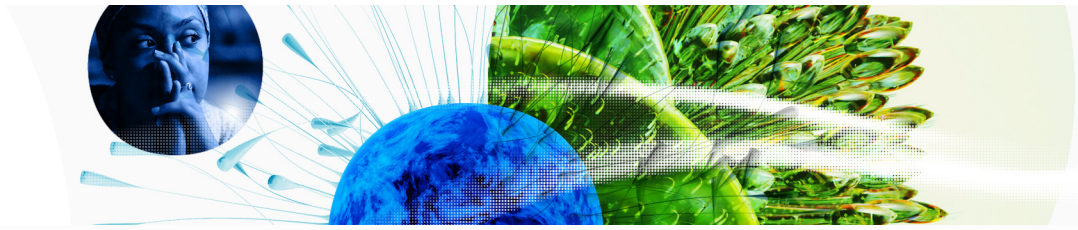
Global Innovation Index 2023



The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

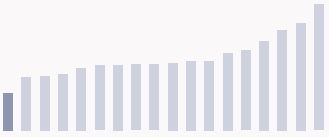
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation**.

Algeria ranking in the Global Innovation Index 2023

> Algeria ranks 119th among the 132 economies featured in the GII 2023.

> Algeria ranks 33rd among the 37 lower-middle-income group economies.

> Algeria ranks 18th among the 18 economies in Northern Africa and Western Asia.



> Algeria GII Ranking (2020-2023)

The table shows the rankings of Algeria over the past four years. 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 Algeria in the GII 2023 is between ranks 110 and 121.

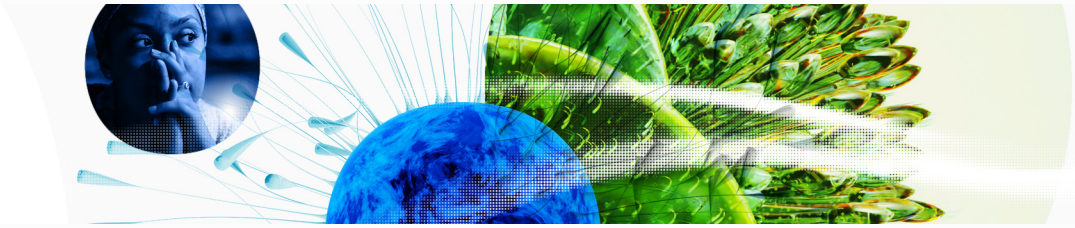
	GII Position	Innovation Inputs	Innovation Outputs
2020	121st	111st	126th
2021	120th	109th	128th
2022	115th	110th	118th
2023	119th	118th	116th

Algeria performs better in innovation outputs than innovation inputs in 2023.

This year Algeria ranks 118th in innovation inputs. This position is lower than last year.

Algeria ranks 116th in innovation outputs. This position is higher than last year.

Global Innovation Index 2023



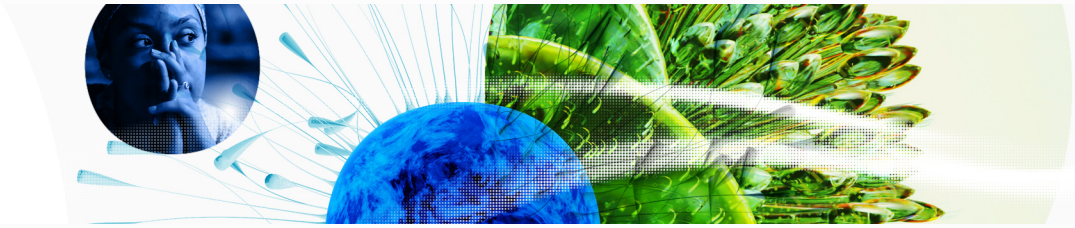
→ Expected vs. observed innovation performance

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

> Innovation overperformers relative to their economic development

Global Innovation Index 2023

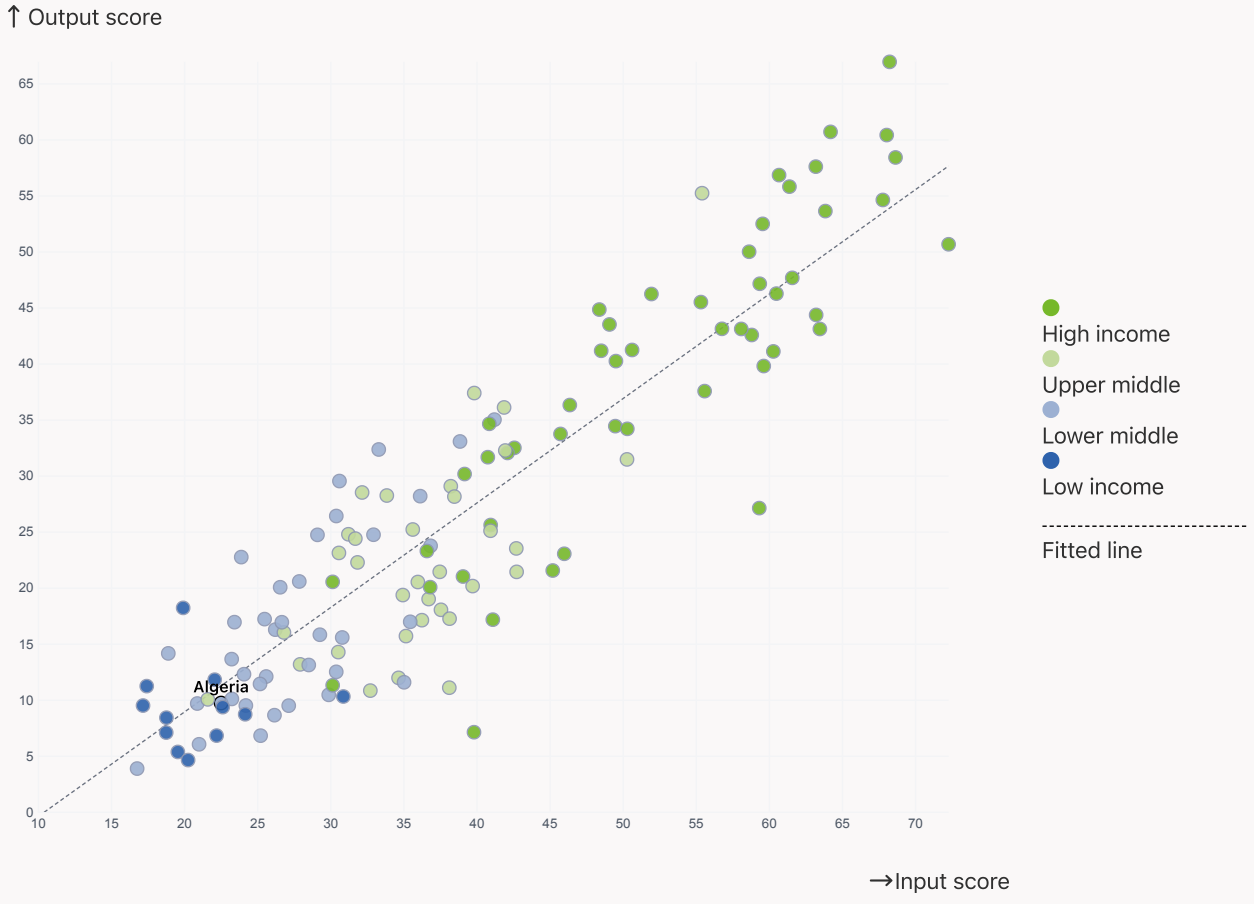


→ Effectively translating innovation investments into innovation outputs

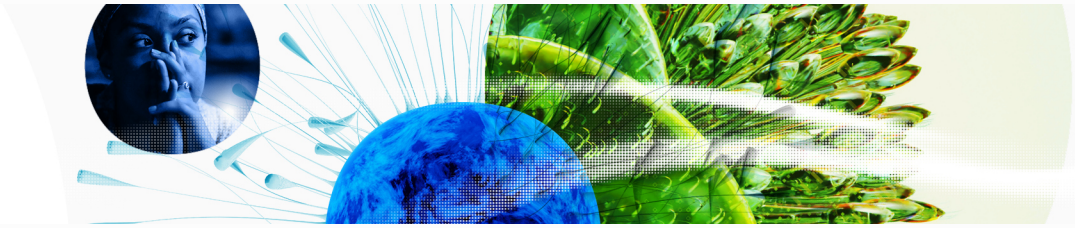
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

> Algeria produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

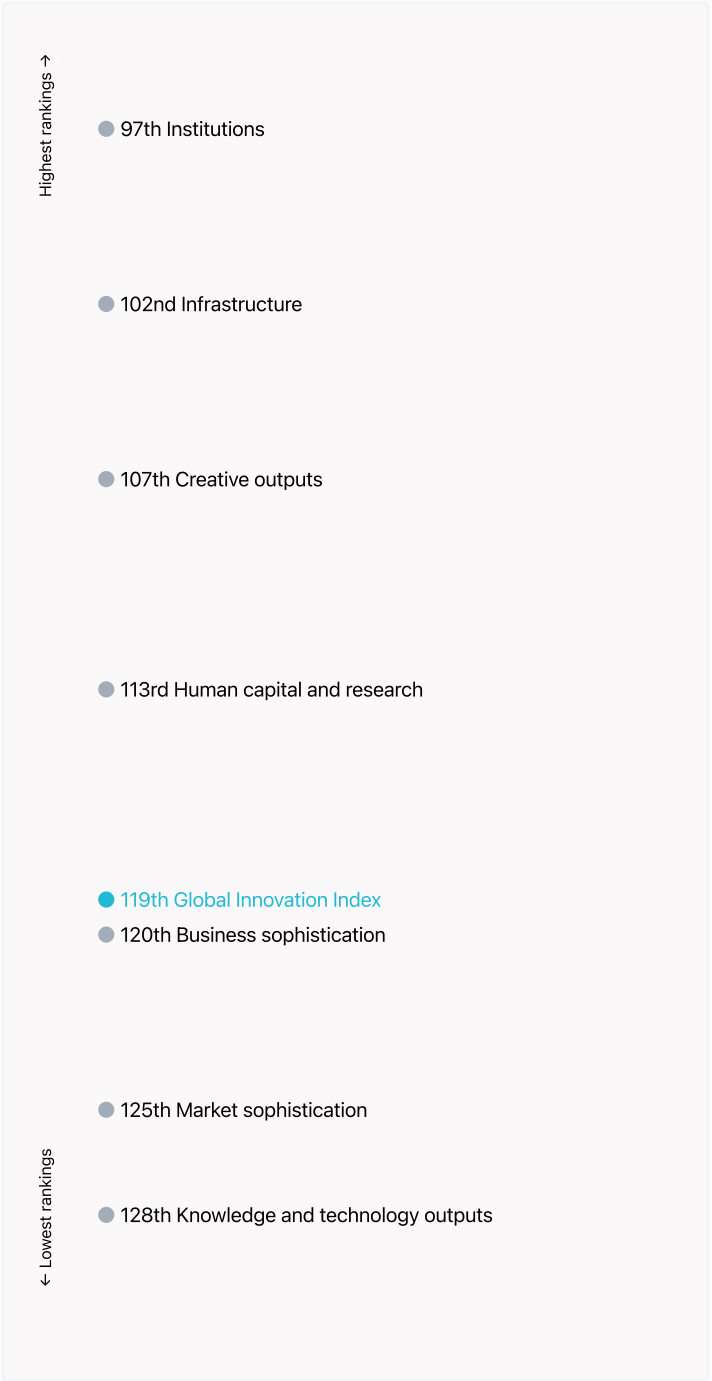


Global Innovation Index 2023



→ Overview of Algeria's rankings in the seven areas of the GII in 2023

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Algeria are those that rank above the GII (shown in blue) and the weakest are those that rank below.



> Highest rankings

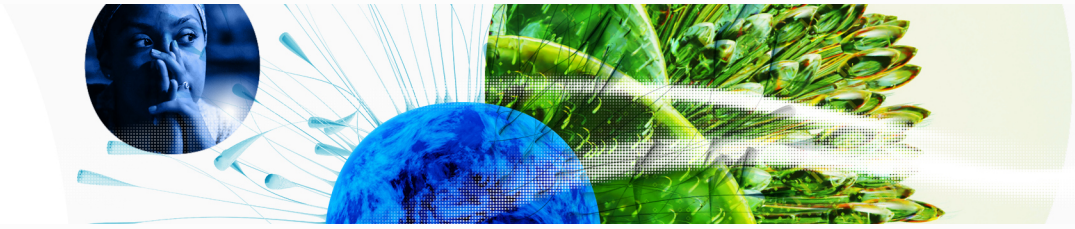
Algeria ranks highest in Institutions (97th), Infrastructure (102nd), Creative outputs (107th) and Human capital and research (113rd).

> Lowest rankings

Algeria ranks lowest in Knowledge and technology outputs (128th), Market sophistication (125th) and Business sophistication (120th).

The full WIPO Intellectual Property Statistics profile for Algeria can be found on this link.

Global Innovation Index 2023



→ Benchmark of Algeria against other country groupings for each of the seven areas of the GII Index

The charts shows the relative position of Algeria (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

> Lower-Middle-Income economies

Algeria performs below the lower-middle-income group average in all the pillars.

> Northern Africa And Western Asia

Algeria performs below the regional average in all the pillars.

Knowledge and technology outputs

- Top 10 | Score: 58.96
- NAWA | Score: 24.01
- Lower middle income | Score: 17.21
- Algeria | Score: 9.46

Creative outputs

- Top 10 | 56.09
- NAWA | 24.51
- Lower middle income | 16.35
- Algeria | 9.93

Business sophistication

- Top 10 | 64.39
- NAWA | 29.44
- Lower middle income | 22.71
- Algeria | 16.55

Market sophistication

- Top 10 | 61.93
- NAWA | 36.12
- Lower middle income | 28.01
- Algeria | 13.87

Human capital and research

- Top 10 | 60.28
- NAWA | 32.72
- Lower middle income | 21.73
- Algeria | 15.95

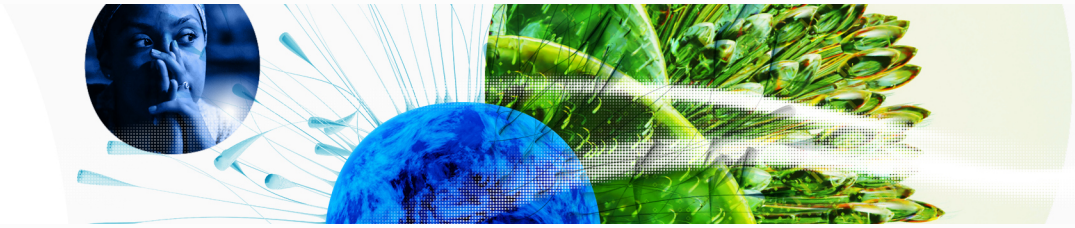
Infrastructure

- Top 10 | 62.83
- NAWA | 41.60
- Lower middle income | 27.83
- Algeria | 27.60

Institutions

- Top 10 | 79.85
- NAWA | 53.39
- Lower middle income | 39.43
- Algeria | 38.72

Global Innovation Index 2023



→ Innovation strengths and weaknesses in Algeria

The table below gives an overview of the indicator strengths and weaknesses of Algeria in the GII 2023.

> Algeria's main innovation strengths are **Gross capital formation, % GDP** (rank 11), **Graduates in science and engineering, %** (rank 19) and **Domestic market scale, bn PPP$** (rank 40).

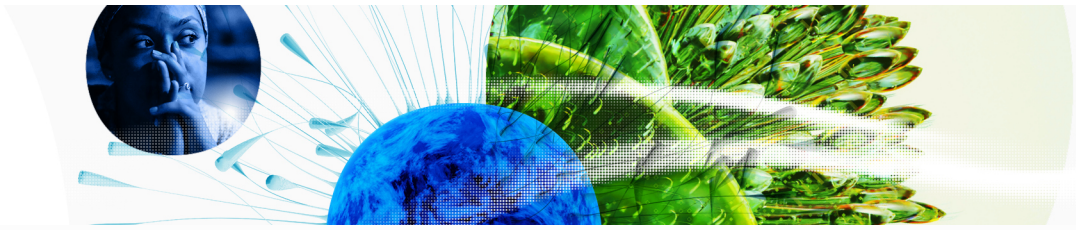
Strengths

Rank	Code	Indicator name
11	3.2.3	Gross capital formation, % GDP
19	2.2.2	Graduates in science and engineering, %
40	4.3.3	Domestic market scale, bn PPP$
48	7.1.4	Industrial designs by origin/bn PPP$ GDP
53	5.3.2	High-tech imports, % total trade
56	2.3.1	Researchers, FTE/mn pop.
58	2.3.2	Gross expenditure on R&D, % GDP
64	5.2.2	State of cluster development
64	2.2.1	Tertiary enrolment, % gross
71	1.2.3	Cost of redundancy dismissal

Weaknesses

Rank	Code	Indicator name
131	6.3.3	High-tech exports, % total trade
130	1.2.1	Regulatory quality
128	6.2.3	Software spending, % GDP
101	4.2.3	VC recipients, deals/bn PPP$ GDP
79	7.2.2	National feature films/mn pop. 15-69
78	4.2.1	Market capitalization, % GDP
77	2.1.4	PISA scales in reading, maths and science
74	7.1.3	Global brand value, top 5,000
71	2.3.4	QS university ranking, top 3
48	6.2.2	Unicorn valuation, % GDP
40	2.3.3	Global corporate R&D investors, top 3, mn US$

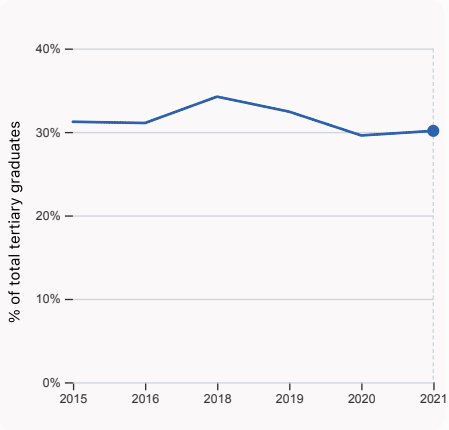
Global Innovation Index 2023



→ Algeria's innovation system

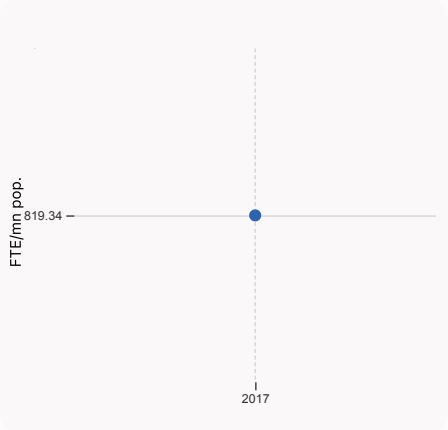
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Algeria



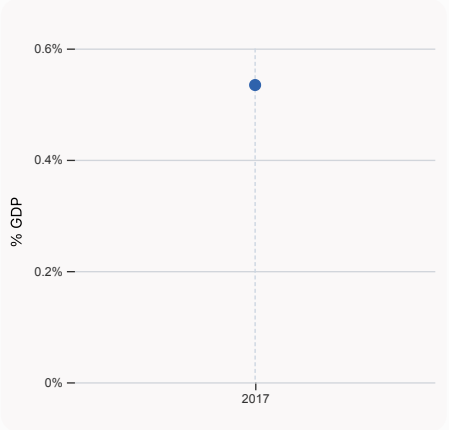
2.2.2 Graduates in science and engineering, %

was equal to 30.13% of total tertiary graduates in 2021, up by 0.55 percentage points from the year prior – and equivalent to an indicator rank of 19.



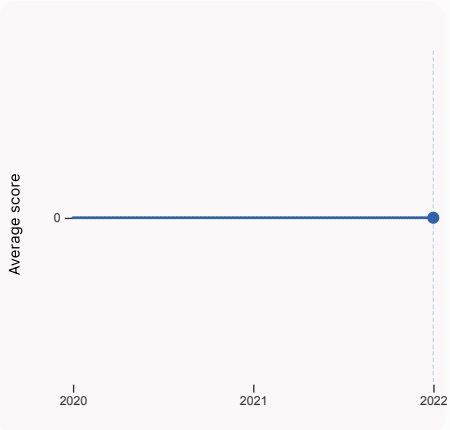
2.3.1 Researchers, FTE/mn pop.

was equal to 819.34 FTE/mn pop. in 2017, equivalent to an indicator rank of 56.



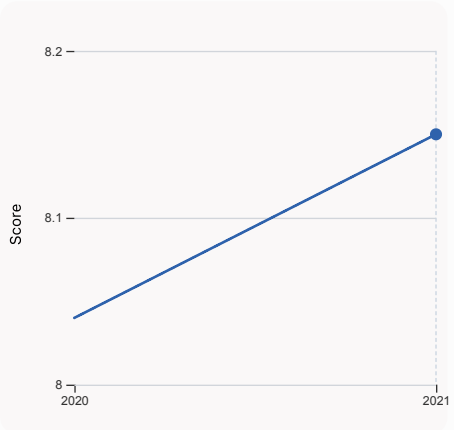
2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.534 % GDP in 2017, equivalent to an indicator rank of 58.



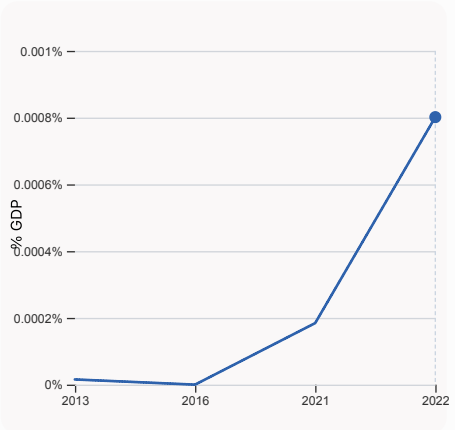
2.3.4 QS university ranking, top 3

was equal to an average score of 0 for the top 3 universities in 2022, equivalent to an indicator rank of 71.



3.1.1 ICT access

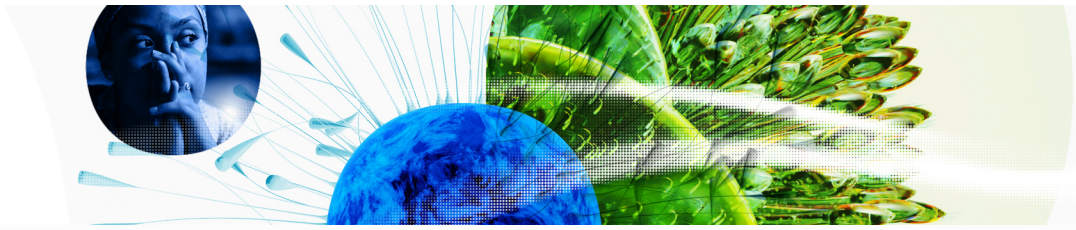
was equal to a score of 8.15 in 2021, up by 1.37% from the year prior – and equivalent to an indicator rank of 86.

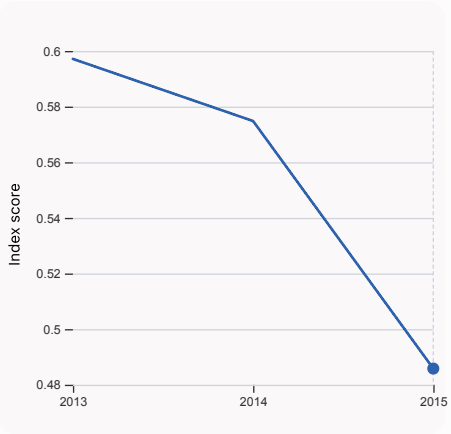


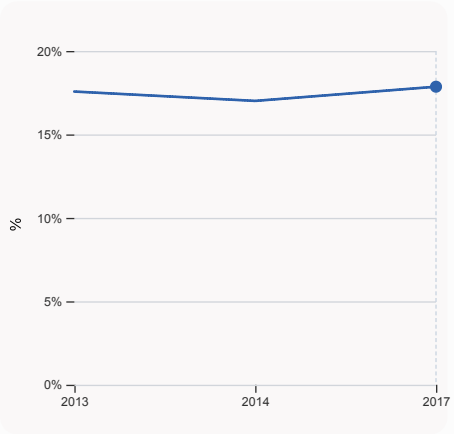
4.2.4 VC received, value, % GDP

was equal to 0.0008% GDP in 2022, up by 0.00062 percentage points from the year prior – and equivalent to an indicator rank of 63.

Global Innovation Index 2023







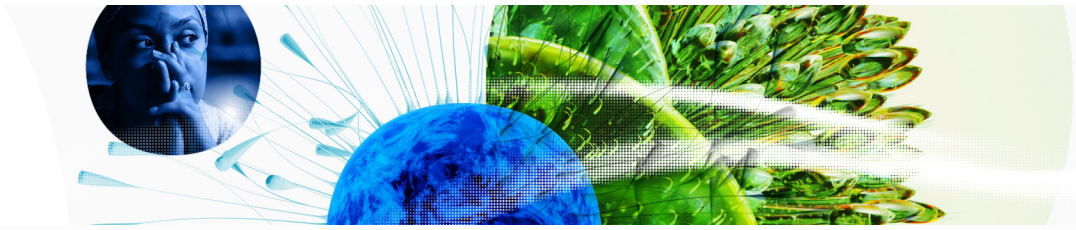
4.3.2 Domestic industry diversification

was equal to an index score of 0.486 in 2015, down by 15.48% from the year prior – and equivalent to an indicator rank of 106.

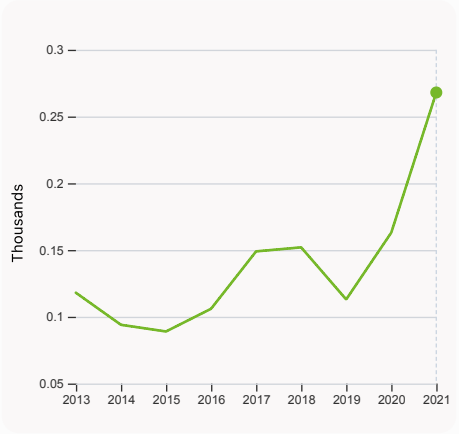
5.1.1 Knowledge-intensive employment, %

was equal to 17.86% in 2017, up by 0.85 percentage points from the year prior – and equivalent to an indicator rank of 81.

Global Innovation Index 2023

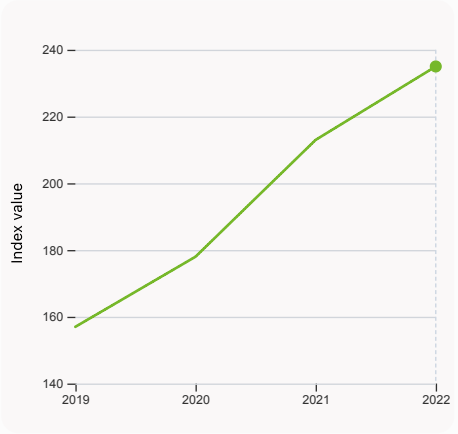


> Innovation outputs in Algeria



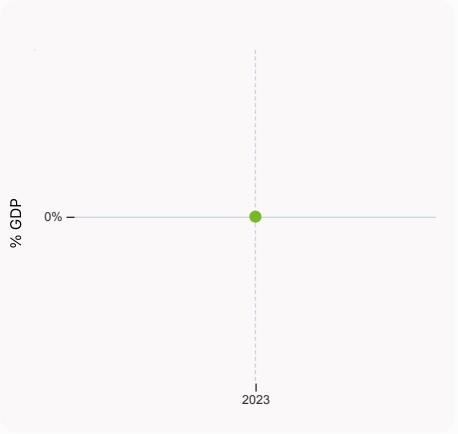
6.1.1 Patents by origin

was equal to 0.27 Thousands in 2021, up by 64.42% from the year prior – and equivalent to an indicator rank of 80.



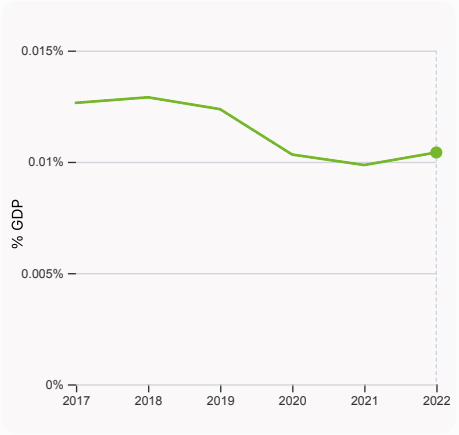
6.1.5 Citable documents H-index

was equal to an index value of 235 in 2022, up by 10.33% from the year prior – and equivalent to an indicator rank of 73.



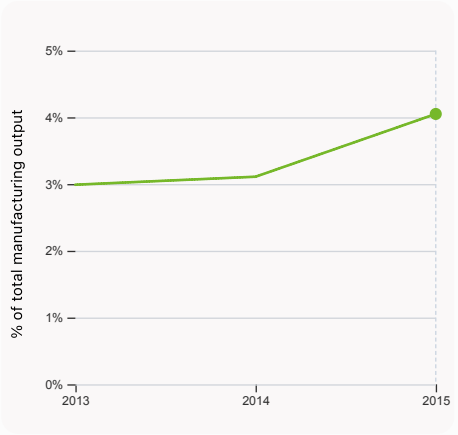
6.2.2 Unicorn valuation, % GDP

was equal to 0 % GDP in 2023 – and equivalent to an indicator rank of 48.



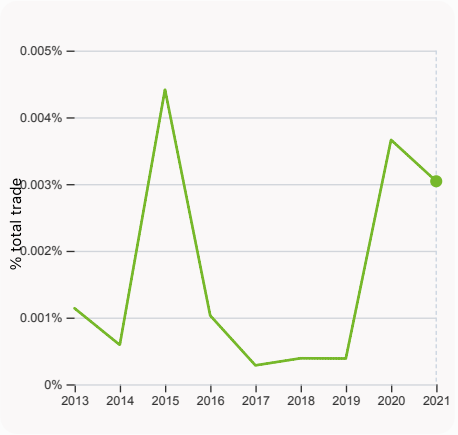
6.2.3 Software spending, % GDP

was equal to 0.01% GDP in 2022, up by 0.00056 percentage points from the year prior – and equivalent to an indicator rank of 128.



6.2.4 High-tech manufacturing, %

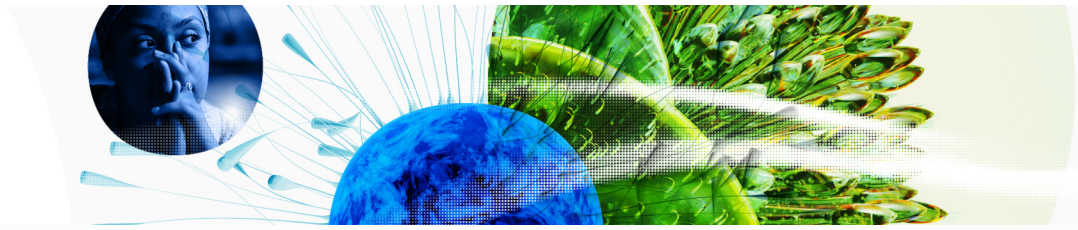
was equal to 4.05% of total manufacturing output in 2015, up by 0.94 percentage points from the year prior – and equivalent to an indicator rank of 104.

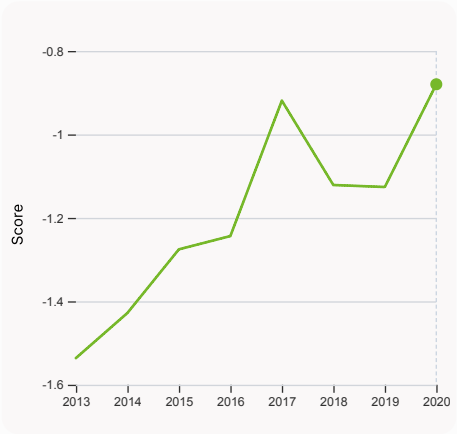


6.3.1 Intellectual property receipts, % total trade

was equal to 0.003% total trade in 2021, down by 0.00062 percentage points from the year prior – and equivalent to an indicator rank of 101.

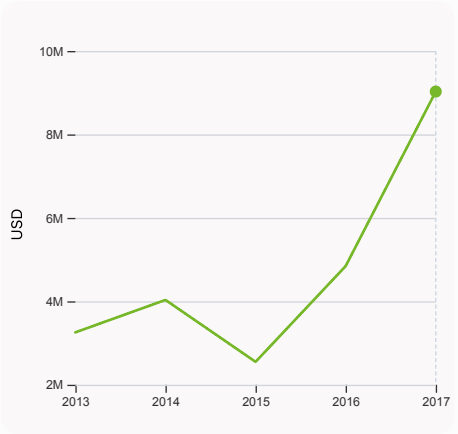
Global Innovation Index 2023





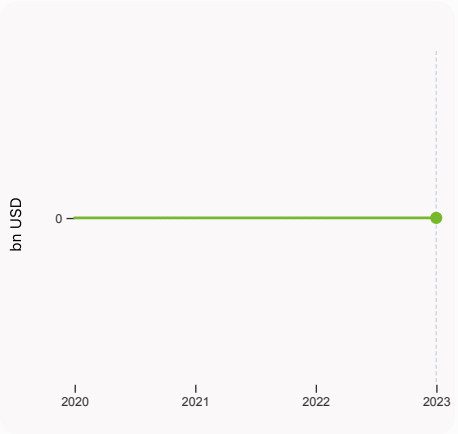
6.3.2 **Production and export complexity**

was equal to a score of -0.88 in 2020, up by 21.86% from the year prior – and equivalent to an indicator rank of 104.



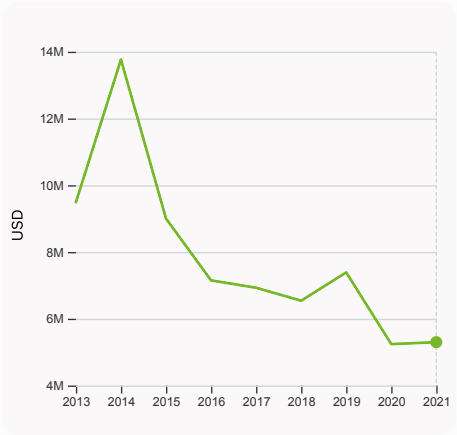
6.3.3 **High-tech exports**

was equal to 9,027,375 USD in 2017, up by 86.33% from the year prior – and equivalent to an indicator rank of 131.



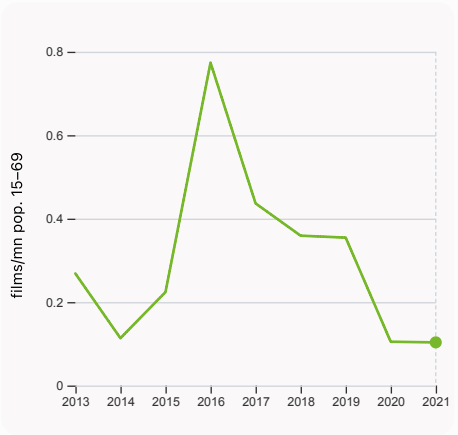
7.1.3 **Global brand value, top 5,000**

was equal to 0 bn USD in 2023 – and equivalent to an indicator rank of 74.



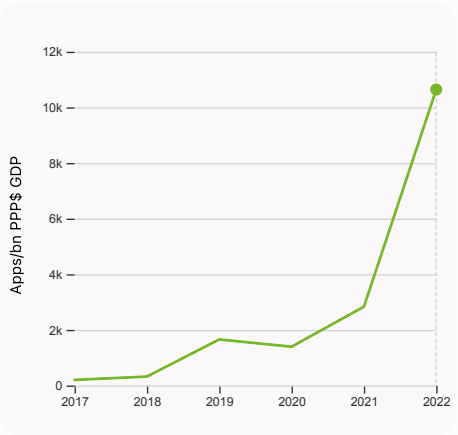
7.2.1 **Cultural and creative services exports**

was equal to 5,299,000 USD in 2021, up by 1.11% from the year prior – and equivalent to an indicator rank of 102.



7.2.2 **National feature films/mn pop. 15-69**

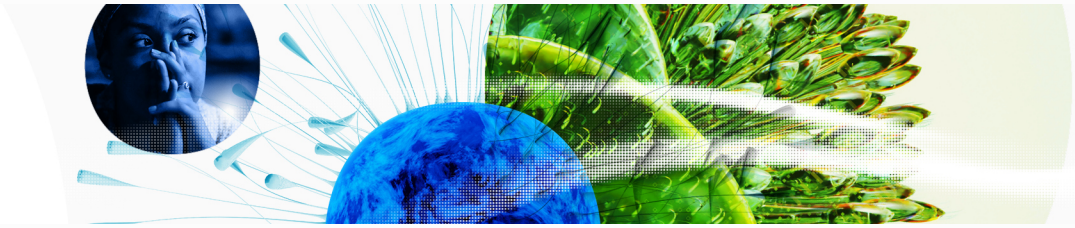
was equal to 0.103 films/mn pop. 15–69 in 2021, down by 1.39% from the year prior – and equivalent to an indicator rank of 79.



7.3.4 **Mobile app creation/bn PPP$ GDP**

was equal to 10,641.32 Apps/bn PPP$ GDP in 2022, up by 275.51% from the year prior – and equivalent to an indicator rank of 102.

Global Innovation Index 2023



Algeria

GII 2023 rank **119**

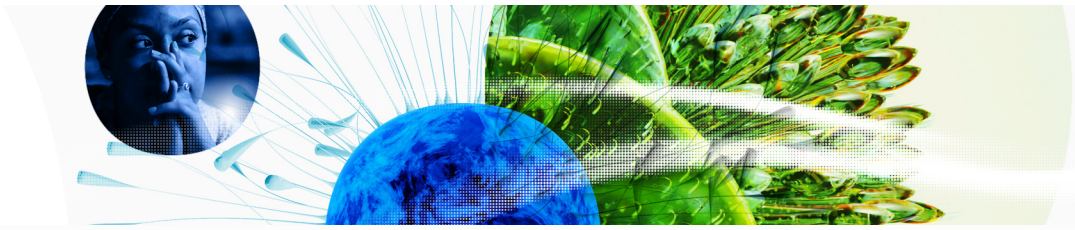
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
116	118	Lower middle	NAWA	44.9	600.7	13,323.9

	Score / Value	Rank	
Institutions	**38.7**	**97**	
1.1 Institutional environment	**27.2**	**106**	
1.1.1 Operational stability for businesses*	34.7	111	
1.1.2 Government effectiveness*	19.6	106	
1.2 Regulatory environment	**47.6**	**106**	
1.2.1 Regulatory quality*	11.7	130	○ ◇
1.2.2 Rule of law*	15.8	110	
1.2.3 Cost of redundancy dismissal	17.3	71	●
1.3 Business environment	**41.3**	**79**	
1.3.1 Policies for doing business†	41.3	82	
1.3.2 Entrepreneurship policies and culture†	n/a	n/a	
Human capital and research	**16.0**	**113**	
2.1 Education	**11.3**	**132**	
2.1.1 Expenditure on education, % GDP	n/a	n/a	
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	361.7	77	○
2.1.5 Pupil-teacher ratio, secondary	n/a	n/a	
2.2 Tertiary education	**32.1**	**60**	
2.2.1 Tertiary enrolment, % gross	53.7	64	●
2.2.2 Graduates in science and engineering, %	30.1	19	●
2.2.3 Tertiary inbound mobility, %	0.6	98	
2.3 Research and development (R&D)	**4.5**	**78**	
2.3.1 Researchers, FTE/mn pop.	819.3	56	●
2.3.2 Gross expenditure on R&D, % GDP	0.5	58	●
2.3.3 Global corporate R&D investors, top 3, mn US$	0.0	40	○ ◇
2.3.4 QS university ranking, top 3*	0.0	71	○ ◇
Infrastructure	**27.6**	**102**	
3.1 Information and communication technologies (ICTs)	**47.7**	**102**	
3.1.1 ICT access*	72.2	86	
3.1.2 ICT use*	66.7	78	
3.1.3 Government's online service*	30.8	121	
3.1.4 E-participation*	20.9	122	
3.2 General infrastructure	**22.7**	**79**	
3.2.1 Electricity output, GWh/mn pop.	1,805.2	87	
3.2.2 Logistics performance*	18.2	89	
3.2.3 Gross capital formation, % GDP	36.8	11	●
3.3 Ecological sustainability	**12.4**	**117**	
3.3.1 GDP/unit of energy use	8.1	87	
3.3.2 Environmental performance*	18.1	113	
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.3	103	
Market sophistication	**13.9**	**125**	◇
4.1 Credit	**9.6**	**115**	
4.1.1 Finance for startups and scaleups†	n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP	29.7	97	
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**1.8**	**104**	
4.2.1 Market capitalization, % GDP	0.2	78	○ ◇
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.3 VC recipients, deals/bn PPP$ GDP	0.0	101	○ ◇
4.2.4 VC received, value, % GDP	0.0	63	
4.3 Trade, diversification, and market scale	**30.2**	**115**	
4.3.1 Applied tariff rate, weighted avg., %	10.2	118	
4.3.2 Domestic industry diversification	43.5	106	◇
4.3.3 Domestic market scale, bn PPP$	600.7	40	●

	Score / Value	Rank	
Business sophistication	**16.6**	**120**	◇
5.1 Knowledge workers	**14.9**	**113**	
5.1.1 Knowledge-intensive employment, %	17.9	81	
5.1.2 Firms offering formal training, %	n/a	n/a	
5.1.3 GERD performed by business, % GDP	0.0	76	
5.1.4 GERD financed by business, %	6.7	80	
5.1.5 Females employed w/advanced degrees, %	8.1	83	
5.2 Innovation linkages	**14.3**	**101**	
5.2.1 University-industry R&D collaboration†	28.9	98	
5.2.2 State of cluster development†	41.5	64	●
5.2.3 GERD financed by abroad, % GDP	0.0	95	
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	121	
5.2.5 Patent families/bn PPP$ GDP	0.0	93	
5.3 Knowledge absorption	**20.4**	**128**	◇
5.3.1 Intellectual property payments, % total trade	0.3	79	
5.3.2 High-tech imports, % total trade	8.9	53	●
5.3.3 ICT services imports, % total trade	0.4	115	
5.3.4 FDI net inflows, % GDP	0.7	105	
5.3.5 Research talent, % in businesses	0.5	81	◇
Knowledge and technology outputs	**9.5**	**128**	◇
6.1 Knowledge creation	**8.8**	**86**	
6.1.1 Patents by origin/bn PPP$ GDP	0.5	80	
6.1.2 PCT patents by origin/bn PPP$ GDP	0.0	81	
6.1.3 Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a	
6.1.5 Citable documents H-index	10.7	73	
6.2 Knowledge impact	**11.9**	**126**	◇
6.2.1 Labor productivity growth, %	-0.0	97	
6.2.2 Unicorn valuation, % GDP	0.0	48	○ ◇
6.2.3 Software spending, % GDP	0.0	128	○ ◇
6.2.4 High-tech manufacturing, %	4.1	104	◇
6.3 Knowledge diffusion	**7.6**	**120**	
6.3.1 Intellectual property receipts, % total trade	0.0	101	
6.3.2 Production and export complexity	34.1	104	
6.3.3 High-tech exports, % total trade	0.0	131	○
6.3.4 ICT services exports, % total trade	0.2	121	
6.3.5 ISO 9001 quality/bn PPP$ GDP	1.0	106	
Creative outputs	**9.9**	**107**	
7.1 Intangible assets	**13.5**	**102**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	20.8	90	
7.1.3 Global brand value, top 5,000	0.0	74	○ ◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	1.6	48	●
7.2 Creative goods and services	**0.2**	**128**	
7.2.1 Cultural and creative services exports, % total trade	0.0	102	
7.2.2 National feature films/mn pop. 15-69	0.1	79	○
7.2.3 Entertainment and media market/th pop. 15-69	0.2	58	
7.2.4 Creative goods exports, % total trade	0.0	124	
7.3 Online creativity	**12.5**	**106**	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	0.5	110	
7.3.2 Country-code TLDs/th pop. 15-69	0.1	116	
7.3.3 GitHub commits/mn pop. 15-69	0.9	115	
7.3.4 Mobile app creation/bn PPP$ GDP	48.5	102	

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/gii-ranking. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

Global Innovation Index 2023



→ Data availability

The following tables list indicators that are either missing or outdated for Algeria.

> Algeria has missing data for eleven indicators and outdated data for nineteen indicators.

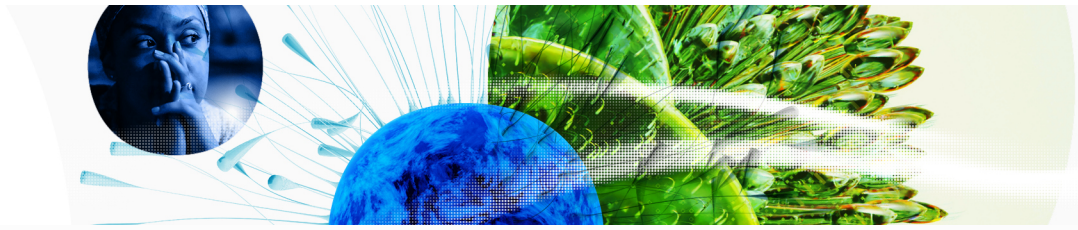
> Missing data for Algeria

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.1.1	Expenditure on education, % GDP	n/a	2021	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2019	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2020	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	n/a	2020	UNESCO Institute for Statistics
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	International Monetary Fund, Financial Access Survey (FAS)
4.2.2	Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
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	2021	World Intellectual Property Organization; International Monetary Fund
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance

> Outdated data for Algeria

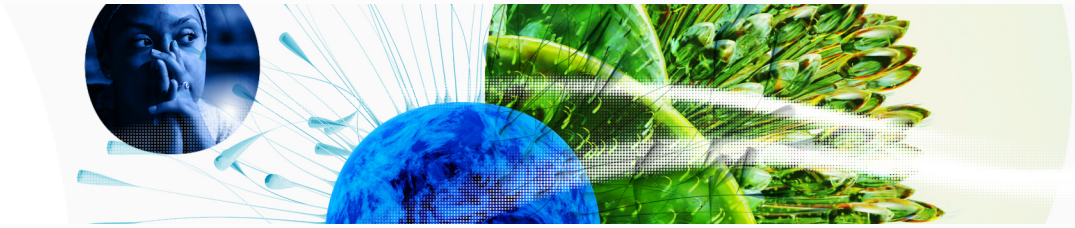
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2019	2022	World Economic Forum, Executive Opinion Survey (EOS)
2.1.4	PISA scales in reading, maths and science	2015	2018	OECD, PISA
2.3.1	Researchers, FTE/mn pop.	2017	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2017	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2023



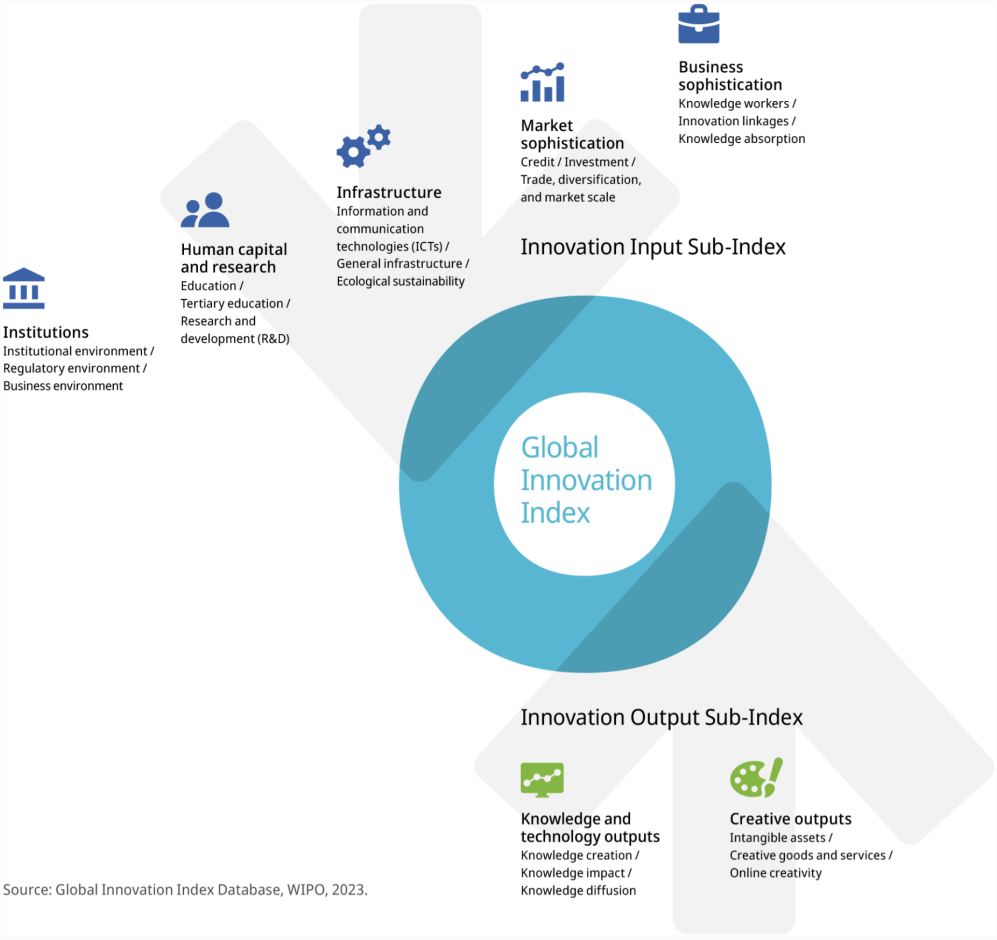
Code	Indicator name	Economy Year	Model Year	Source
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
4.2.1	Market capitalization, % GDP	2018	2020	World Federation of Exchanges; World Bank
4.3.2	Domestic industry diversification	2015	2020	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2017	2022	International Labour Organization
5.1.3	GERD performed by business, % GDP	2017	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2017	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2017	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2019	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2019	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	GERD financed by abroad, % GDP	2017	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.2	High-tech imports, % total trade	2017	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2017	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.2.4	High-tech manufacturing, %	2015	2020	United Nations Industrial Development Organization
6.3.3	High-tech exports, % total trade	2017	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development; Trade Data Monitor.
7.2.4	Creative goods exports, % total trade	2017	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development

Global Innovation Index 2023



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, 2023.

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.