

Global Innovation Index 2022



EGYPT

89th

Egypt ranks 89th 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 Egypt 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 Egypt in the GII 2022 is between ranks 85 and 93.

Rankings for Egypt (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	96	104	82
2021	94	102	86
2022	89	97	83

- Egypt performs better in innovation outputs than innovation inputs in 2022.
- This year Egypt ranks 97th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Egypt ranks 83rd. This position is higher than last year but lower than 2020.

14th

Egypt ranks 14th among the 36 lower-middle-income group economies.

15th

Egypt ranks 15th among the 19 economies in Northern Africa and Western Asia.

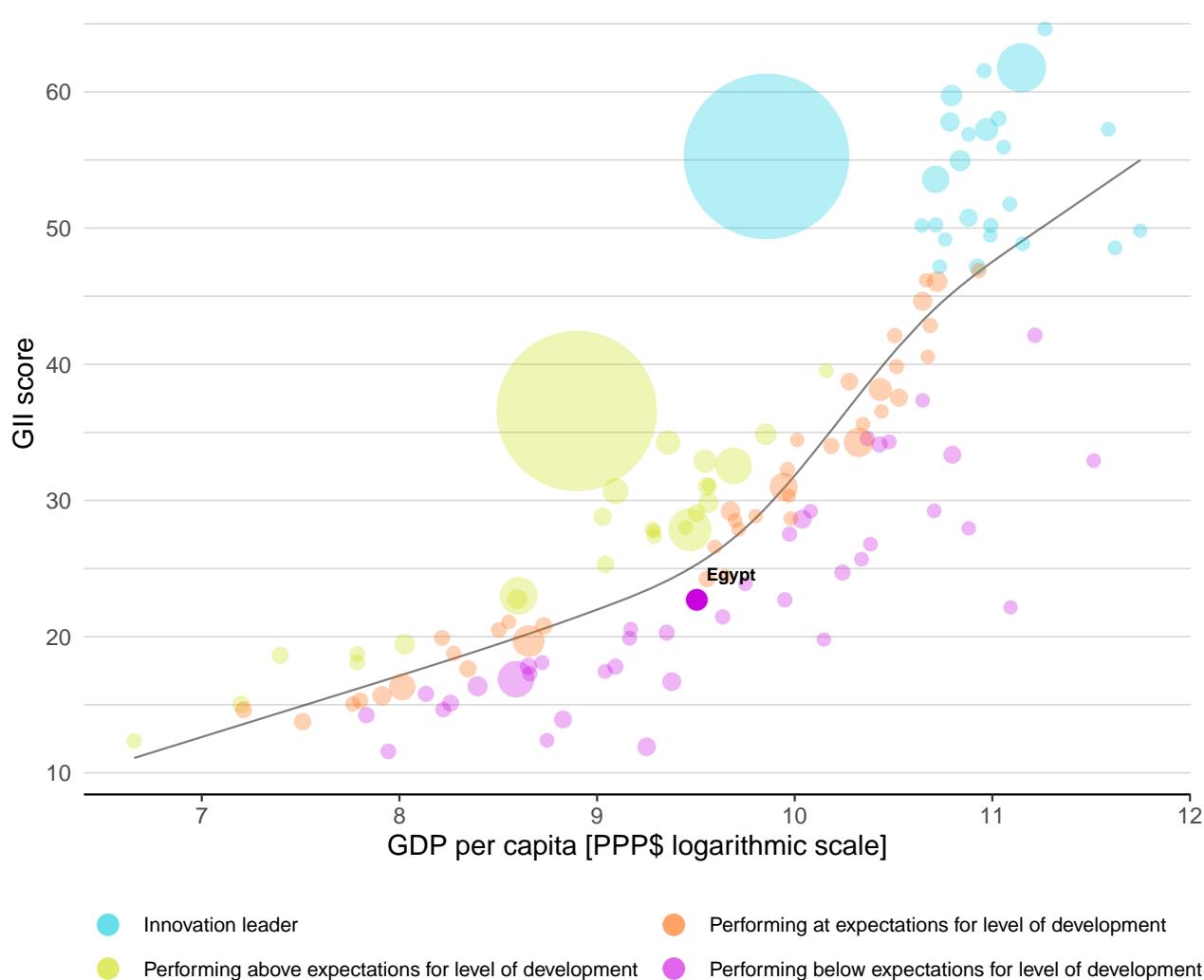


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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

The positive relationship between innovation and development



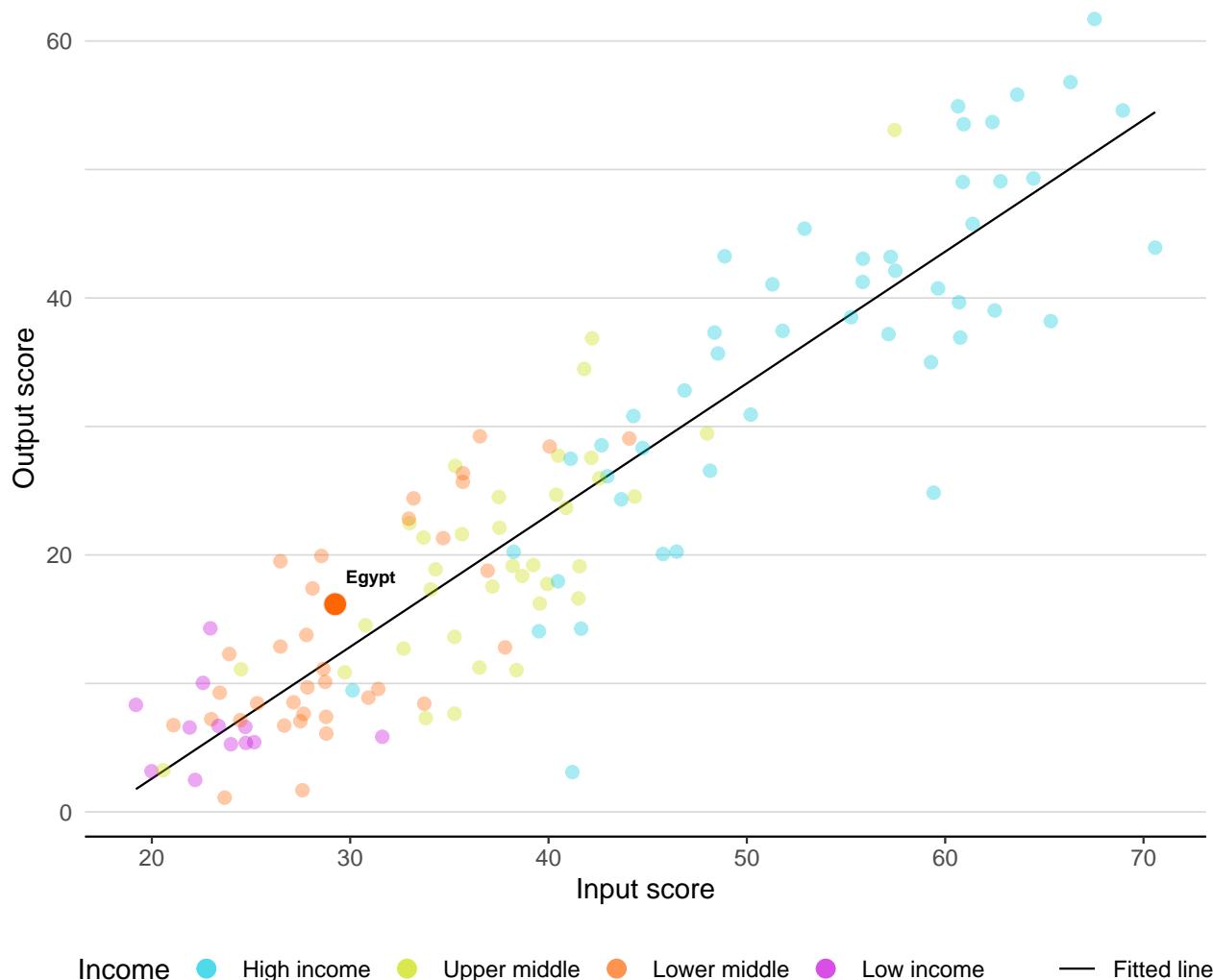


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance





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

The seven GII pillar scores for Egypt



Lower-middle-income group economies

Egypt performs above the lower-middle-income group average in three pillars, namely: Infrastructure; Knowledge and technology outputs; and, Creative outputs.

Northern Africa and Western Asia

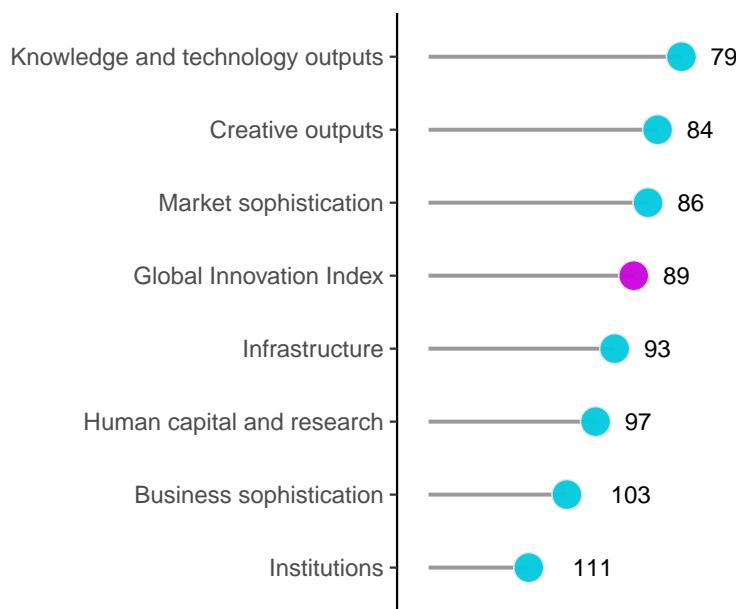
Egypt performs below the regional average in all GII pillars.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Egypt performs best in Knowledge and technology outputs and its weakest performance is in Institutions.

The seven GII pillar ranks for Egypt



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

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

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



INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Egypt

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.3.1	Policies for doing business	37	1.2.3	Cost of redundancy dismissal	126
2.3.2	Gross expenditure on R&D, % GDP	42	2.1.1	Expenditure on education, % GDP	118
3.3.1	GDP/unit of energy use	35	2.2.2	Graduates in science and engineering, %	105
4.2.4	Venture capital received, value, % GDP	34	2.3.3	Global corporate R&D investors, top 3, mn USD	38
4.3.2	Domestic industry diversification	25	3.2.3	Gross capital formation, % GDP	116
4.3.3	Domestic market scale, bn PPP\$	20	4.3.1	Applied tariff rate, weighted avg., %	120
5.2.2	State of cluster development and depth	6	5.1.2	Firms offering formal training, %	96
6.1.5	Citable documents H-index	47	6.3.1	Intellectual property receipts, % total trade	111
6.2.1	Labor productivity growth, %	11	7.2.2	National feature films/mn pop. 15–69	71
7.2.5	Creative goods exports, % total trade	37	7.3.2	Country-code TLDs/th pop. 15–69	126

Egypt

89

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
83	97	Lower middle	NAWA	104.3	1,381.1	13,422
Score/Value Rank						
Institutions				43.8	111	
1.1 Political environment	49.0	99				
1.1.1 Political and operational stability*	60.0	97				
1.1.2 Government effectiveness*	38.0	101				
1.2 Regulatory environment	37.6	125 ○				
1.2.1 Regulatory quality*	27.7	110				
1.2.2 Rule of law*	36.7	84				
1.2.3 Cost of redundancy dismissal	36.8	126 ○ ◇				
1.3 Business environment	45.0	73				
1.3.1 Policies for doing business†	60.4	37 ● ◆				
1.3.2 Entrepreneurship policies and culture*	29.6	51				
Human capital and research				20.2	97	
2.1 Education	38.1	104				
2.1.1 Expenditure on education, % GDP	2.5	118 ○				
2.1.2 Government funding/pupil, secondary, % GDP/cap	11.8	91				
2.1.3 School life expectancy, years	13.6	76	○			
2.1.4 PISA scales in reading, maths and science	n/a	n/a				
2.1.5 Pupil-teacher ratio, secondary	15.8	78				
2.2 Tertiary education	11.6	107				
2.2.1 Tertiary enrolment, % gross	38.9	76				
2.2.2 Graduates in science and engineering, %	11.2	105 ○ ◇				
2.2.3 Tertiary inbound mobility, %	1.8	80	○			
2.3 Research and development (R&D)	11.1	54				
2.3.1 Researchers, FTE/mn pop.	838.0	55				
2.3.2 Gross expenditure on R&D, % GDP	1.0	42 ● ◆				
2.3.3 Global corporate R&D investors, top 3, mn USD	0.0	38 ○ ◇				
2.3.4 QS university ranking, top 3*	19.8	51 ●				
Infrastructure				35.5	93	
3.1 Information and communication technologies (ICTs)	60.1	93				
3.1.1 ICT access*	81.1	83				
3.1.2 ICT use*	51.1	91				
3.1.3 Government's online service*	57.1	93				
3.1.4 E-participation*	51.2	99				
3.2 General infrastructure	21.0	103				
3.2.1 Electricity output, GWh/mn pop.	1,935.3	82	○			
3.2.2 Logistics performance*	35.8	66				
3.2.3 Gross capital formation, % GDP	16.0	116 ○ ◇				
3.3 Ecological sustainability	25.4	70 ◆				
3.3.1 GDP/unit of energy use	13.4	35 ●				
3.3.2 Environmental performance*	35.5	89				
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.6	79				
Market sophistication				26.2	86	
4.1 Credit	17.6	92				
4.1.1 Finance for startups and scaleups*	39.6	41				
4.1.2 Domestic credit to private sector, % GDP	27.1	102				
4.1.3 Loans from microfinance institutions, % GDP	0.3	45				
4.2 Investment	8.1	59				
4.2.1 Market capitalization, % GDP	14.2	67				
4.2.2 Venture capital investors, deals/bn PPP\$ GDP	0.0	65				
4.2.3 Venture capital recipients, deals/bn PPP\$ GDP	0.0	49				
4.2.4 Venture capital received, value, % GDP	0.0	34 ●				
4.3 Trade, diversification, and market scale	52.9	77				
4.3.1 Applied tariff rate, weighted avg, %	10.4	120 ○	○			
4.3.2 Domestic industry diversification	95.1	25 ●	●			
4.3.3 Domestic market scale, bn PPP\$	1,381.1	20 ●	●			
Business sophistication				20.4	103	
5.1 Knowledge workers	13.8	112				
5.1.1 Knowledge-intensive employment, %	26.8	54 ◆	◆	○		
5.1.2 Firms offering formal training, %	7.9	96 ○ ◇	◇			
5.1.3 GERD performed by business, % GDP	0.0	77				
5.1.4 GERD financed by business, %	3.9	84				
5.1.5 Females employed w/advanced degrees, %	6.4	89				
5.2 Innovation linkages	24.3	62				
5.2.1 University-industry R&D collaboration†	47.0	52				
5.2.2 State of cluster development and depth†	69.9	6 ● ◆	◆			
5.2.3 GERD financed by abroad, % GDP	0.0	85				
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	95				
5.2.5 Patent families/bn PPP\$ GDP	0.0	93				
5.3 Knowledge absorption	23.2	98				
5.3.1 Intellectual property payments, % total trade	0.5	69				
5.3.2 High-tech imports, % total trade	7.2	89				
5.3.3 ICT services imports, % total trade	1.5	61				
5.3.4 FDI net inflows, % GDP	2.6	55				
5.3.5 Research talent, % in businesses	6.3	66				
Knowledge and technology outputs				18.2	79	
6.1 Knowledge creation	12.9	64				
6.1.1 Patents by origin/bn PPP\$ GDP	0.8	70				
6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0	80				
6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a				
6.1.4 Scientific and technical articles/bn PPP\$ GDP	19.4	48				
6.1.5 Citable documents H-index	18.0	47 ● ◆	◆			
6.2 Knowledge impact	25.7	72				
6.2.1 Labor productivity growth, %	3.5	11 ●	●			
6.2.2 New businesses/th pop. 15–64	0.2	108				
6.2.3 Software spending, % GDP	0.2	67				
6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	1.5	91				
6.2.5 High-tech manufacturing, %	22.6	57				
6.3 Knowledge diffusion	16.0	85				
6.3.1 Intellectual property receipts, % total trade	0.0	111 ○	○			
6.3.2 Production and export complexity	38.2	65				
6.3.3 High-tech exports, % total trade	0.6	86				
6.3.4 ICT services exports, % total trade	1.9	65				
Creative outputs				14.1	84	
7.1 Intangible assets	23.3	72				
7.1.1 Intangible asset intensity, top 15, %	51.9	50				
7.1.2 Trademarks by origin/bn PPP\$ GDP	18.7	94				
7.1.3 Global brand value, top 5,000, % GDP	7.0	64				
7.1.4 Industrial designs by origin/bn PPP\$ GDP	1.4	56				
7.2 Creative goods and services	9.1	86				
7.2.1 Cultural and creative services exports, % total trade	n/a	n/a				
7.2.2 National feature films/mn pop. 15–69	0.5	71 ○	○			
7.2.3 Entertainment and media market/th pop. 15–69	1.7	55				
7.2.4 Printing and other media, % manufacturing	0.7	69				
7.2.5 Creative goods exports, % total trade	1.4	37 ●	●			
7.3 Online creativity	0.8	104				
7.3.1 Generic top-level domains (TLDs)/th pop. 15–69	1.2	91				
7.3.2 Country-code TLDs/th pop. 15–69	0.0	126 ○	○			
7.3.3 GitHub commit pushes received/mn pop. 15–69	1.3	93				
7.3.4 Mobile app creation/bn PPP\$ GDP	0.6	80				

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 Egypt.

Missing data for Egypt

Code	Indicator name	Economy year	Model year	Source
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization
7.2.1	Cultural and creative services exports, % total trade	n/a	2020	World Trade Organization and United Nations Conference on Trade and Development

Outdated data for Egypt

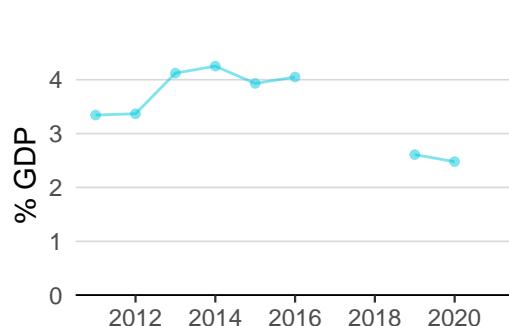
Code	Indicator name	Economy year	Model year	Source
2.1.3	School life expectancy, years	2018	2019	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2018	2019	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2016	2020	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2016	2019	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
4.3.1	Applied tariff rate, weighted avg., %	2019	2020	World Bank
4.3.2	Domestic industry diversification	2017	2019	United Nations Industrial Development Organization
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
5.3.5	Research talent, % in businesses	2018	2020	UNESCO Institute for Statistics
6.2.5	High-tech manufacturing, %	2017	2019	United Nations Industrial Development Organization
7.1.2	Trademarks by origin/bn PPP\$ GDP	2019	2020	World Intellectual Property Organization
7.1.4	Industrial designs by origin/bn PPP\$ GDP	2019	2020	World Intellectual Property Organization
7.2.4	Printing and other media, % manufacturing	2017	2019	United Nations Industrial Development Organization



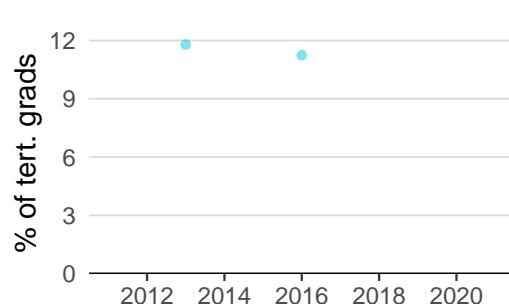
EGYPT'S INNOVATION SYSTEM

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

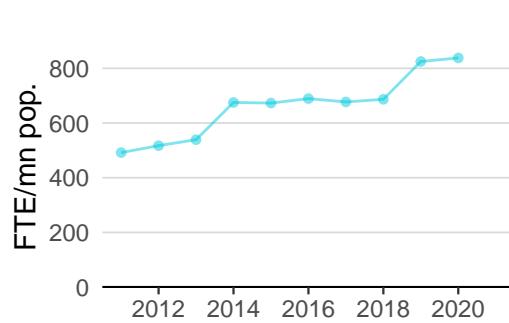
Innovation inputs



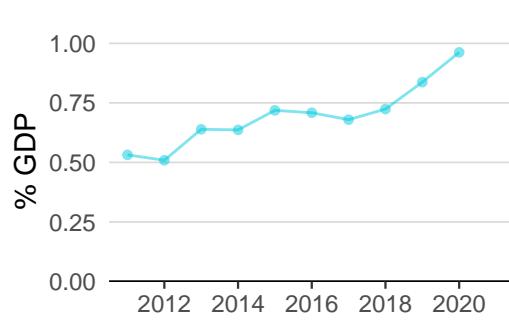
2.1.1 Expenditure on education was equal to 2.5% GDP in 2020—down by 5 percentage points from the year prior—and equivalent to an indicator rank of 118.



2.2.2 Graduates in science and engineering was equal to 11.2% of tert. grads in 2016 and equivalent to an indicator rank of 105.



2.3.1 Researchers was equal to 838.0 FTE/mn pop. in 2020—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 55.



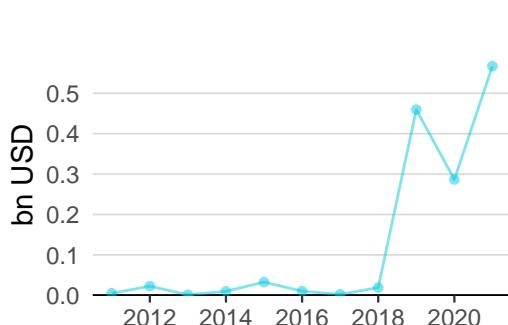
2.3.2 Gross expenditure on R&D was equal to 1.0% GDP in 2020—up by 15 percentage points from the year prior—and equivalent to an indicator rank of 42.



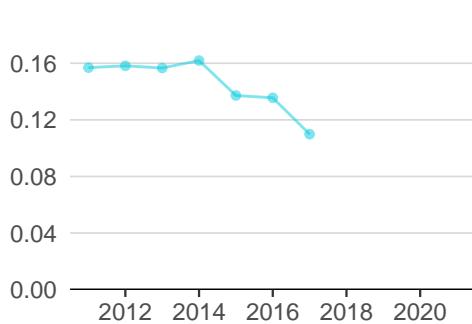
2.3.4 QS university ranking was equal to 19.8 in 2021—down by 3 percentage points from the year prior—and equivalent to an indicator rank of 51.



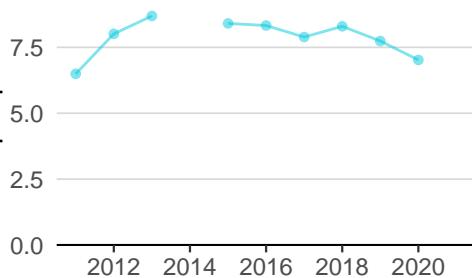
3.1.1 ICT access was equal to 8.1 in 2020 and equivalent to an indicator rank of 83.



4.2.4 Venture capital received was equal to 0.6 bn USD in 2021—up by 98 percentage points from the year prior—and equivalent to an indicator rank of 34.



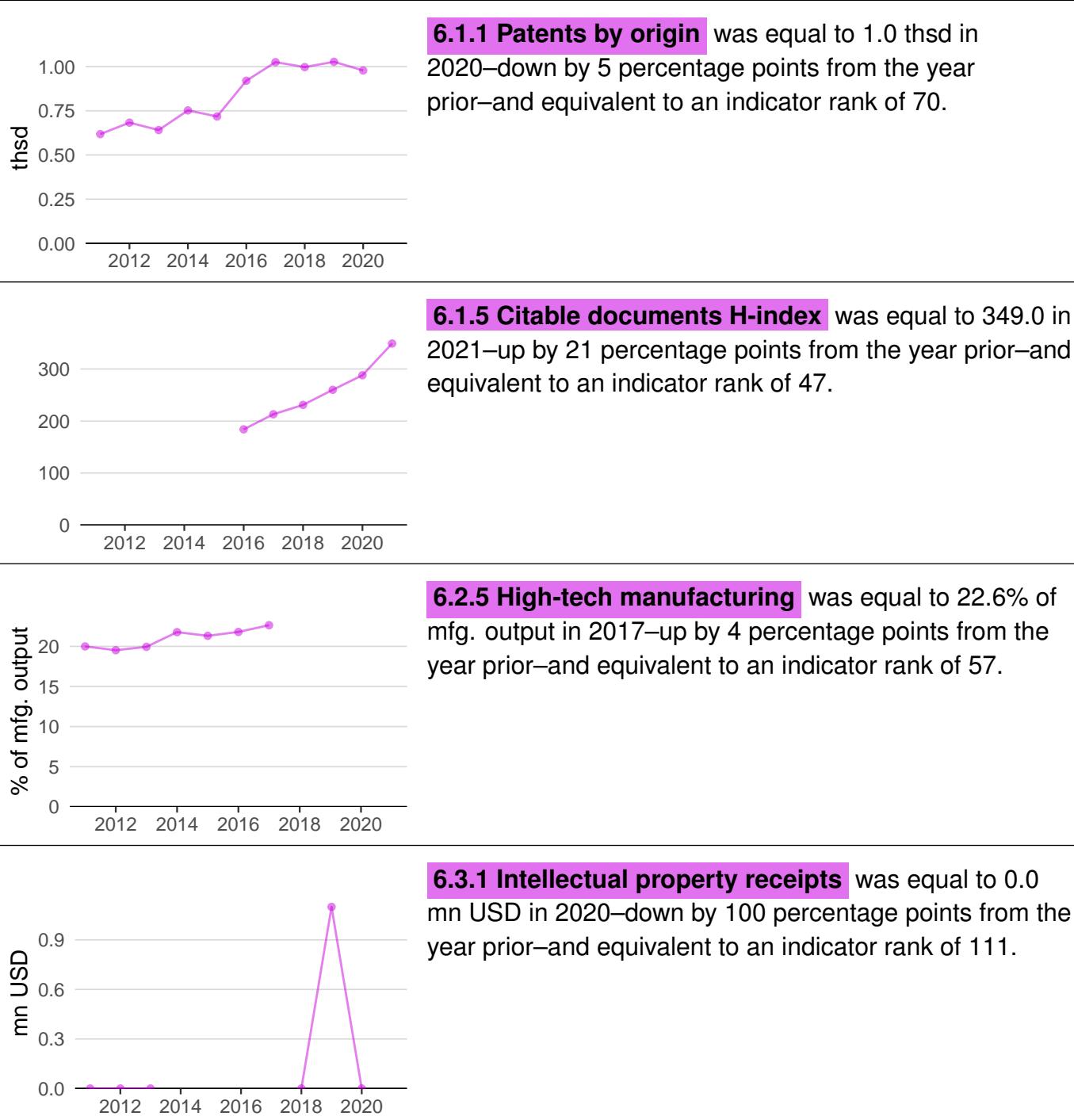
4.3.2 Domestic industry diversification was equal to 0.1 in 2017—down by 19 percentage points from the year prior—and equivalent to an indicator rank of 25.

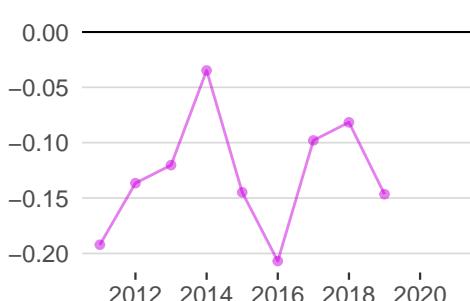


5.1.1 Knowledge-intensive employment was equal to 7.0 mn people in 2020—down by 9 percentage points from the year prior—and equivalent to an indicator rank of 54.

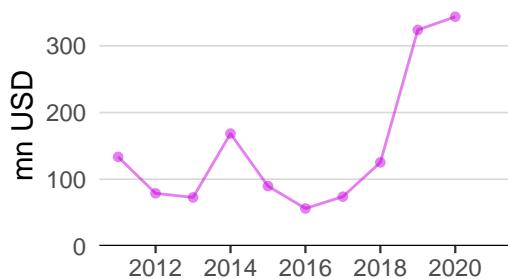


Innovation outputs





6.3.2 Production and export complexity was equal to -0.1 in 2019—down by 79 percentage points from the year prior—and equivalent to an indicator rank of 65.



6.3.3 High-tech exports was equal to 343.6 mn USD in 2020—up by 6 percentage points from the year prior—and equivalent to an indicator rank of 86.



7.1.1 Intangible asset intensity was equal to 51.9% of total value in 2021 and equivalent to an indicator rank of 50.



7.1.3 Global brand value was equal to 2.8 bn USD in 2021—up by 150 percentage points from the year prior—and equivalent to an indicator rank of 64.



EGYPT'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
THE AMERICAN UNIVERSITY IN CAIRO	26.1	445=
CAIRO UNIVERSITY	21.2	571-580
AIN SHAMS UNIVERSITY	12.0	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
FAWRY FOR BANKING & PAYMENT	1
COMMERCIAL INTERNATIONAL BANK	2
ABOU KIR FERTIL & CHEMICALS	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
ORASCOM	Engineering & Construction	1
NATIONAL BANK OF EGYPT	Banking	2
EASTERN CO	Tobacco	3

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

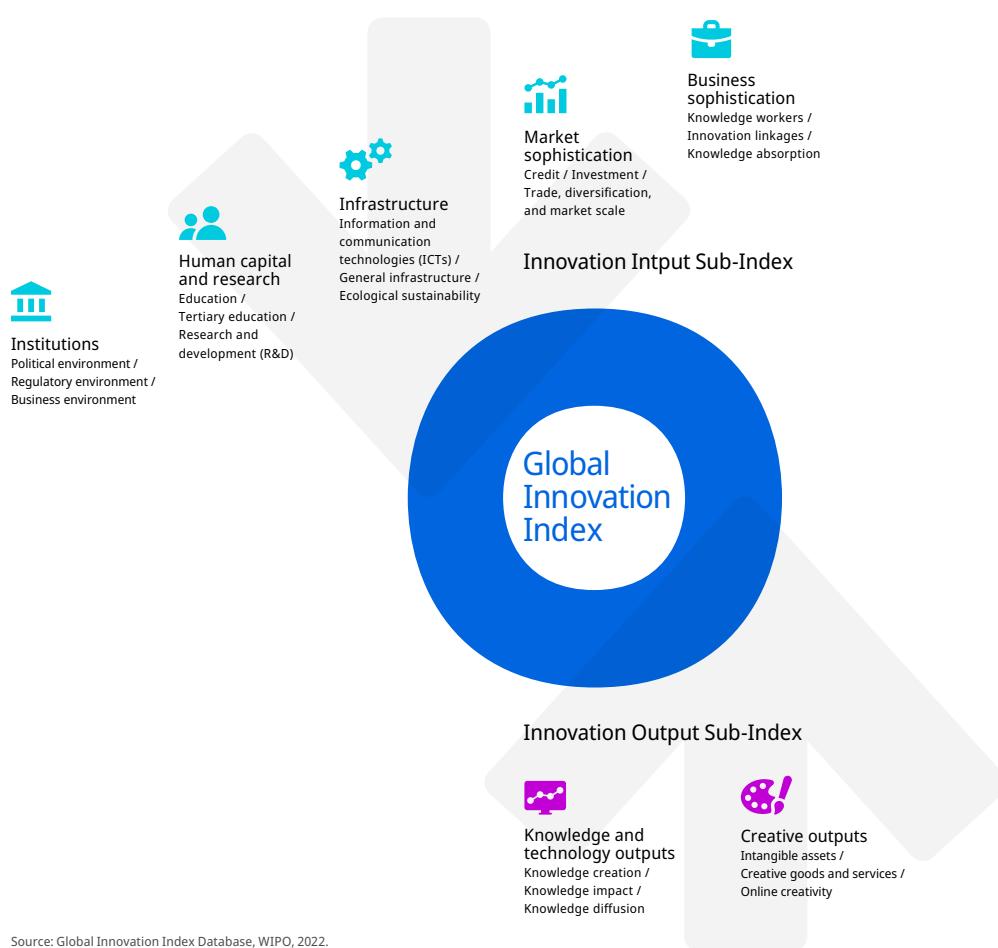
Note: Rank corresponds to within economy ranks.



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.