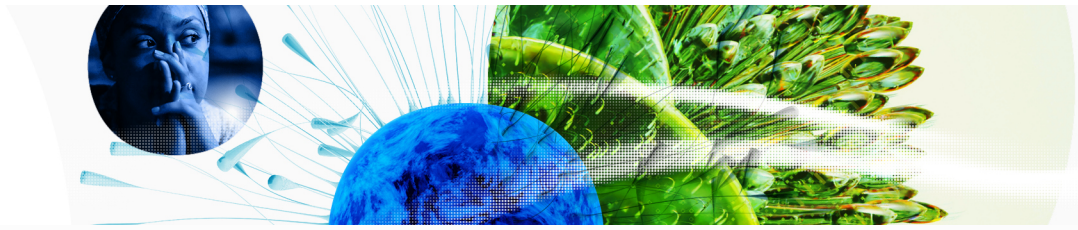
Global Innovation Index 2023



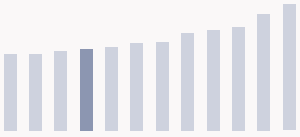
The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

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

Guinea ranking in the Global Innovation Index 2023

> Guinea ranks 128th among the 132 economies featured in the GII 2023.

> Guinea ranks 9th among the 12 low-income group economies.



> Guinea ranks 24th among the 28 economies in Sub-Saharan Africa.

> Guinea GII Ranking (2020-2023)

The table shows the rankings of Guinea 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 Guinea in the GII 2023 is between ranks 124 and 129.

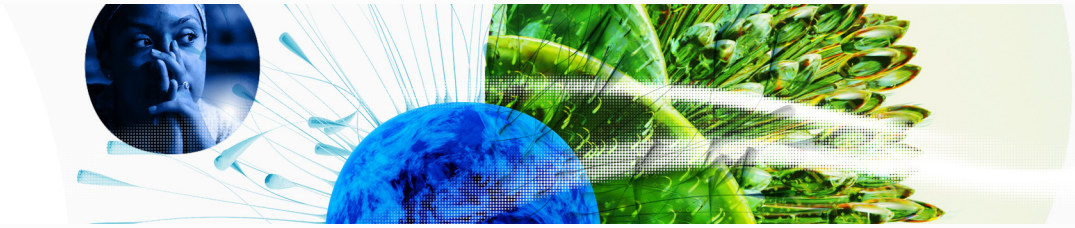
	GII Position	Innovation Inputs	Innovation Outputs
2020	130th	128th	122nd
2021	130th	130th	126th
2022	132nd	131st	128th
2023	128th	131st	119th

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

This year Guinea ranks 131st in innovation inputs. This position is the same as last year.

Guinea ranks 119th in innovation outputs. This position is higher than last year.

Global Innovation Index 2023

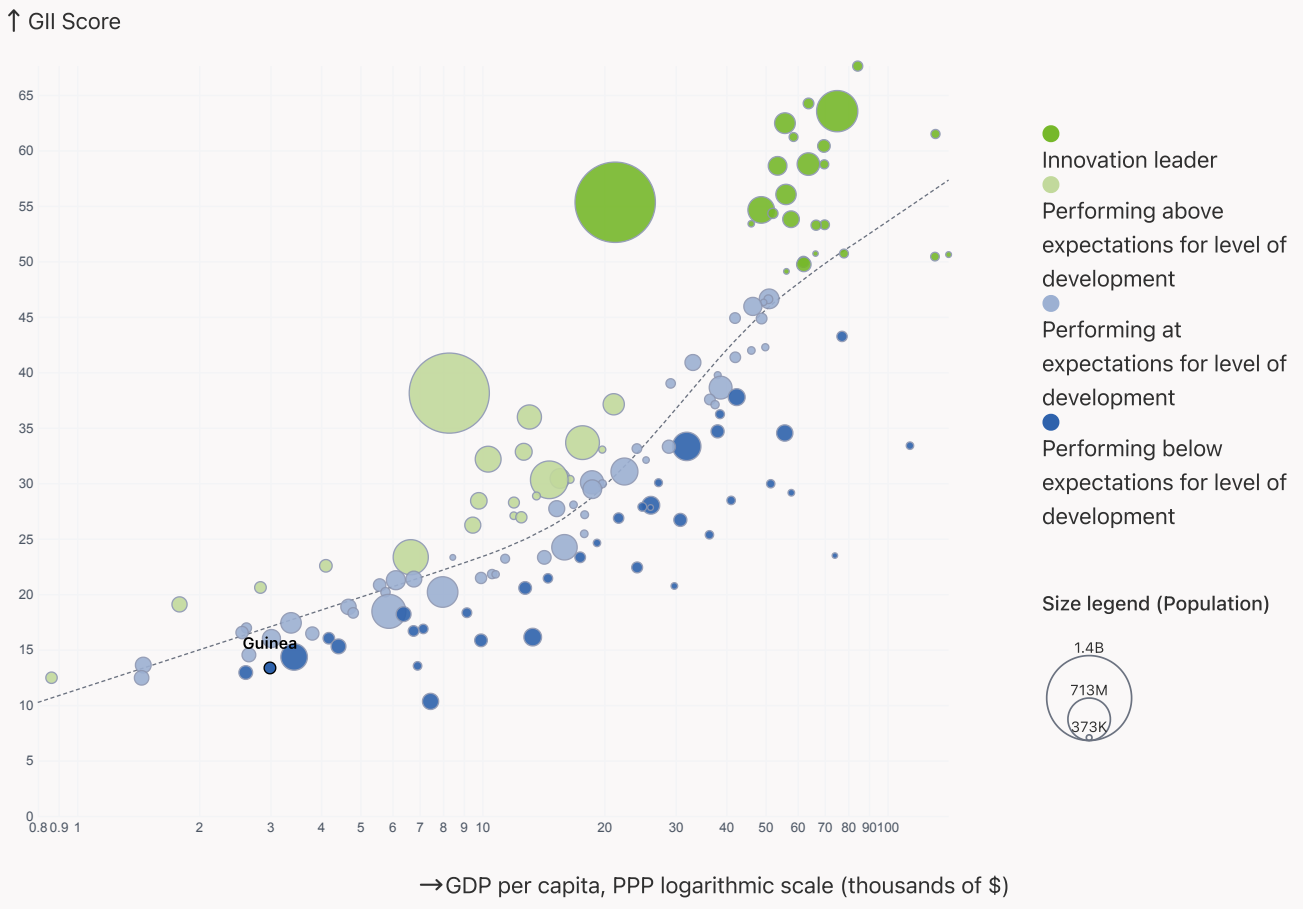


→ Expected vs. observed innovation performance

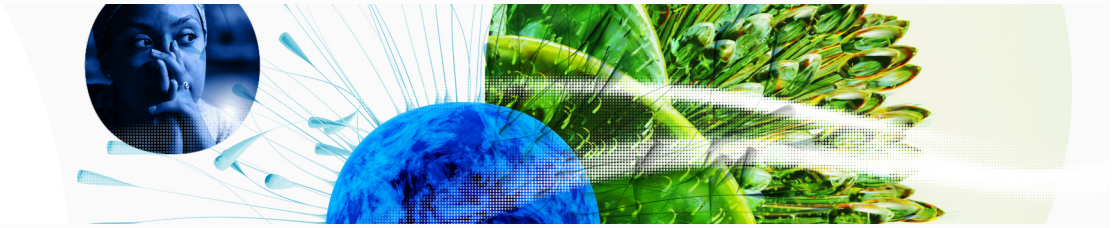
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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

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

> Innovation overperformers relative to their economic development



Global Innovation Index 2023

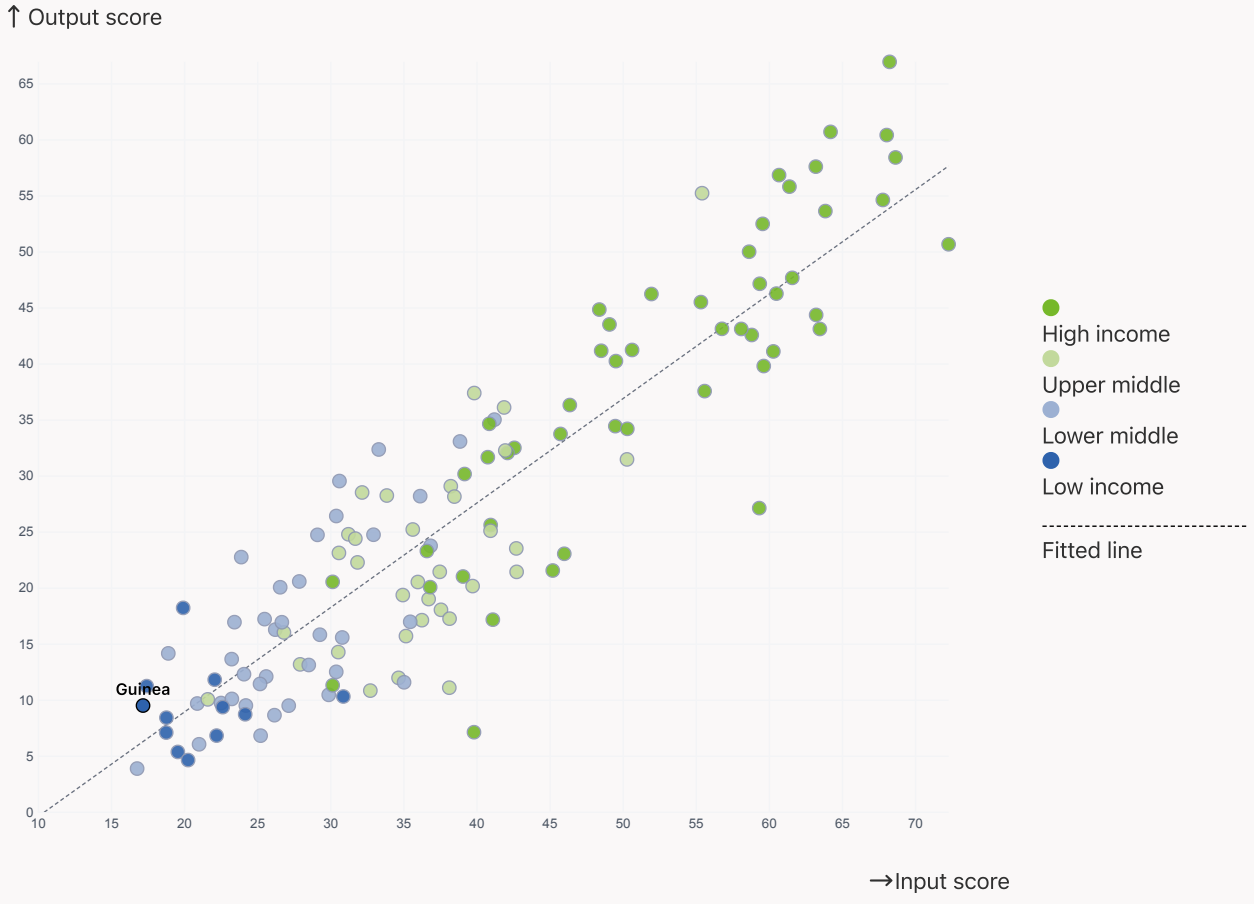


→ Effectively translating innovation investments into innovation outputs

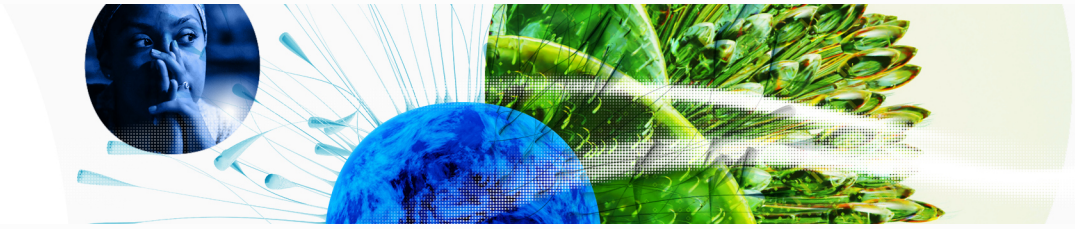
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

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

> Relationship between innovation inputs and outputs

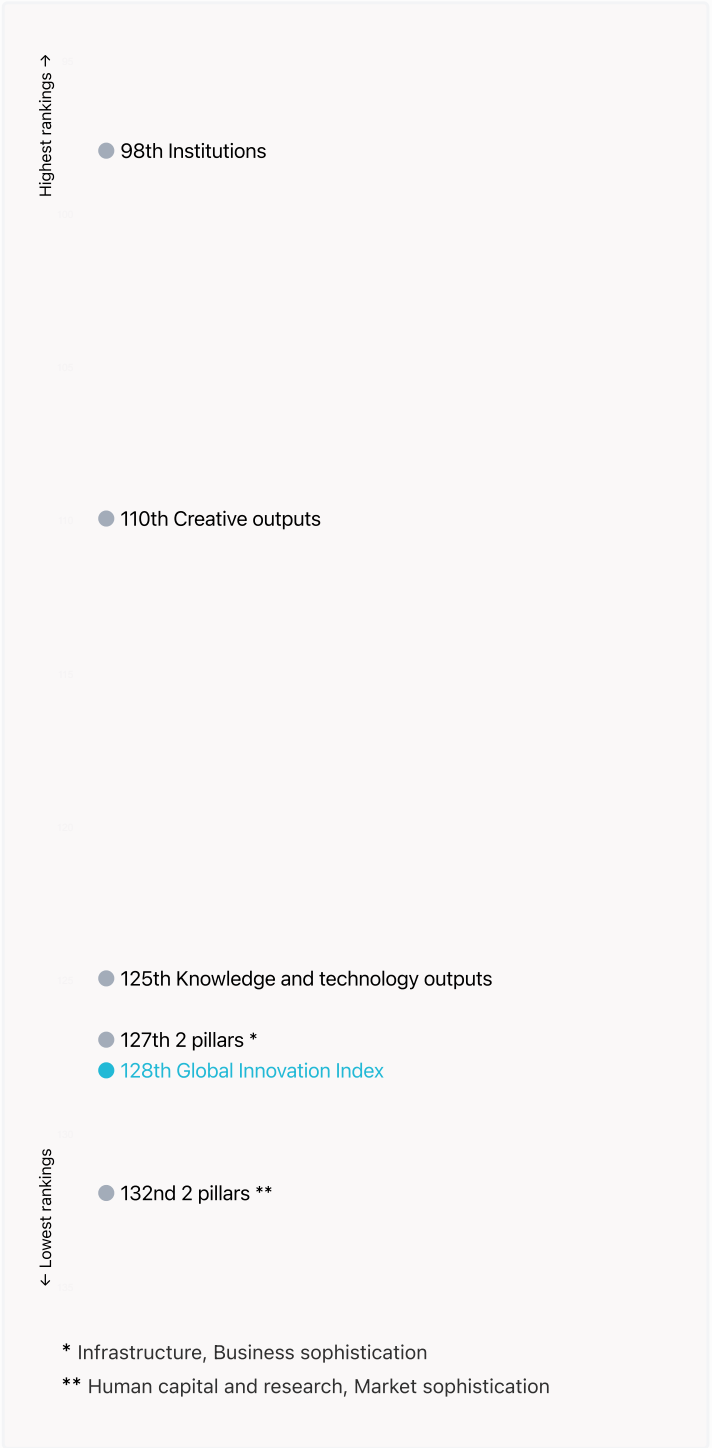


Global Innovation Index 2023



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



* Infrastructure, Business sophistication

** Human capital and research, Market sophistication

> Highest rankings

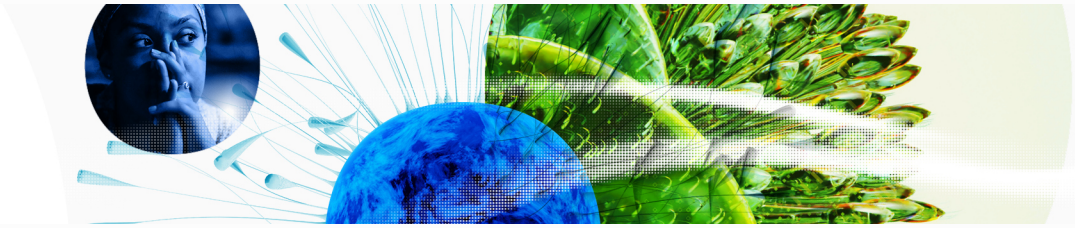
Guinea ranks highest in Institutions (98th), Creative outputs (110th), Knowledge and technology outputs (125th) and Infrastructure, Business sophistication (127th).

> Lowest rankings

Guinea ranks lowest in Human capital and research, Market sophistication (132nd), Infrastructure, Business sophistication (127th) and Knowledge and technology outputs (125th).

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

Global Innovation Index 2023



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

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

> Low-Income economies

Guinea performs below the low-income group average in Knowledge and technology outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure.

> Sub-Saharan Africa

Guinea performs below the regional average in all the pillars.

Knowledge and technology outputs

- Top 10 | Score: 58.96
- Sub-Saharan Africa | Score: 12.16
- Low income | Score: 11.03
- Guinea | Score: 9.81

Creative outputs

- Top 10 | 56.09
- Sub-Saharan Africa | 10.36
- Guinea | 9.12
- Low income | 7.48

Business sophistication

- Top 10 | 64.39
- Sub-Saharan Africa | 19.85
- Low income | 16.81
- Guinea | 15.57

Market sophistication

- Top 10 | 61.93
- Sub-Saharan Africa | 20.00
- Low income | 15.67
- Guinea | 6.95

Human capital and research

- Top 10 | 60.28
- Sub-Saharan Africa | 17.80
- Low income | 15.55
- Guinea | 7.88

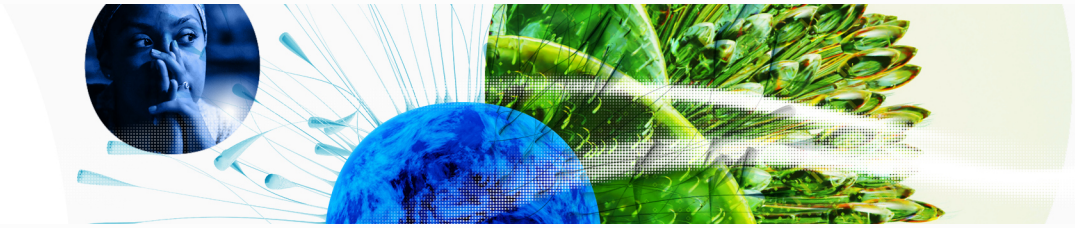
Infrastructure

- Top 10 | 62.83
- Sub-Saharan Africa | 23.36
- Low income | 19.43
- Guinea | 16.95

Institutions

- Top 10 | 79.85
- Sub-Saharan Africa | 43.27
- Guinea | 38.65
- Low income | 38.42

Global Innovation Index 2023



→ Innovation strengths and weaknesses in Guinea

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

> Guinea's main innovation strengths are **Labor productivity growth, %** (rank 18), **Cost of redundancy dismissal** (rank 30) and **Loans from microfinance institutions, % GDP** (rank 40).

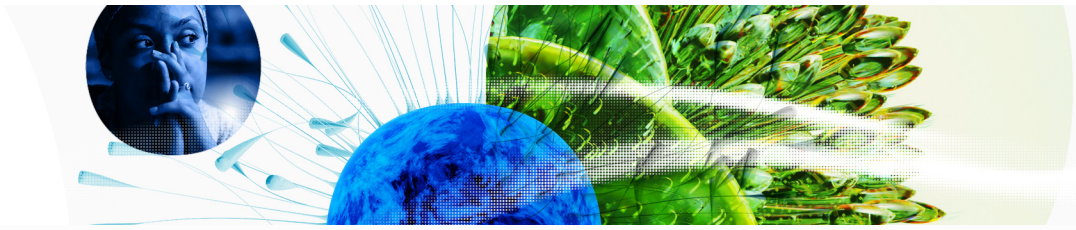
Strengths

Rank	Code	Indicator name
18	6.2.1	Labor productivity growth, %
30	1.2.3	Cost of redundancy dismissal
40	4.1.3	Loans from microfinance institutions, % GDP
53	7.1.4	Industrial designs by origin/bn PPP$ GDP
59	5.2.1	University-industry R&D collaboration
66	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP
86	6.1.2	PCT patents by origin/bn PPP$ GDP
89	1.3.1	Policies for doing business
97	5.2.2	State of cluster development
99	5.3.4	FDI net inflows, % GDP

Weaknesses

Rank	Code	Indicator name
131	7.3.2	Country-code TLDs/th pop. 15-69
131	7.3.3	GitHub commits/mn pop. 15-69
131	5.3.2	High-tech imports, % total trade
128	4.1.2	Domestic credit to private sector, % GDP
118	5.3.1	Intellectual property payments, % total trade
114	6.3.1	Intellectual property receipts, % total trade
95	5.2.5	Patent families/bn PPP$ GDP
75	6.1.3	Utility models by origin/bn PPP$ GDP
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$

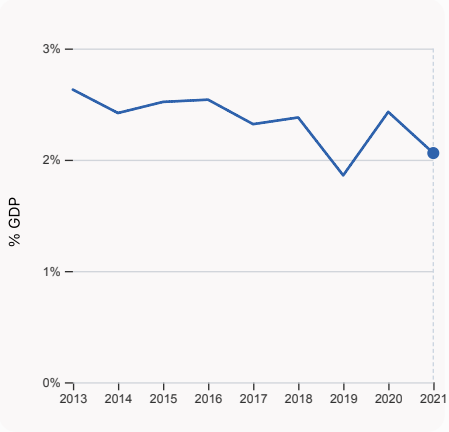
Global Innovation Index 2023



→ Guinea's innovation system

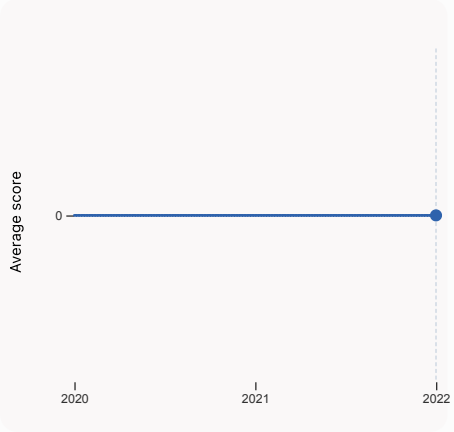
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Guinea



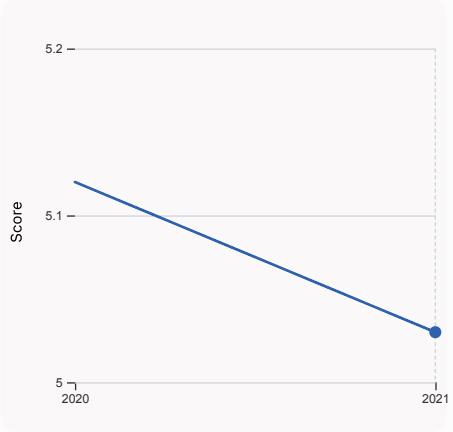
2.1.1 Expenditure on education, % GDP

was equal to 2.06% GDP in 2021, down by 0.37 percentage points from the year prior – and equivalent to an indicator rank of 118.



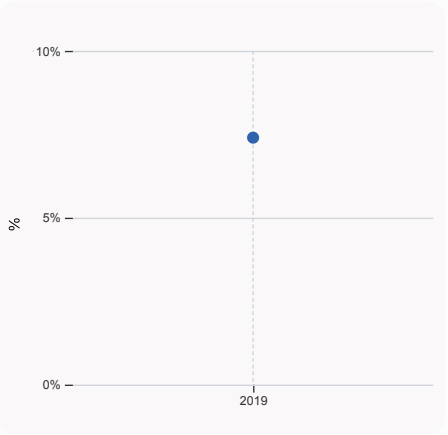
2.3.4 QS university ranking, top 3

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

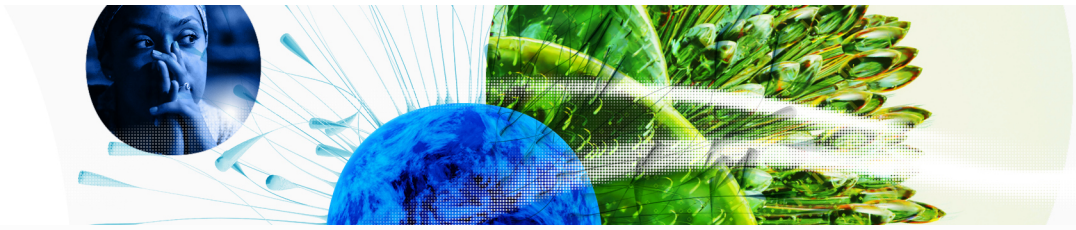
was equal to a score of 5.03 in 2021, down by 1.76% from the year prior – and equivalent to an indicator rank of 124.



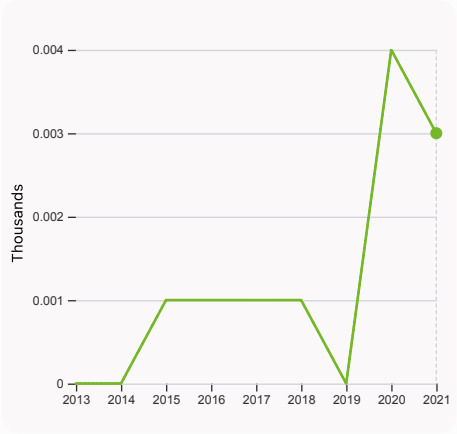
5.1.1 Knowledge-intensive employment, %

was equal to 7.4 % in 2019, equivalent to an indicator rank of 114.

Global Innovation Index 2023

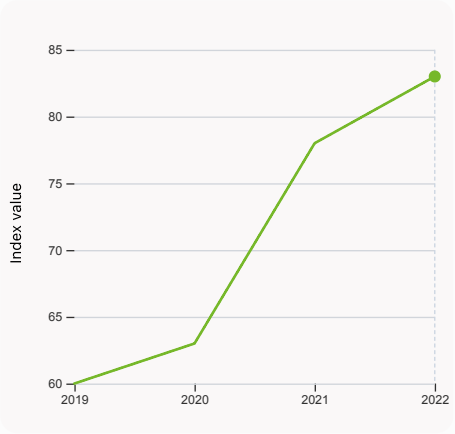


> Innovation outputs in Guinea



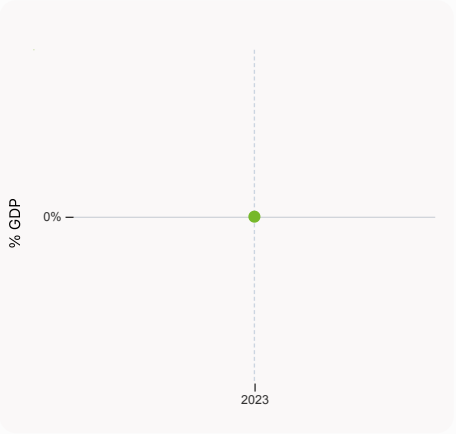
6.1.1 Patents by origin

was equal to 0.003 Thousands in 2021, down by 25% from the year prior – and equivalent to an indicator rank of 114.



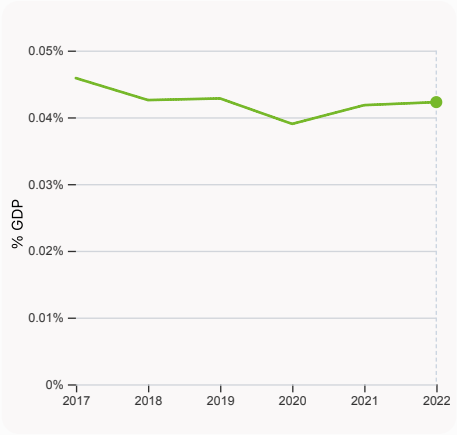
6.1.5 Citable documents H-index

was equal to an index value of 83 in 2022, up by 6.41% from the year prior – and equivalent to an indicator rank of 125.



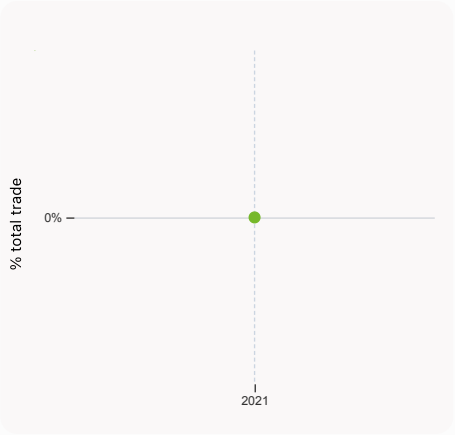
6.2.2 Unicorn valuation, % GDP

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



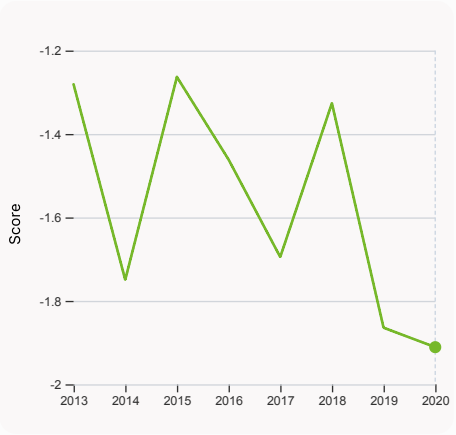
6.2.3 Software spending, % GDP

was equal to 0.042% GDP in 2022, up by 0.00045 percentage points from the year prior – and equivalent to an indicator rank of 109.



6.3.1 Intellectual property receipts, % total trade

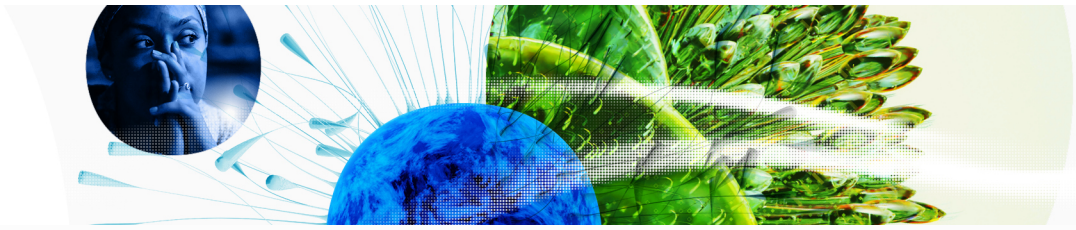
was equal to 0 % total trade in 2021 – and equivalent to an indicator rank of 114.

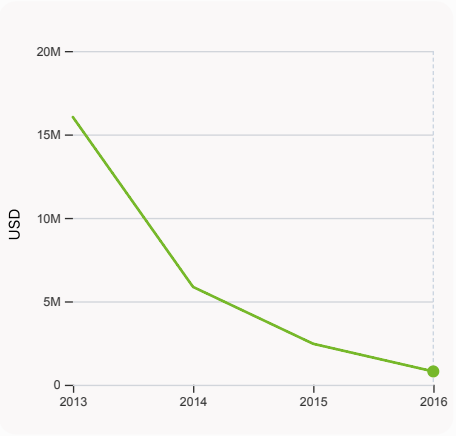


6.3.2 Production and export complexity

was equal to a score of -1.911 in 2020, down by 2.5% from the year prior – and equivalent to an indicator rank of 119.

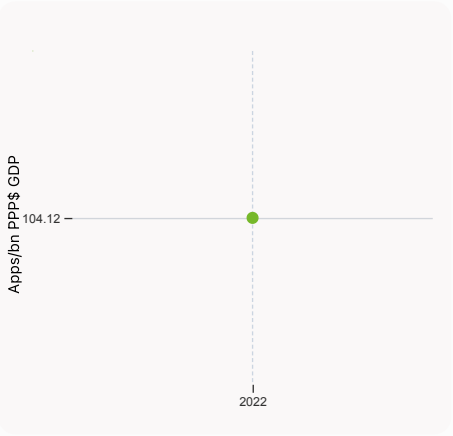
Global Innovation Index 2023





6.3.3 High-tech exports

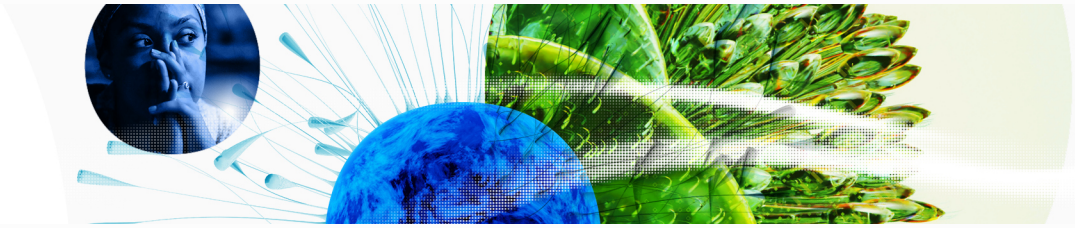
was equal to 799,548 USD in 2016, down by 67.44% from the year prior – and equivalent to an indicator rank of 130.



7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 104.12 Apps/bn PPP$ GDP in 2022 – and equivalent to an indicator rank of 121.

Global Innovation Index 2023



Guinea

GII 2023 rank **128**

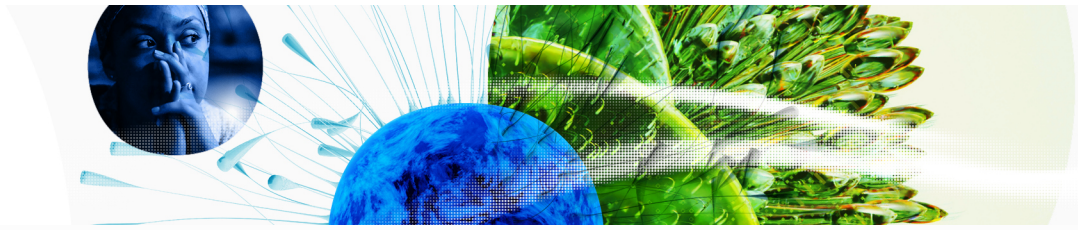
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
119	131	Low	SSA	13.9	43.9	2,993.1

	Score / Value	Rank
Institutions	**38.7**	**98**
1.1 Institutional environment	**23.4**	**116**
1.1.1 Operational stability for businesses*	35.4	108
1.1.2 Government effectiveness*	11.5	124
1.2 Regulatory environment	**53.9**	**90**
1.2.1 Regulatory quality*	17.1	125 ◇
1.2.2 Rule of law*	6.6	127 ◇
1.2.3 Cost of redundancy dismissal	10.1	30 ●
1.3 Business environment	**38.6**	**92**
1.3.1 Policies for doing business†	38.6	89 ●
1.3.2 Entrepreneurship policies and culture†	n/a	n/a
Human capital and research	**7.9**	**132**
2.1 Education	**22.0**	**126** ◇
2.1.1 Expenditure on education, % GDP	2.1	118 ◇
2.1.2 Government funding/pupil, secondary, % GDP/cap	8.4	94 ◇
2.1.3 School life expectancy, years	9.0	107
2.1.4 PISA scales in reading, maths and science	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	22.1	105
2.2 Tertiary education	**1.6**	**126**
2.2.1 Tertiary enrolment, % gross	6.7	121
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)	**0.0**	**119**
2.3.1 Researchers, FTE/mn pop.	n/a	n/a
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a
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	**16.9**	**127**
3.1 Information and communication technologies (ICTs)	**26.8**	**125**
3.1.1 ICT access*	24.9	124
3.1.2 ICT use*	17.4	127
3.1.3 Government's online service*	38.3	110
3.1.4 E-participation*	26.7	106
3.2 General infrastructure	**12.9**	**115**
3.2.1 Electricity output, GWh/mn pop.	n/a	n/a
3.2.2 Logistics performance*	18.2	89
3.2.3 Gross capital formation, % GDP	16.5	116
3.3 Ecological sustainability	**11.1**	**123**
3.3.1 GDP/unit of energy use	n/a	n/a
3.3.2 Environmental performance*	21.5	105
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.2	119
Market sophistication	**6.9**	**132** ◇
4.1 Credit	**3.0**	**128**
4.1.1 Finance for startups and scaleups†	n/a	n/a
4.1.2 Domestic credit to private sector, % GDP	10.0	128 ○ ◇
4.1.3 Loans from microfinance institutions, % GDP	0.4	40 ●
4.2 Investment	**n/a**	**n/a**
4.2.1 Market capitalization, % GDP	n/a	n/a
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	**10.9**	**129** ◇
4.3.1 Applied tariff rate, weighted avg., %	12.2	130 ◇
4.3.2 Domestic industry diversification	n/a	n/a
4.3.3 Domestic market scale, bn PPP$	43.9	114

	Score / Value	Rank
Business sophistication	**15.6**	**127**
5.1 Knowledge workers	**9.0**	**124**
5.1.1 Knowledge-intensive employment, %	7.4	114
5.1.2 Firms offering formal training, %	16.0	90 ◇
5.1.3 GERD performed by business, % GDP	n/a	n/a
5.1.4 GERD financed by business, %	n/a	n/a
5.1.5 Females employed w/advanced degrees, %	2.2	107
5.2 Innovation linkages	**20.3**	**70**
5.2.1 University-industry R&D collaboration†	46.3	59 ●
5.2.2 State of cluster development†	28.6	97 ●
5.2.3 GERD financed by abroad, % GDP	n/a	n/a
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	66 ●
5.2.5 Patent families/bn PPP$ GDP	0.0	95 ○ ◇
5.3 Knowledge absorption	**17.4**	**132** ◇
5.3.1 Intellectual property payments, % total trade	0.0	118 ○ ◇
5.3.2 High-tech imports, % total trade	2.4	131 ○ ◇
5.3.3 ICT services imports, % total trade	0.3	124 ◇
5.3.4 FDI net inflows, % GDP	0.9	99 ●
5.3.5 Research talent, % in businesses	n/a	n/a
Knowledge and technology outputs	**9.8**	**125**
6.1 Knowledge creation	**1.8**	**125** ◇
6.1.1 Patents by origin/bn PPP$ GDP	0.1	114
6.1.2 PCT patents by origin/bn PPP$ GDP	0.0	86 ●
6.1.3 Utility models by origin/bn PPP$ GDP	0.0	75 ○ ◇
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a
6.1.5 Citable documents H-index	2.2	125
6.2 Knowledge impact	**24.9**	**73**
6.2.1 Labor productivity growth, %	2.9	18 ●
6.2.2 Unicorn valuation, % GDP	0.0	48 ○ ◇
6.2.3 Software spending, % GDP	0.0	109
6.2.4 High-tech manufacturing, %	n/a	n/a
6.3 Knowledge diffusion	**2.7**	**129** ◇
6.3.1 Intellectual property receipts, % total trade	0.0	114 ○ ◇
6.3.2 Production and export complexity	12.5	119 ◇
6.3.3 High-tech exports, % total trade	0.0	130 ◇
6.3.4 ICT services exports, % total trade	0.0	130 ◇
6.3.5 ISO 9001 quality/bn PPP$ GDP	0.3	128
Creative outputs	**9.1**	**110**
7.1 Intangible assets	**15.0**	**98**
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a
7.1.2 Trademarks by origin/bn PPP$ GDP	7.6	113
7.1.3 Global brand value, top 5,000	n/a	n/a
7.1.4 Industrial designs by origin/bn PPP$ GDP	1.5	53 ●
7.2 Creative goods and services	**0.1**	**132**
7.2.1 Cultural and creative services exports, % total trade	n/a	n/a
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	0.0	128
7.3 Online creativity	**6.4**	**121**
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	0.1	126
7.3.2 Country-code TLDs/th pop. 15-69	0.0	131 ○
7.3.3 GitHub commits/mn pop. 15-69	0.0	131 ○
7.3.4 Mobile app creation/bn PPP$ GDP	25.6	121

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

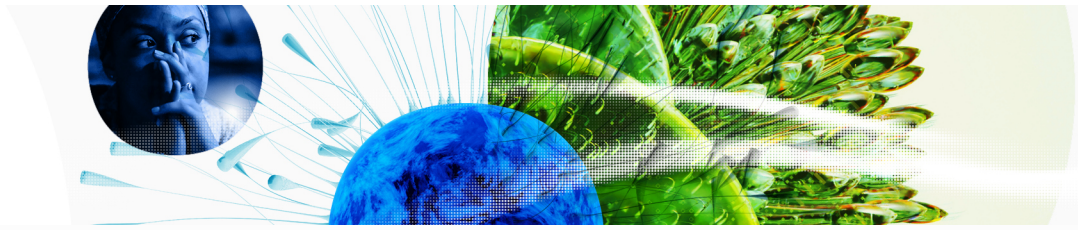
The following tables list indicators that are either missing or outdated for Guinea.

> Guinea has missing data for twenty four indicators and outdated data for eleven indicators.

> Missing data for Guinea

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD
2.2.3	Tertiary inbound mobility, %	n/a	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.1	Electricity output, GWh/mn pop.	n/a	2021	International Energy Agency
3.3.1	GDP/unit of energy use	n/a	2020	International Energy Agency
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges; World Bank
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
4.3.2	Domestic industry diversification	n/a	2020	United Nations Industrial Development Organization
5.1.3	GERD performed by business, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.3	GERD financed by abroad, % GDP	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2023

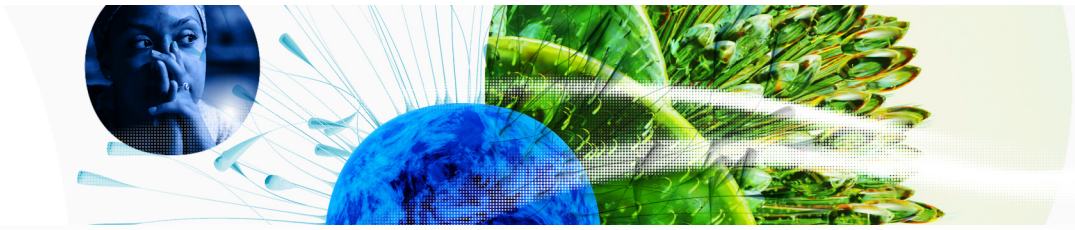


Code	Indicator name	Economy Year	Model Year	Source
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.2.4	High-tech manufacturing, %	n/a	2020	United Nations Industrial Development Organization
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.1.3	Global brand value, top 5,000	n/a	2023	Brand Finance; International Monetary Fund
7.2.1	Cultural and creative services exports, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development
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 Guinea

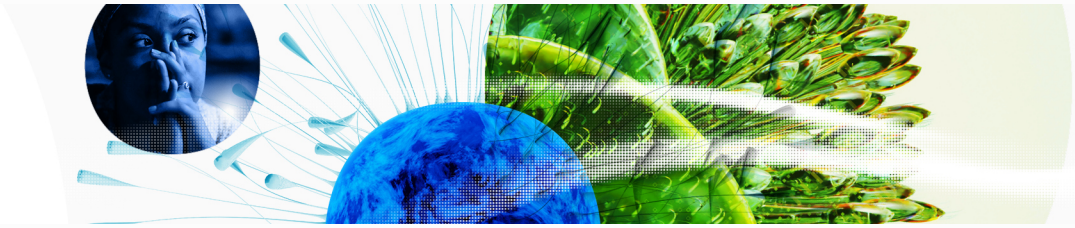
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2020	2022	World Economic Forum, Executive Opinion Survey (EOS)
2.1.2	Government funding/pupil, secondary, % GDP/cap	2014	2019	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2014	2020	UNESCO Institute for Statistics
5.1.1	Knowledge-intensive employment, %	2019	2022	International Labour Organization
5.1.2	Firms offering formal training, %	2016	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2019	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2020	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2020	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.3.2	High-tech imports, % total trade	2016	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development
6.3.3	High-tech exports, % total trade	2016	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	2016	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on

Global Innovation Index 2023



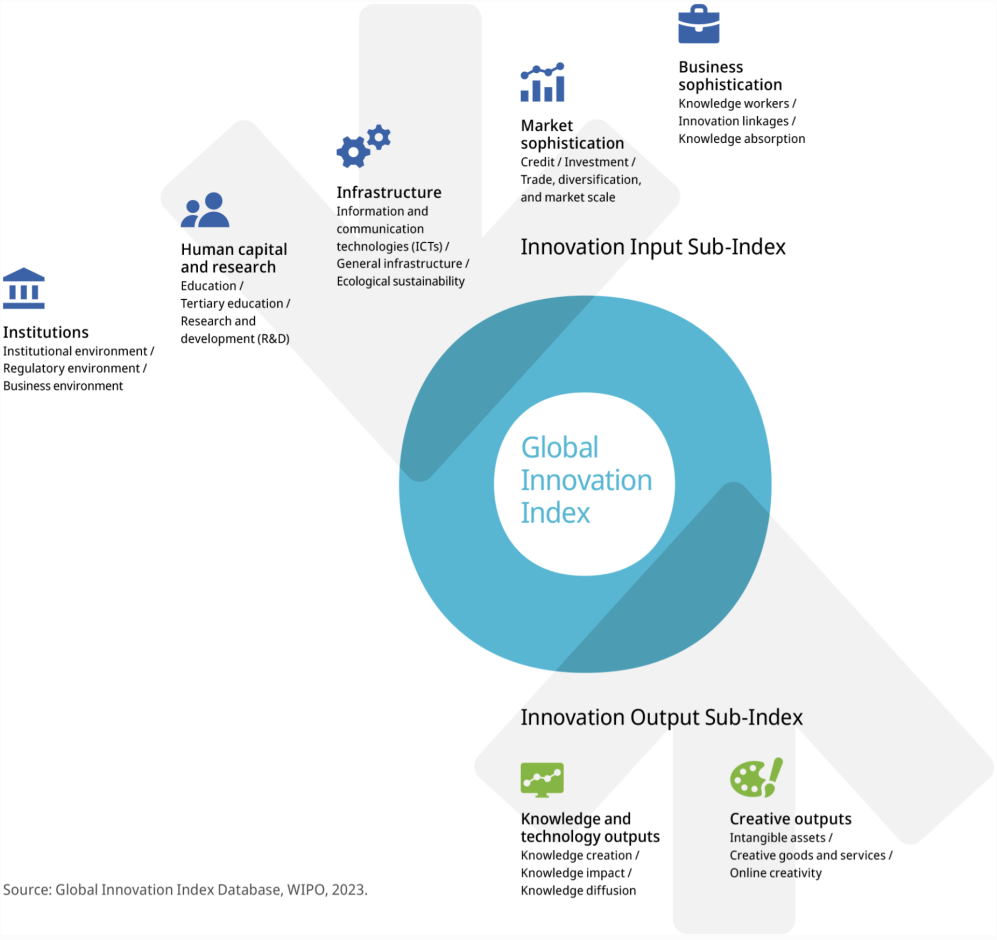
Code	Indicator name	Economy Year	Model Year	Source
				Trade and Development

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.