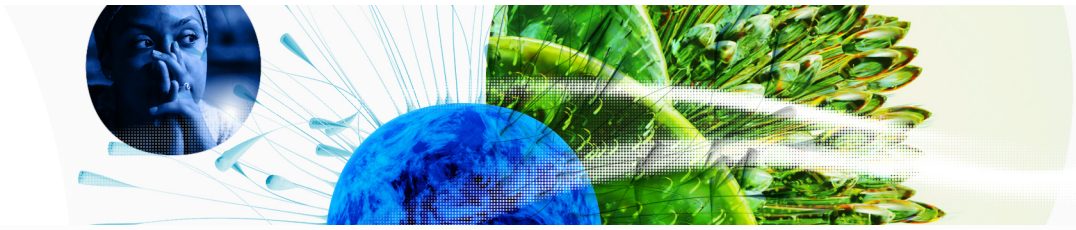
Global Innovation Index 2023



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**.

Namibia ranking in the Global Innovation Index 2023

> Namibia ranks 96th among the 132 economies featured in the GII 2023.

> Namibia ranks 30th among the 33 upper-middle-income group economies.

> Namibia ranks 6th among the 28 economies in Sub-Saharan Africa.

> Namibia GII Ranking (2020-2023)

The table shows the rankings of Namibia 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 Namibia in the GII 2023 is between ranks 92 and 104.

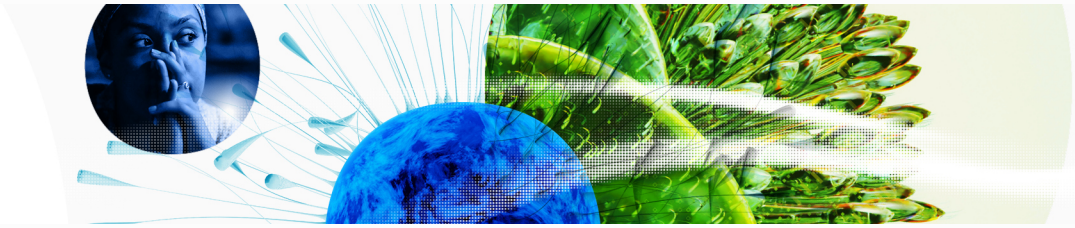
	GII Position	Innovation Inputs	Innovation Outputs
2020	104th	101st	104th
2021	100th	88th	110th
2022	96th	84th	113rd
2023	96th	80th	111st

Namibia performs worse in innovation outputs than innovation inputs in 2023.

This year Namibia ranks 80th in innovation inputs. This position is higher than last year.

Namibia ranks 111st in innovation outputs. This position is higher than last year.

Global Innovation Index 2023

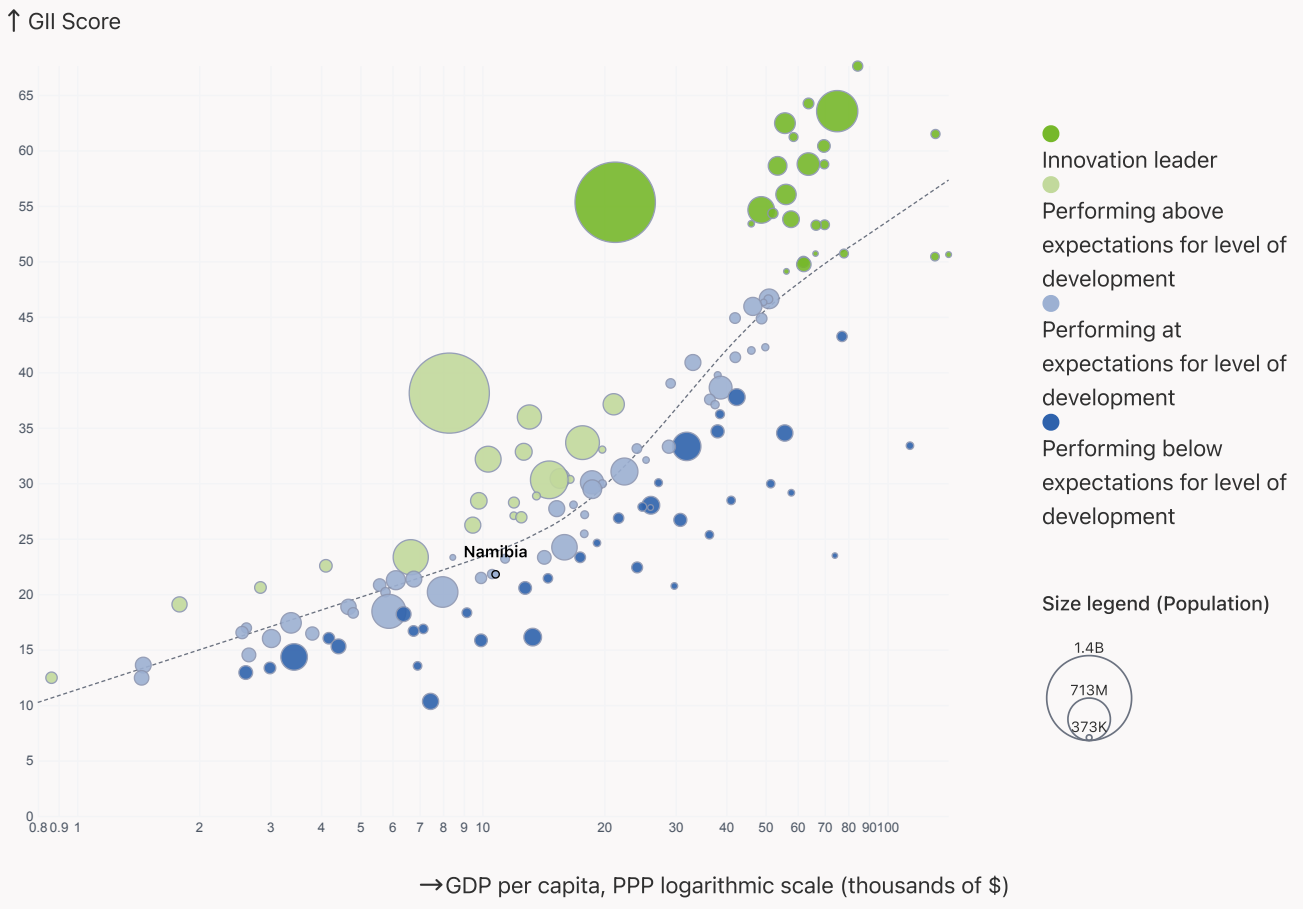


→ Expected vs. observed innovation performance

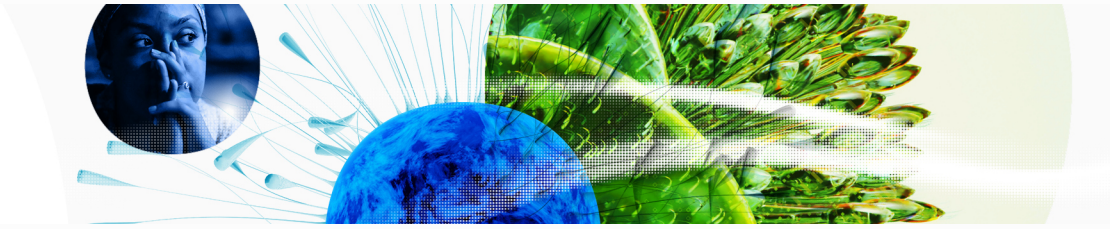
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

> Relative to GDP, Namibia's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2023

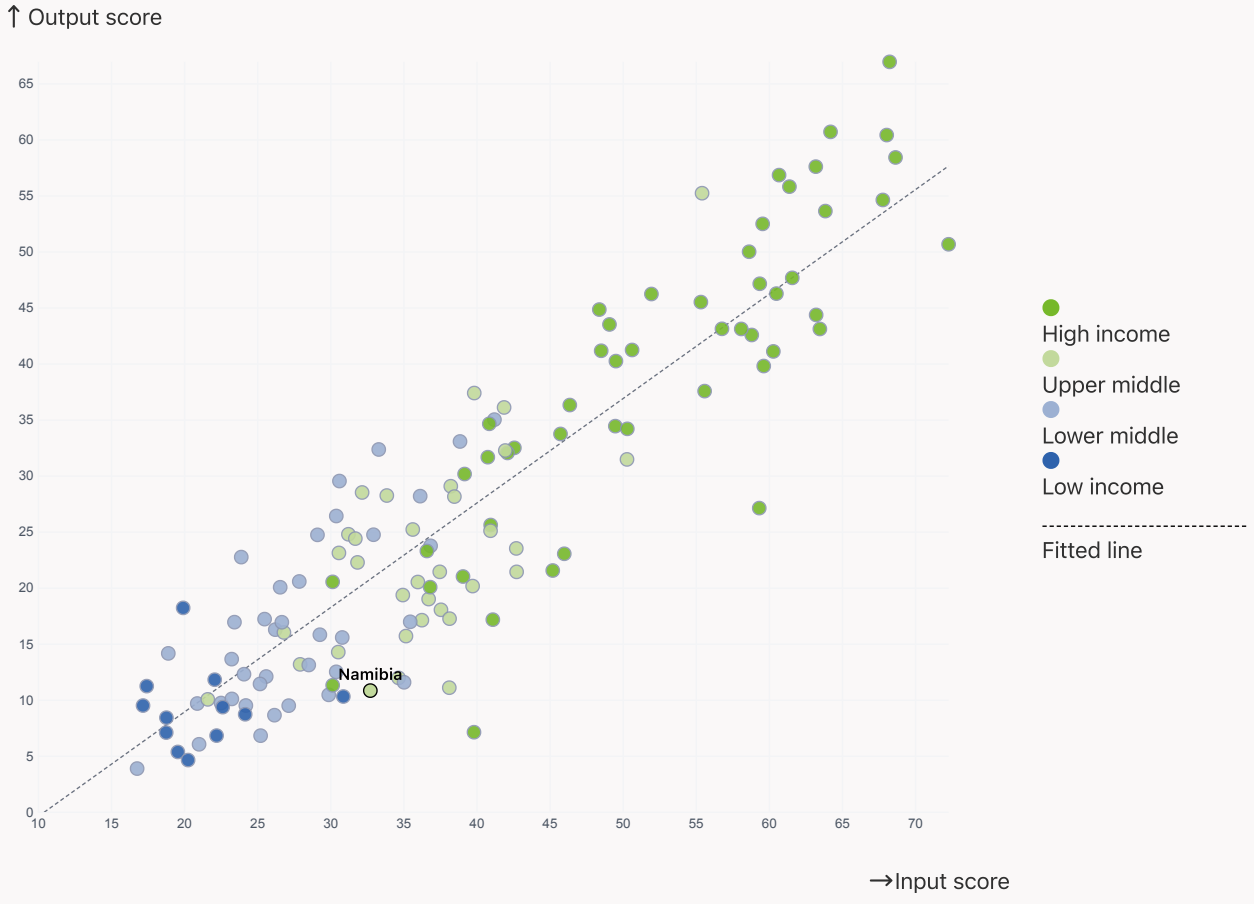


→ Effectively translating innovation investments into innovation outputs

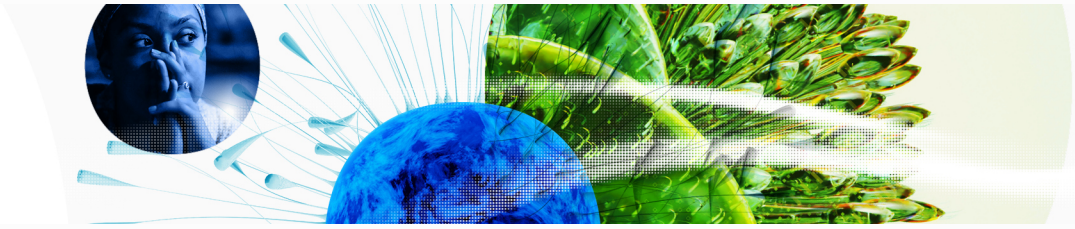
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

> Namibia produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs



Global Innovation Index 2023



→ Overview of Namibia'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 Namibia are those that rank above the GII (shown in blue) and the weakest are those that rank below.

> Highest rankings

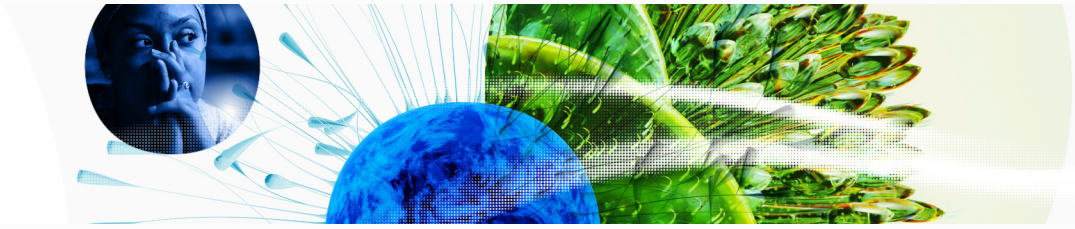
Namibia ranks highest in Institutions (50th), Human capital and research (76th) and Market sophistication (84th).

> Lowest rankings

Namibia ranks lowest in Knowledge and technology outputs (123rd), Creative outputs (104th) and Infrastructure (100th).

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

Global Innovation Index 2023



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

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

> Upper-Middle-Income economies

Namibia performs below the upper-middle-income group average in Knowledge and technology outputs, Creative outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure.

> Sub-Saharan Africa

Namibia performs above the regional average in Creative outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure, Institutions.

Knowledge and technology outputs

- Top 10 | Score: 58.96
- Upper middle income | Score: 22.36
- Sub-Saharan Africa | Score: 12.16
- Namibia | Score: 10.14

Creative outputs

- Top 10 | 56.09
- Upper middle income | 23.16
- Namibia | 11.47
- Sub-Saharan Africa | 10.36

Business sophistication

- Top 10 | 64.39
- Upper middle income | 29.27
- Namibia | 21.64
- Sub-Saharan Africa | 19.85

Market sophistication

- Top 10 | 61.93
- Upper middle income | 35.45
- Namibia | 28.96
- Sub-Saharan Africa | 20.00

Human capital and research

- Top 10 | 60.28
- Upper middle income | 29.68
- Namibia | 28.18
- Sub-Saharan Africa | 17.80

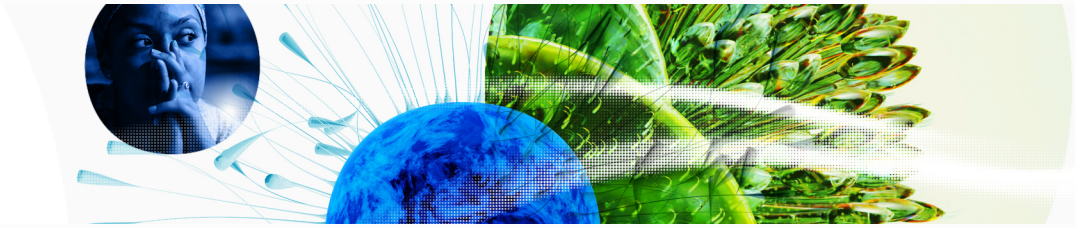
Infrastructure

- Top 10 | 62.83
- Upper middle income | 40.40
- Namibia | 28.71
- Sub-Saharan Africa | 23.36

Institutions

- Top 10 | 79.85
- Namibia | 56.26
- Upper middle income | 47.71
- Sub-Saharan Africa | 43.27

Global Innovation Index 2023



→ Innovation strengths and weaknesses in Namibia

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

> Namibia's main innovation strengths are **Expenditure on education, % GDP** (rank 1), **Applied tariff rate, weighted avg., %** (rank 14) and **Cost of redundancy dismissal** (rank 28).

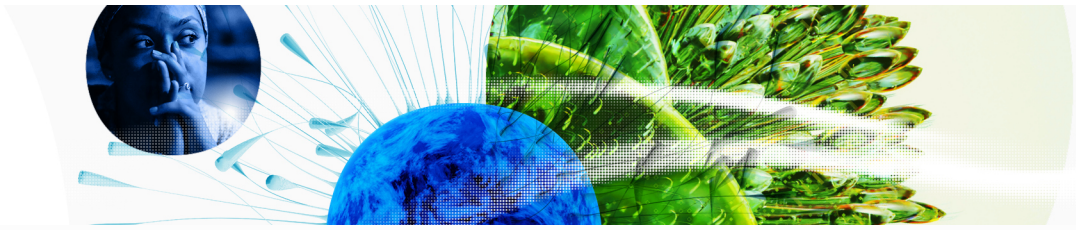
Strengths

Rank	Code	Indicator name
1	2.1.1	Expenditure on education, % GDP
14	4.3.1	Applied tariff rate, weighted avg., %
28	1.2.3	Cost of redundancy dismissal
37	3.3.2	Environmental performance
39	7.3.4	Mobile app creation/bn PPP$ GDP
39	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP
42	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69
42	5.3.3	ICT services imports, % total trade
48	1.2.2	Rule of law
49	4.1.2	Domestic credit to private sector, % GDP

Weaknesses

Rank	Code	Indicator name
127	4.3.3	Domestic market scale, bn PPP$
127	6.2.1	Labor productivity growth, %
118	3.2.3	Gross capital formation, % GDP
115	3.1.4	E-participation
112	2.2.2	Graduates in science and engineering, %
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$

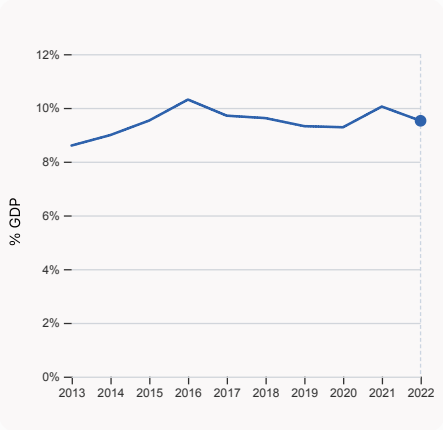
Global Innovation Index 2023



→ Namibia's innovation system

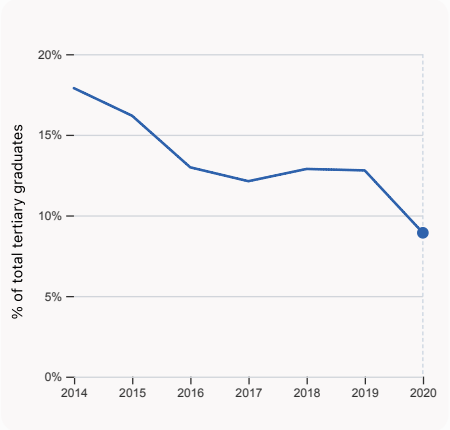
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Namibia



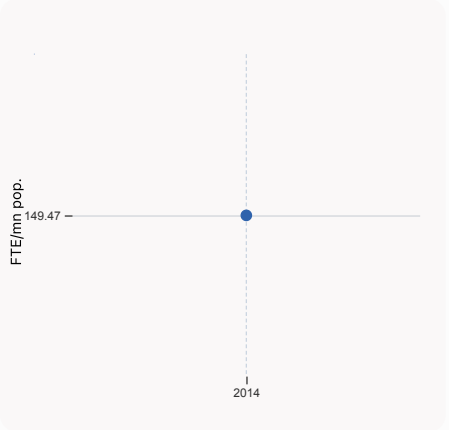
2.1.1 Expenditure on education, % GDP

was equal to 9.52% GDP in 2022, down by 0.53 percentage points from the year prior – and equivalent to an indicator rank of 1.



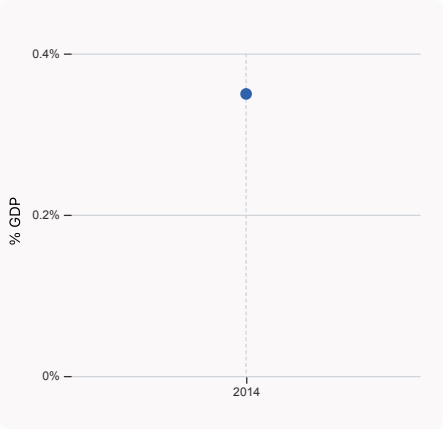
2.2.2 Graduates in science and engineering, %

was equal to 8.92% of total tertiary graduates in 2020, down by 3.87 percentage points from the year prior – and equivalent to an indicator rank of 112.



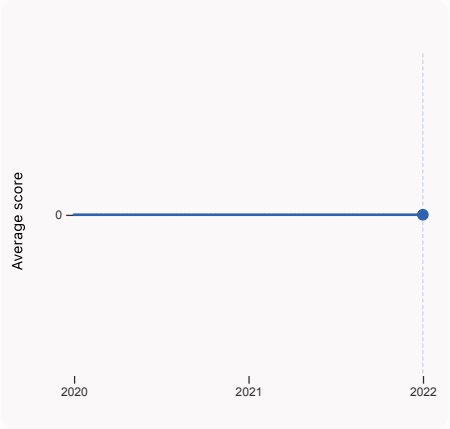
2.3.1 Researchers, FTE/mn pop.

was equal to 149.47 FTE/mn pop. in 2014, equivalent to an indicator rank of 86.



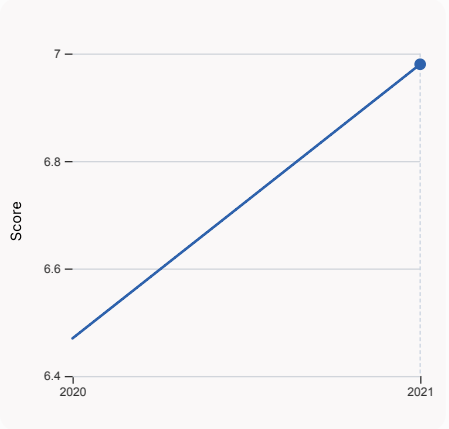
2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.35 % GDP in 2014, equivalent to an indicator rank of 71.



2.3.4 QS university ranking, top 3

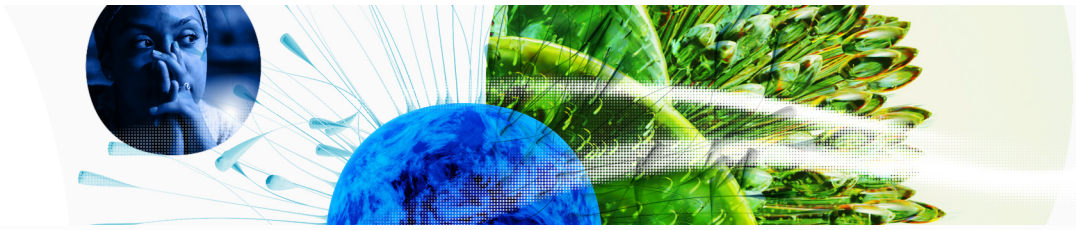
was equal to an average score of 0 for the top 3 universities in 2022, equivalent to an indicator rank of 71.

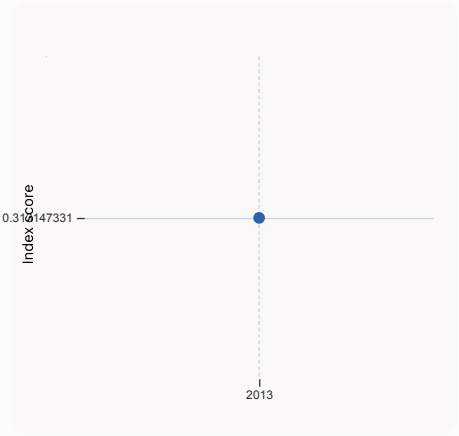


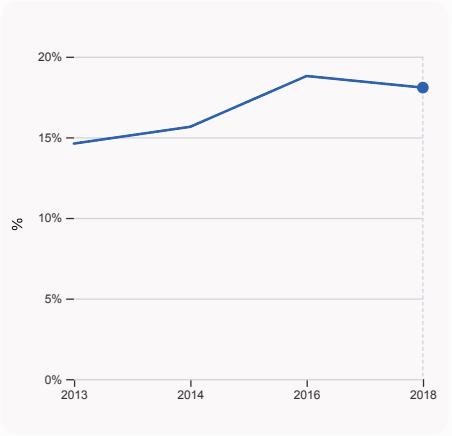
3.1.1 ICT access

was equal to a score of 6.98 in 2021, up by 7.88% from the year prior – and equivalent to an indicator rank of 102.

Global Innovation Index 2023







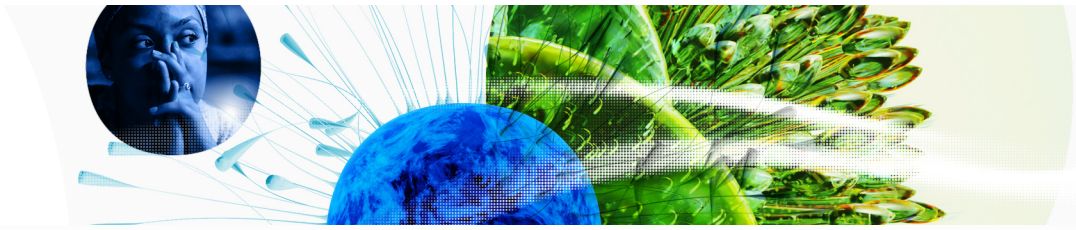
4.3.2 Domestic industry diversification

was equal to an index score of 0.313 in 2013, equivalent to an indicator rank of 97.

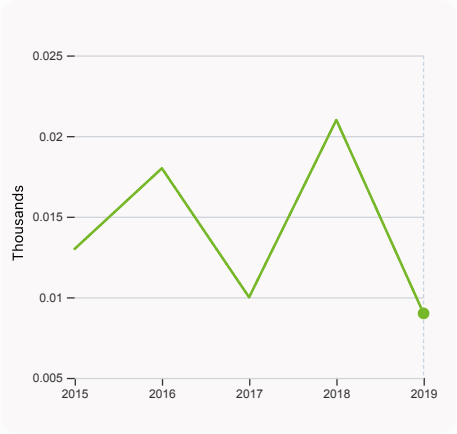
5.1.1 Knowledge-intensive employment, %

was equal to 18.08% in 2018, down by 0.72 percentage points from the year prior – and equivalent to an indicator rank of 79.

Global Innovation Index 2023

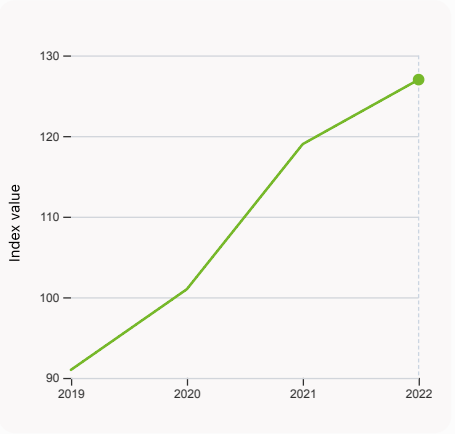


> Innovation outputs in Namibia



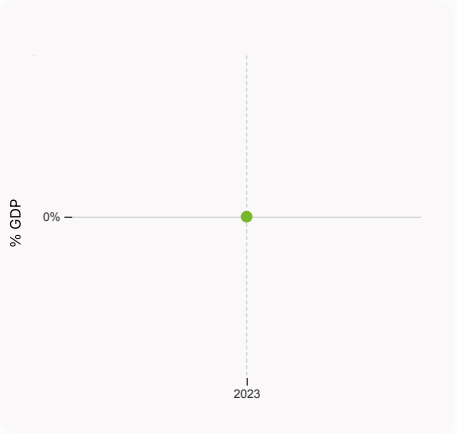
6.1.1 Patents by origin

was equal to 0.009 Thousands in 2019, down by 57.14% from the year prior – and equivalent to an indicator rank of 88.



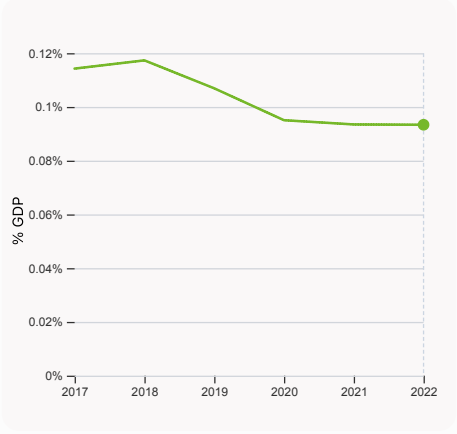
6.1.5 Citable documents H-index

was equal to an index value of 127 in 2022, up by 6.72% from the year prior – and equivalent to an indicator rank of 106.



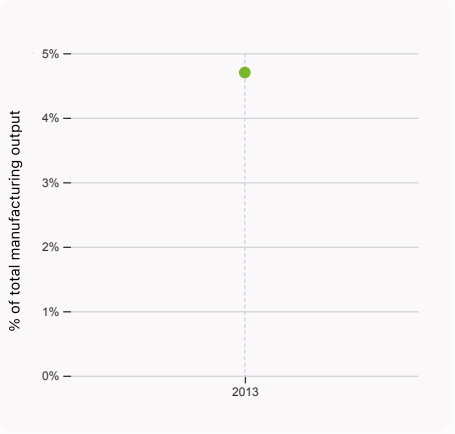
6.2.2 Unicorn valuation, % GDP

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



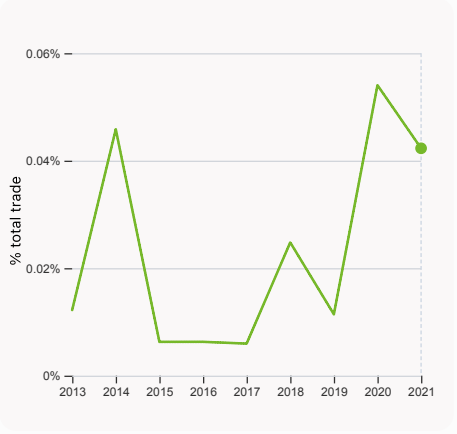
6.2.3 Software spending, % GDP

was equal to 0.093% GDP in 2022, down by 0.00012 percentage points from the year prior – and equivalent to an indicator rank of 92.



6.2.4 High-tech manufacturing, %

was equal to 4.7 % of total manufacturing output in 2013 – and equivalent to an indicator rank of 102.



6.3.1 Intellectual property receipts, % total trade

was equal to 0.042% total trade in 2021, down by 0.012 percentage points from the year prior – and equivalent to an indicator rank of 77.

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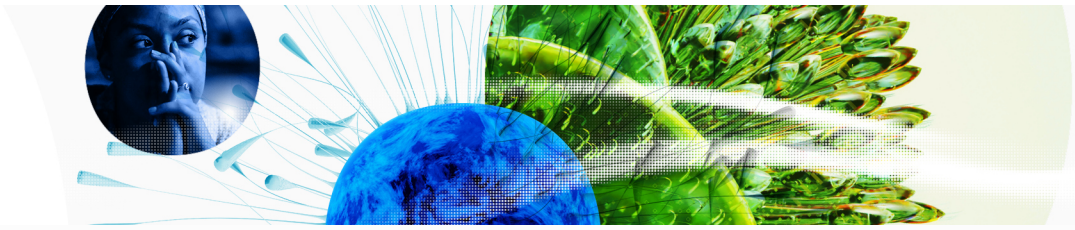
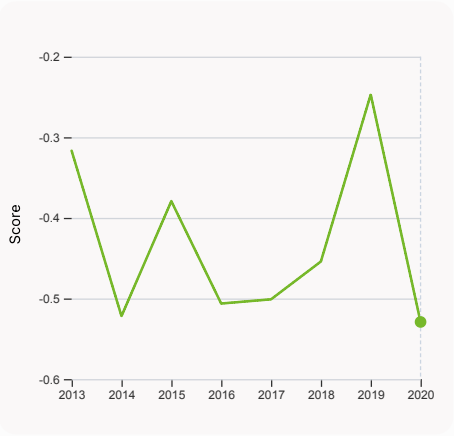
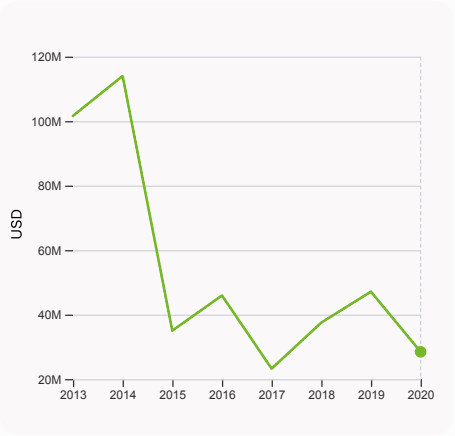




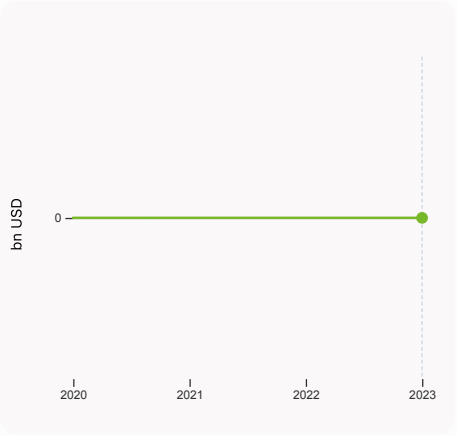
6.3.2 Production and export complexity

was equal to a score of -0.529 in 2020, down by 114.21% from the year prior – and equivalent to an indicator rank of 91.



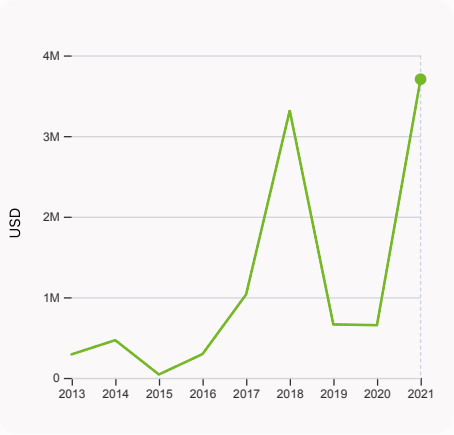
6.3.3 High-tech exports

was equal to 28,456,108 USD in 2020, down by 39.61% from the year prior – and equivalent to an indicator rank of 80.



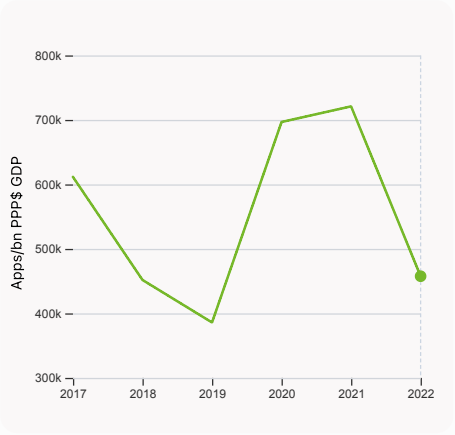
7.1.3 Global brand value, top 5,000

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 3,705,000 USD in 2021, up by 466.51% from the year prior – and equivalent to an indicator rank of 91.



7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 457,632.81 Apps/bn PPP$ GDP in 2022, down by 36.53% from the year prior – and equivalent to an indicator rank of 39.

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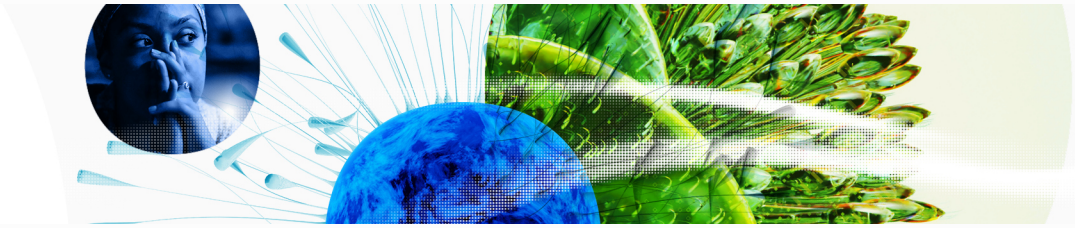


Namibia

GII 2023 rank
96

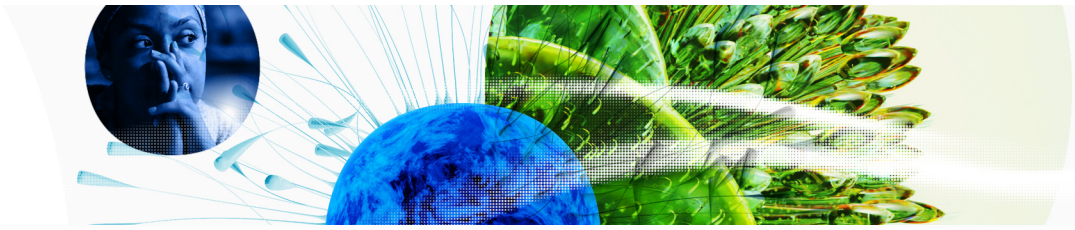
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
111	80	Upper middle	SSA	2.6	28.0	10,790.6

	Score / Value	Rank	
Institutions	**56.3**	**50**	●◆
1.1 Institutional environment	**47.0**	**60**	
1.1.1 Operational stability for businesses*	55.6	56	
1.1.2 Government effectiveness*	38.4	64	
1.2 Regulatory environment	**71.4**	**41**	●◆
1.2.1 Regulatory quality*	42.0	73	
1.2.2 Rule of law*	50.3	48	●◆
1.2.3 Cost of redundancy dismissal	9.7	28	●◆
1.3 Business environment	**50.4**	**[53]**	
1.3.1 Policies for doing business†	50.4	60	
1.3.2 Entrepreneurship policies and culture†	n/a	n/a	
Human capital and research	**28.2**	**76**	
2.1 Education	**74.7**	**[2]**	
2.1.1 Expenditure on education, % GDP	9.5	1	●◆
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	25.9	112	◇
2.2 Tertiary education	**8.0**	**115**	◇
2.2.1 Tertiary enrolment, % gross	27.3	89	◇
2.2.2 Graduates in science and engineering, %	8.9	112	○◇
2.2.3 Tertiary inbound mobility, %	3.2	62	
2.3 Research and development (R&D)	**1.9**	**91**	
2.3.1 Researchers, FTE/mn pop.	149.5	86	
2.3.2 Gross expenditure on R&D, % GDP	0.3	71	
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	**28.7**	**100**	◇
3.1 Information and communication technologies (ICTs)	**41.6**	**108**	◇
3.1.1 ICT access*	54.4	102	◇
3.1.2 ICT use*	51.3	102	◇
3.1.3 Government's online service*	37.2	113	◇
3.1.4 E-participation*	23.3	115	○◇
3.2 General infrastructure	**15.2**	**106**	
3.2.1 Electricity output, GWh/mn pop.	771.3	103	◇
3.2.2 Logistics performance*	36.4	65	
3.2.3 Gross capital formation, % GDP	15.1	118	○◇
3.3 Ecological sustainability	**29.4**	**56**	
3.3.1 GDP/unit of energy use	11.8	49	
3.3.2 Environmental performance*	54.2	37	●◆
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.8	72	
Market sophistication	**29.0**	**[84]**	
4.1 Credit	**26.6**	**[74]**	
4.1.1 Finance for startups and scaleups†	n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP	72.8	49	●◆
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**7.0**	**[66]**	
4.2.1 Market capitalization, % GDP	18.8	60	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.3 VC recipients, deals/bn PPP$ GDP	n/a	n/a	
4.2.4 VC received, value, % GDP	n/a	n/a	
4.3 Trade, diversification, and market scale	**53.3**	**80**	
4.3.1 Applied tariff rate, weighted avg., %	1.3	14	●◆
4.3.2 Domestic industry diversification	67.5	97	
4.3.3 Domestic market scale, bn PPP$	28.0	127	○

	Score / Value	Rank	
Business sophistication	**21.6**	**99**	◇
5.1 Knowledge workers	**18.0**	**106**	◇
5.1.1 Knowledge-intensive employment, %	18.1	79	
5.1.2 Firms offering formal training, %	25.4	65	
5.1.3 GERD performed by business, % GDP	0.0	75	
5.1.4 GERD financed by business, %	11.1	73	
5.1.5 Females employed w/advanced degrees, %	7.4	88	◇
5.2 Innovation linkages	**21.9**	**65**	
5.2.1 University-industry R&D collaboration†	47.8	54	
5.2.2 State of cluster development†	38.0	77	
5.2.3 GERD financed by abroad, % GDP	0.1	46	
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	39	●◆
5.2.5 Patent families/bn PPP$ GDP	0.1	54	
5.3 Knowledge absorption	**25.1**	**103**	◇
5.3.1 Intellectual property payments, % total trade	0.0	110	◇
5.3.2 High-tech imports, % total trade	7.3	81	
5.3.3 ICT services imports, % total trade	1.8	42	●◆
5.3.4 FDI net inflows, % GDP	0.8	102	◇
5.3.5 Research talent, % in businesses	6.9	65	
Knowledge and technology outputs	**10.1**	**123**	○◇
6.1 Knowledge creation	**8.2**	**91**	
6.1.1 Patents by origin/bn PPP$ GDP	0.4	88	
6.1.2 PCT patents by origin/bn PPP$ GDP	0.1	52	
6.1.3 Utility models by origin/bn PPP$ GDP	0.2	41	
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a	
6.1.5 Citable documents H-index	4.7	106	
6.2 Knowledge impact	**9.4**	**128**	○◇
6.2.1 Labor productivity growth, %	-2.1	127	○◇
6.2.2 Unicorn valuation, % GDP	0.0	48	○◇
6.2.3 Software spending, % GDP	0.1	92	
6.2.4 High-tech manufacturing, %	4.7	102	
6.3 Knowledge diffusion	**12.8**	**95**	◇
6.3.1 Intellectual property receipts, % total trade	0.0	77	
6.3.2 Production and export complexity	41.4	91	
6.3.3 High-tech exports, % total trade	0.7	80	
6.3.4 ICT services exports, % total trade	0.4	105	
6.3.5 ISO 9001 quality/bn PPP$ GDP	1.9	89	
Creative outputs	**11.5**	**104**	◇
7.1 Intangible assets	**11.2**	**105**	◇
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	14.4	101	◇
7.1.3 Global brand value, top 5,000	0.0	74	○◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	1.4	55	
7.2 Creative goods and services	**1.9**	**[105]**	
7.2.1 Cultural and creative services exports, % total trade	0.1	91	
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 Creative goods exports, % total trade	0.2	78	
7.3 Online creativity	**21.5**	**61**	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	10.0	42	●◆
7.3.2 Country-code TLDs/th pop. 15-69	0.9	94	
7.3.3 GitHub commits/mn pop. 15-69	2.0	100	
7.3.4 Mobile app creation/bn PPP$ GDP	73.2	39	●◆

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 Namibia.

> Namibia has missing data for twelve indicators and outdated data for twenty indicators.

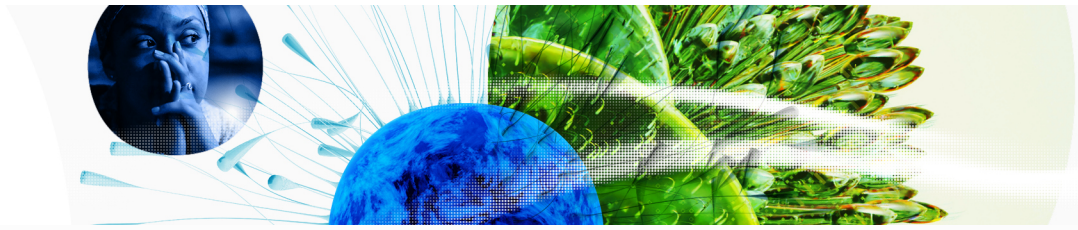
> Missing data for Namibia

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
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
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
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
4.2.3	VC recipients, deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % GDP	n/a	2022	Refinitiv; International Monetary Fund
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.2.2	National feature films/mn pop. 15-69	n/a	2021	OMDIA; United Nations, World Population Prospects
7.2.3	Entertainment and media market/th pop. 15-69	n/a	2022	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

> Outdated data for Namibia

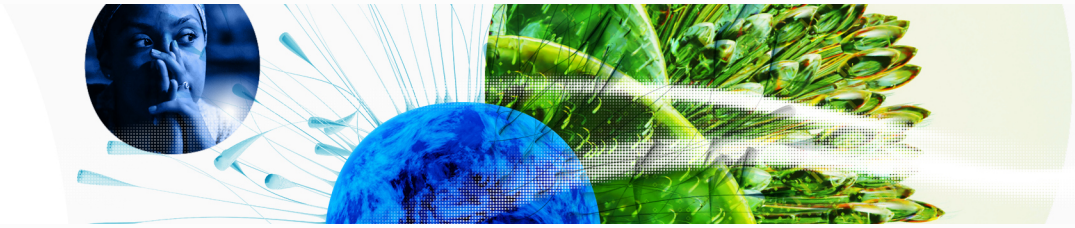
Code	Indicator name	Economy Year	Model Year	Source
2.1.5	Pupil-teacher ratio, secondary	2017	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2014	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2023



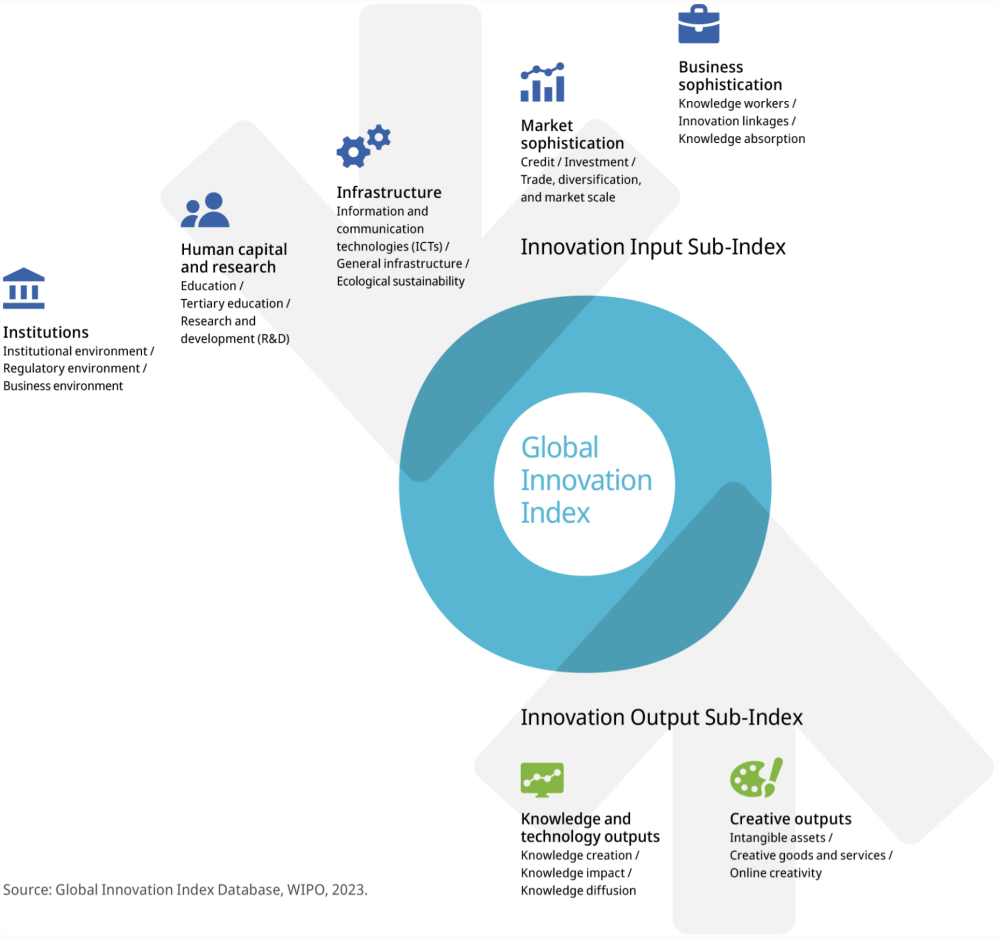
Code	Indicator name	Economy Year	Model Year	Source
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
4.3.2	Domestic industry diversification	2013	2020	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2018	2022	International Labour Organization
5.1.2	Firms offering formal training, %	2014	2019	World Bank Enterprise Surveys
5.1.3	GERD performed by business, % GDP	2014	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2014	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2018	2022	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2014	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.2	High-tech imports, % total trade	2020	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2014	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.1	Patents by origin/bn PPP$ GDP	2019	2021	World Intellectual Property Organization; International Monetary Fund
6.1.3	Utility models by origin/bn PPP$ GDP	2020	2021	World Intellectual Property Organization; International Monetary Fund
6.2.4	High-tech manufacturing, %	2013	2020	United Nations Industrial Development Organization
6.3.3	High-tech exports, % total trade	2020	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development; Trade Data Monitor.
7.1.2	Trademarks by origin/bn PPP$ GDP	2020	2021	World Intellectual Property Organization; International Monetary Fund
7.1.4	Industrial designs by origin/bn PPP$ GDP	2020	2021	World Intellectual Property Organization; International Monetary Fund
7.2.4	Creative goods exports, % total trade	2020	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.