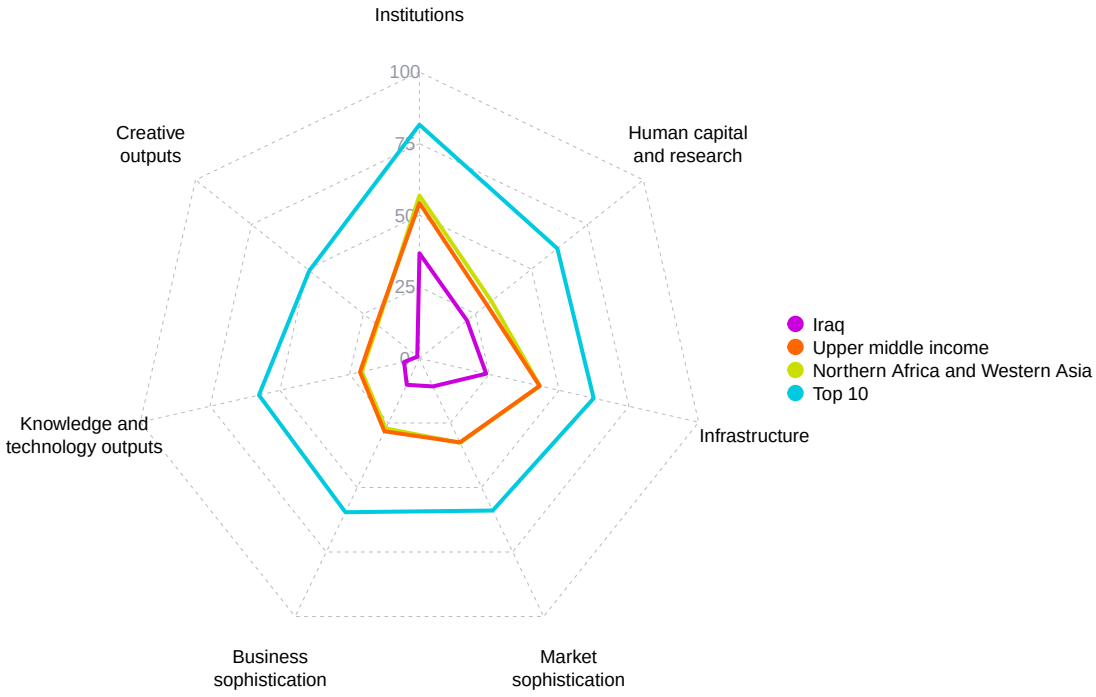
Iraq produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance



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

The seven GII pillar scores for Iraq



Upper-middle-income group economies

Iraq performs below the upper-middle-income group average in all GII pillars.

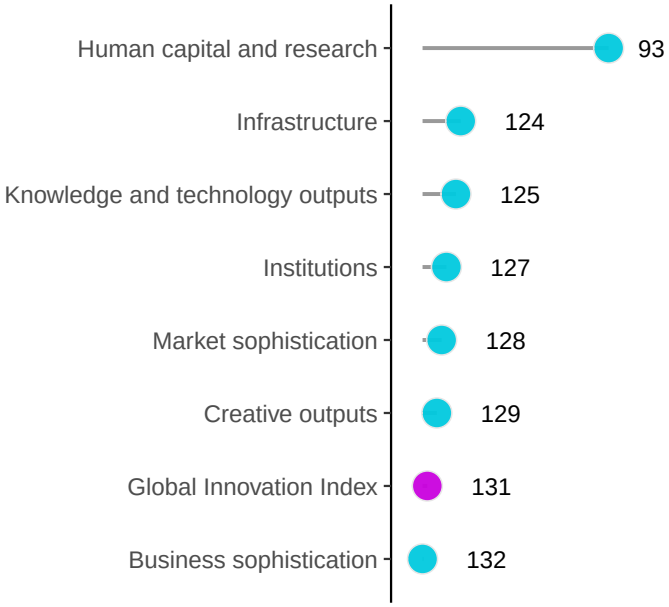
Northern Africa and Western Asia

Iraq performs below the regional average in all GII pillars.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Iraq performs best in Human capital and research and its weakest performance is in Business sophistication.

The seven GII pillar ranks for Iraq



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

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Iraq

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redundancy dismissal	34	1.1.1	Political and operational stability	131
2.1.1	Expenditure on education, % GDP	50	1.1.2	Government effectiveness	131
2.3.4	QS university ranking, top 3	70	1.2.2	Rule of law	131
3.1.1	ICT access	86	2.3.3	Global corporate R&D investors, top 3, mn USD	38
3.2.1	Electricity output, GWh/mn pop.	73	4.1.2	Domestic credit to private sector, % GDP	127
4.3.3	Domestic market scale, bn PPP$	48	5.2.3	GERD financed by abroad, % GDP	97
5.1.1	Knowledge-intensive employment, %	67	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	128
6.1.1	Patents by origin/bn PPP$ GDP	49	6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	130
6.1.4	Scientific and technical articles/bn PPP$ GDP	81	7.1.3	Global brand value, top 5,000, % GDP	77
6.1.5	Citable documents H-index	89	7.2.4	Printing and other media, % manufacturing	97

GII 2022 rank

Iraq

131

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
127	130	Upper middle	NAWA	41.2	428.9	10,415

		Score/ Value	Rank
Institutions		**36.7**	**127** ◇
1.1	**Political environment**	23.3	131 ○ ◇
1.1.1	Political and operational stability*	25.5	131 ○ ◇
1.1.2	Government effectiveness*	21.1	131 ○ ◇
1.2	**Regulatory environment**	50.1	106 ◇
1.2.1	Regulatory quality*	10.6	129 ◇
1.2.2	Rule of law*	0.6	131 ○ ◇
1.2.3	Cost of redundancy dismissal	10.7	34 ●
1.3	**Business environment**	n/a	[n/a]
1.3.1	Policies for doing business†	n/a	n/a
1.3.2	Entrepreneurship policies and culture*	n/a	n/a
Human capital and research		**21.2**	**[93]**
2.1	**Education**	40.7	[95]
2.1.1	Expenditure on education, % GDP	4.7	50 ●
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a
2.1.3	School life expectancy, years	n/a	n/a
2.1.4	PISA scales in reading, maths and science	n/a	n/a
2.1.5	Pupil-teacher ratio, secondary	n/a	n/a
2.2	**Tertiary education**	n/a	[n/a]
2.2.1	Tertiary enrolment, % gross	n/a	n/a
2.2.2	Graduates in science and engineering, %	n/a	n/a
2.2.3	Tertiary inbound mobility, %	n/a	n/a
2.3	**Research and development (R&D)**	1.8	88 ●
2.3.1	Researchers, FTE/mn pop.	141.4	87 ◇
2.3.2	Gross expenditure on R&D, % GDP	0.0	110 ◇
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38 ○ ◇
2.3.4	QS university ranking, top 3*	4.3	70 ●
Infrastructure		**23.9**	**124** ◇
3.1	**Information and communication technologies (ICTs)**	47.0	111 ◇
3.1.1	ICT access*	80.2	86 ●
3.1.2	ICT use*	43.2	99 ◇
3.1.3	Government's online service*	33.5	121 ◇
3.1.4	E-participation*	30.9	122 ◇
3.2	**General infrastructure**	8.9	130 ○ ◇
3.2.1	Electricity output, GWh/mn pop.	2,437.5	73 ●
3.2.2	Logistics performance*	6.0	121 ◇
3.2.3	Gross capital formation, % GDP	n/a	n/a
3.3	**Ecological sustainability**	15.8	123 ◇
3.3.1	GDP/unit of energy use	7.8	96
3.3.2	Environmental performance*	27.8	123 ◇
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.1	120
Market sophistication		**10.8**	**[128]**
4.1	**Credit**	1.2	[131]
4.1.1	Finance for startups and scaleups*	n/a	n/a
4.1.2	Domestic credit to private sector, % GDP	8.6	127 ○ ◇
4.1.3	Loans from microfinance institutions, % GDP	n/a	n/a
4.2	**Investment**	0.5	[112]
4.2.1	Market capitalization, % GDP	n/a	n/a
4.2.2	Venture capital investors, deals/bn PPP$ GDP	n/a	n/a
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	0.0	97
4.2.4	Venture capital received, value, % GDP	0.0	100
4.3	**Trade, diversification, and market scale**	30.8	114 ◇
4.3.1	Applied tariff rate, weighted avg., %	n/a	n/a
4.3.2	Domestic industry diversification	52.1	99 ◇
4.3.3	Domestic market scale, bn PPP$	428.9	48 ●

		Score/ Value	Rank
Business sophistication		**10.2**	**132** ○ ◇
5.1	**Knowledge workers**	16.1	109 ◇
5.1.1	Knowledge-intensive employment, %	22.1	67 ●
5.1.2	Firms offering formal training, %	22.2	69
5.1.3	GERD performed by business, % GDP	0.0	91
5.1.4	GERD financed by business, %	1.8	89 ◇
5.1.5	Females employed w/advanced degrees, %	7.2	87 ◇
5.2	**Innovation linkages**	0.3	[132]
5.2.1	University-industry R&D collaboration†	n/a	n/a
5.2.2	State of cluster development and depth†	n/a	n/a
5.2.3	GERD financed by abroad, % GDP	0.0	97 ○ ◇
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	128 ○ ◇
5.2.5	Patent families/bn PPP$ GDP	0.0	99
5.3	**Knowledge absorption**	14.3	132 ○ ◇
5.3.1	Intellectual property payments, % total trade	0.0	116 ◇
5.3.2	High-tech imports, % total trade	n/a	n/a
5.3.3	ICT services imports, % total trade	0.8	91
5.3.4	FDI net inflows, % GDP	−1.8	126 ◇
5.3.5	Research talent, % in businesses	0.8	79 ◇
Knowledge and technology outputs		**5.5**	**[125]**
6.1	**Knowledge creation**	11.1	[71]
6.1.1	Patents by origin/bn PPP$ GDP	1.6	49 ●
6.1.2	PCT patents by origin/bn PPP$ GDP	n/a	n/a
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a
6.1.4	Scientific and technical articles/bn PPP$ GDP	10.7	81 ●
6.1.5	Citable documents H-index	6.3	89 ●
6.2	**Knowledge impact**	4.6	123 ◇
6.2.1	Labor productivity growth, %	−4.3	116 ◇
6.2.2	New businesses/th pop. 15–64	0.1	119
6.2.3	Software spending, % GDP	n/a	n/a
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	0.3	130 ○
6.2.5	High-tech manufacturing, %	7.0	94 ◇
6.3	**Knowledge diffusion**	0.9	[132]
6.3.1	Intellectual property receipts, % total trade	0.0	108 ◇
6.3.2	Production and export complexity	n/a	n/a
6.3.3	High-tech exports, % total trade	n/a	n/a
6.3.4	ICT services exports, % total trade	0.2	122
Creative outputs		**1.0**	**129** ◇
7.1	**Intangible assets**	0.7	129 ◇
7.1.1	Intangible asset intensity, top 15, %	n/a	n/a
7.1.2	Trademarks by origin/bn PPP$ GDP	4.2	124 ◇
7.1.3	Global brand value, top 5,000, % GDP	0.0	77 ○ ◇
7.1.4	Industrial designs by origin/bn PPP$ GDP	0.2	105
7.2	**Creative goods and services**	2.3	[111]
7.2.1	Cultural and creative services exports, % total trade	0.1	80
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	97 ○ ◇
7.2.5	Creative goods exports, % total trade	n/a	n/a
7.3	**Online creativity**	0.2	119 ◇
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	0.2	115
7.3.2	Country-code TLDs/th pop. 15–69	0.0	128
7.3.3	GitHub commit pushes received/mn pop. 15–69	0.7	108 ◇
7.3.4	Mobile app creation/bn PPP$ GDP	0.0	104

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 Iraq.

Missing data for Iraq

Code	Indicator name	Economy year	Model year	Source
1.3.1	Policies for doing business	n/a	2021	World Economic Forum, Executive Opinion Survey (EOS)
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2018	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2019	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.1.5	Pupil-teacher ratio, secondary	n/a	2019	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	n/a	2019	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	n/a	2019	UNESCO Institute for Statistics
3.2.3	Gross capital formation, % GDP	n/a	2021	International Monetary Fund
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)
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges
4.2.2	Venture capital investors, deals/bn PPP$ GDP	n/a	2021	Refinitiv
4.3.1	Applied tariff rate, weighted avg., %	n/a	2020	World Bank
5.2.1	University-industry R&D collaboration	n/a	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development and depth	n/a	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.3.2	High-tech imports, % total trade	n/a	2020	United Nations Comtrade Database
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
6.2.3	Software spending, % GDP	n/a	2021	IHS Markit
6.3.2	Production and export complexity	n/a	2019	Harvard University, Growth Lab
6.3.3	High-tech exports, % total trade	n/a	2020	United Nations Comtrade Database
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
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

Code	Indicator name	Economy year	Model year	Source
7.2.5	Creative goods exports, % total trade	n/a	2020	United Nations Comtrade Database

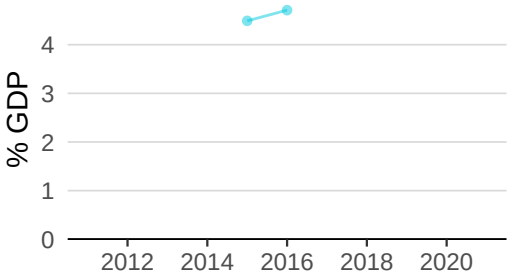
Outdated data for Iraq

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	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	2018	2020	International Monetary Fund
5.1.1	Knowledge-intensive employment, %	2012	2021	International Labour Organization
5.1.2	Firms offering formal training, %	2011	2019	World Bank Enterprise Surveys
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, %	2012	2021	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2018	2019	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	2018	2020	UNESCO Institute for Statistics
6.2.2	New businesses/th pop. 15–64	2016	2020	World Bank, Enterpreneurship Database
7.1.2	Trademarks by origin/bn PPP$ GDP	2018	2020	World Intellectual Property Organization
7.1.4	Industrial designs by origin/bn PPP$ GDP	2018	2020	World Intellectual Property Organization

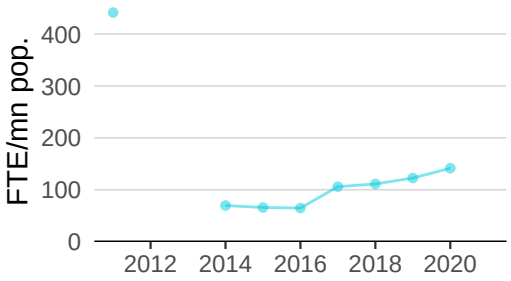
IRAQ'S INNOVATION SYSTEM

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

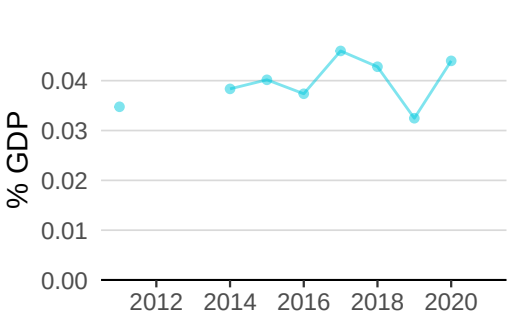
Innovation inputs



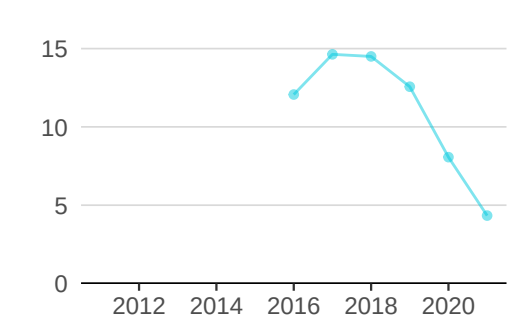
2.1.1 Expenditure on education was equal to 4.7% GDP in 2016–up by 5 percentage points from the year prior–and equivalent to an indicator rank of 50.



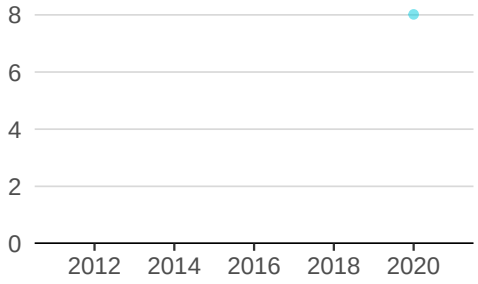
2.3.1 Researchers was equal to 141.4 FTE/mn pop. in 2020–up by 15 percentage points from the year prior–and equivalent to an indicator rank of 87.



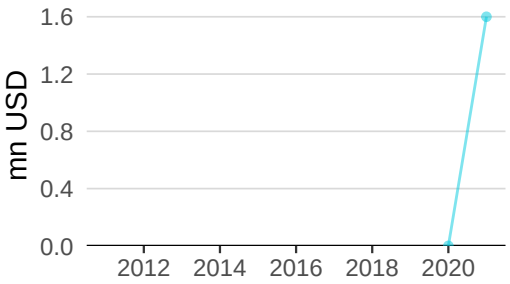
2.3.2 Gross expenditure on R&D was equal to 0.0% GDP in 2020–up by 35 percentage points from the year prior–and equivalent to an indicator rank of 110.



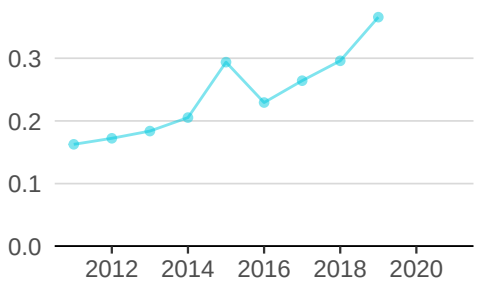
2.3.4 QS university ranking was equal to 4.3 in 2021–down by 46 percentage points from the year prior–and equivalent to an indicator rank of 70.



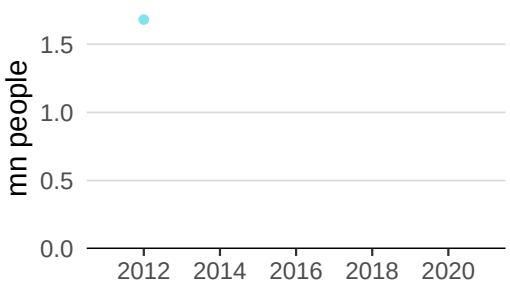
3.1.1 ICT access was equal to 8.0 in 2020 and equivalent to an indicator rank of 86.



4.2.4 Venture capital received was equal to 1.6 mn USD in 2021–up by Inf percentage points from the year prior–and equivalent to an indicator rank of 100.

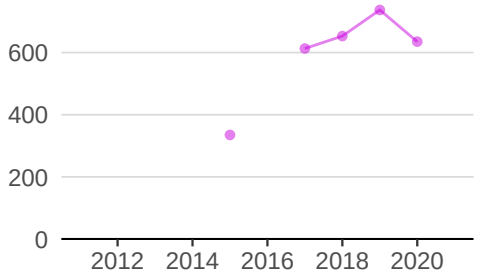


4.3.2 Domestic industry diversification was equal to 0.4 in 2019–up by 24 percentage points from the year prior–and equivalent to an indicator rank of 99.

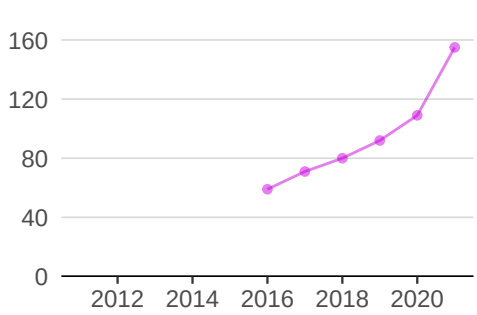


5.1.1 Knowledge-intensive employment was equal to 1.7 mn people in 2012 and equivalent to an indicator rank of 67.

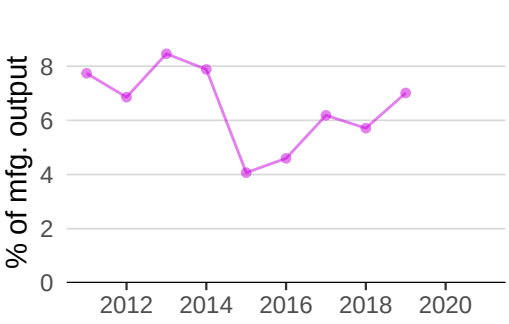
Innovation outputs



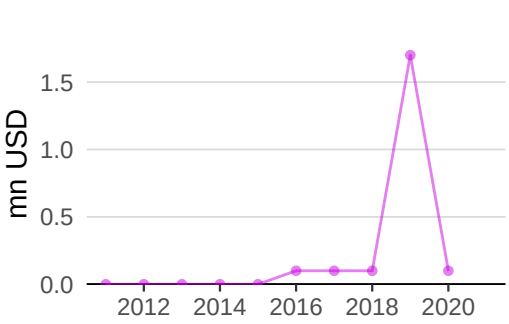
6.1.1 Patents by origin was equal to 635.0 in 2020–down by 14 percentage points from the year prior–and equivalent to an indicator rank of 49.



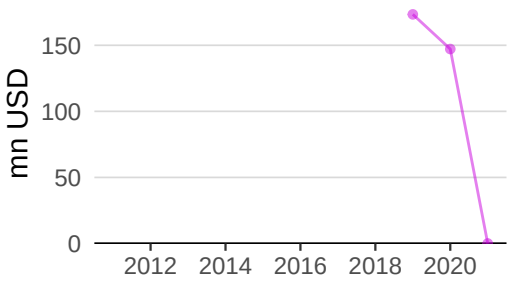
6.1.5 Citable documents H-index was equal to 155.0 in 2021–up by 42 percentage points from the year prior–and equivalent to an indicator rank of 89.



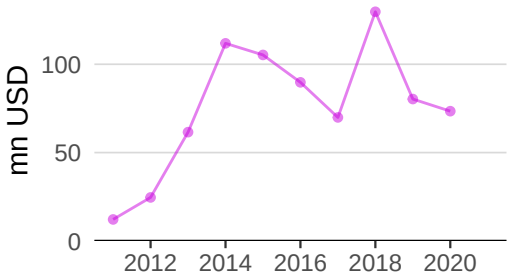
6.2.5 High-tech manufacturing was equal to 7.0% of mfg. output in 2019–up by 23 percentage points from the year prior–and equivalent to an indicator rank of 94.



6.3.1 Intellectual property receipts was equal to 0.1 mn USD in 2020–down by 94 percentage points from the year prior–and equivalent to an indicator rank of 108.



7.1.3 Global brand value was equal to 0.0 mn USD in 2021–down by 100 percentage points from the year prior–and equivalent to an indicator rank of 77.



7.2.1 Cultural and creative services exports was equal to 73.4 mn USD in 2020–down by 9 percentage points from the year prior–and equivalent to an indicator rank of 80.

IRAQ'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
UNIVERSITY OF BAGHDAD	13.0	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

No observations

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

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank

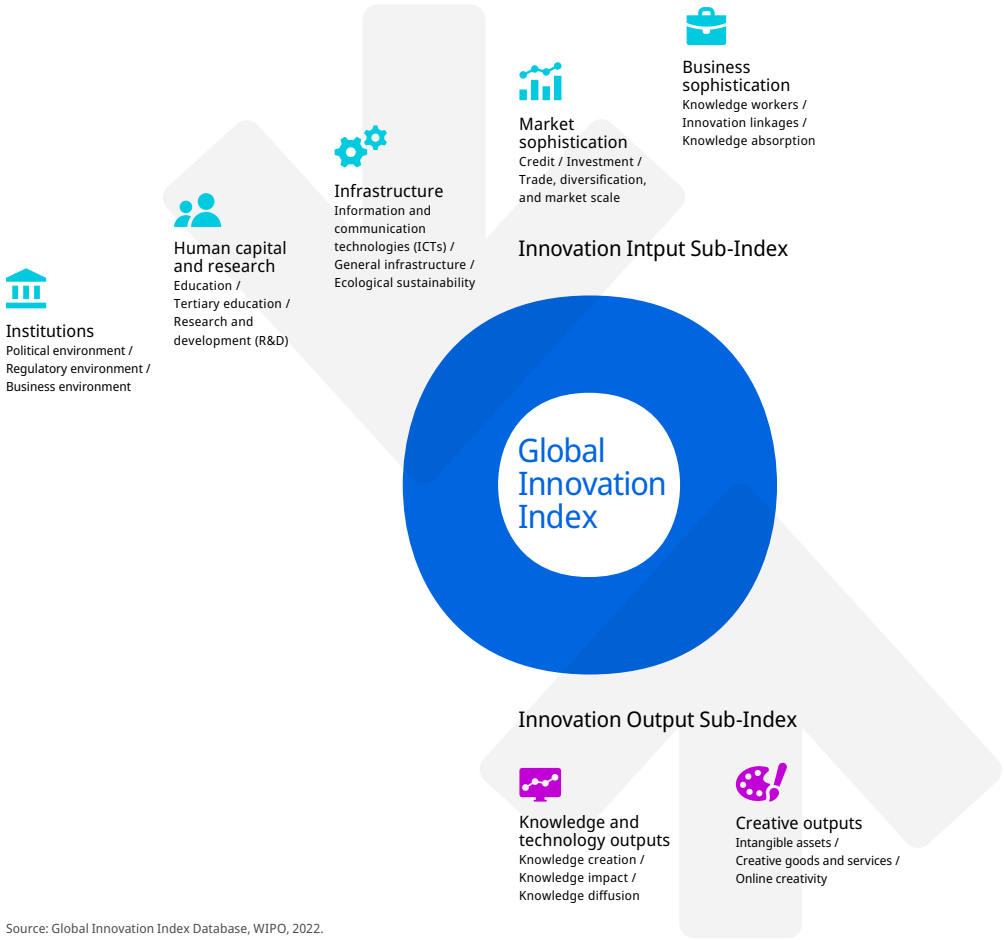
No observations

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

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.