Global Innovation Index 2022

GUINEA

132nd Guinea ranks 132nd 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 Guinea 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 Guinea in the GII 2022 is between ranks 128 and 132.

Rankings for Guinea (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	130	128	122
2021	130	130	126
2022	132	131	128

- Guinea performs better in innovation outputs than innovation inputs in 2022.
- This year Guinea ranks 131st in innovation inputs, lower than both 2021 and 2020.
- As for innovation outputs, Guinea ranks 128th. This position is lower than both 2021 and 2020.

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

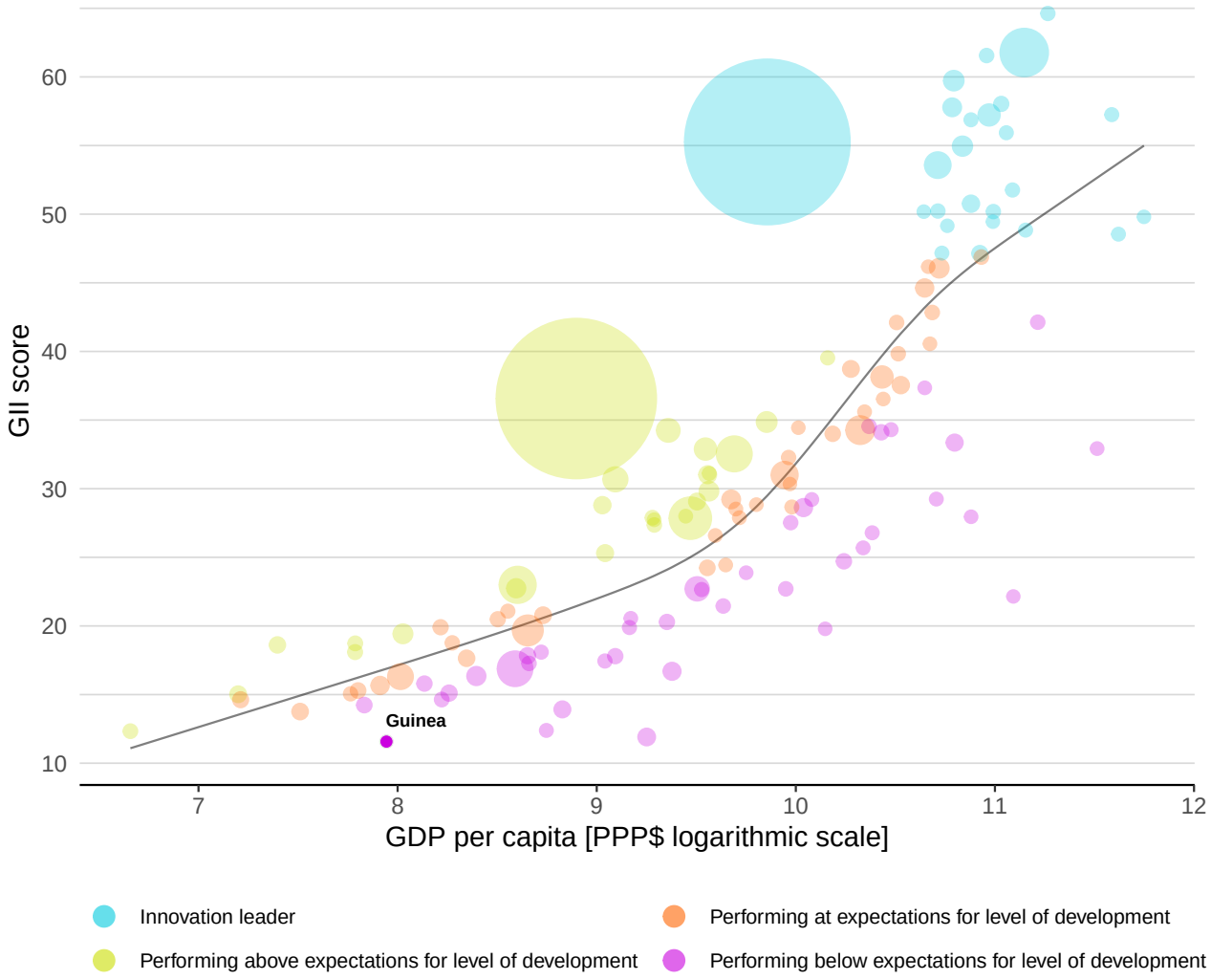
27th Guinea ranks 27th among the 27 economies in Sub-Saharan Africa.

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.

The positive relationship between innovation and development

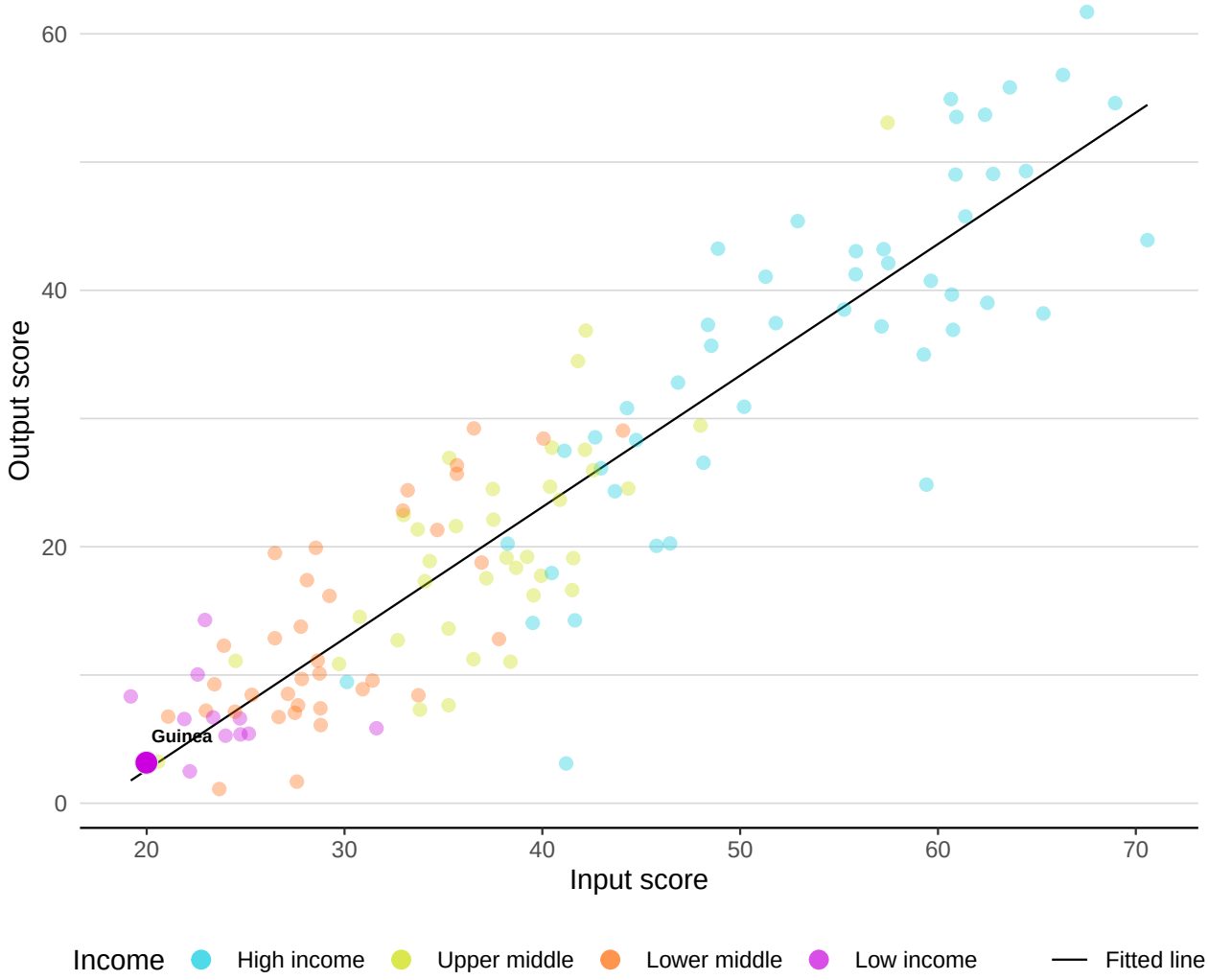


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

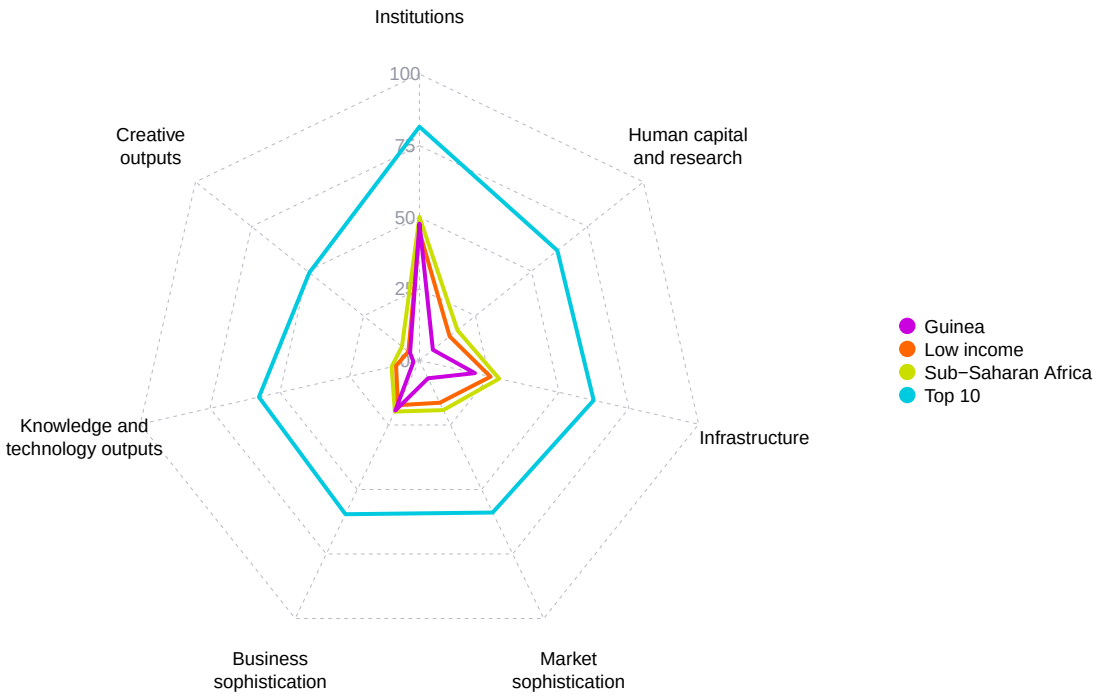
Guinea produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER LOW-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

The seven GII pillar scores for Guinea



Low-income group economies

Guinea performs above the low-income group average in two pillars, namely: Institutions; and, Business sophistication.

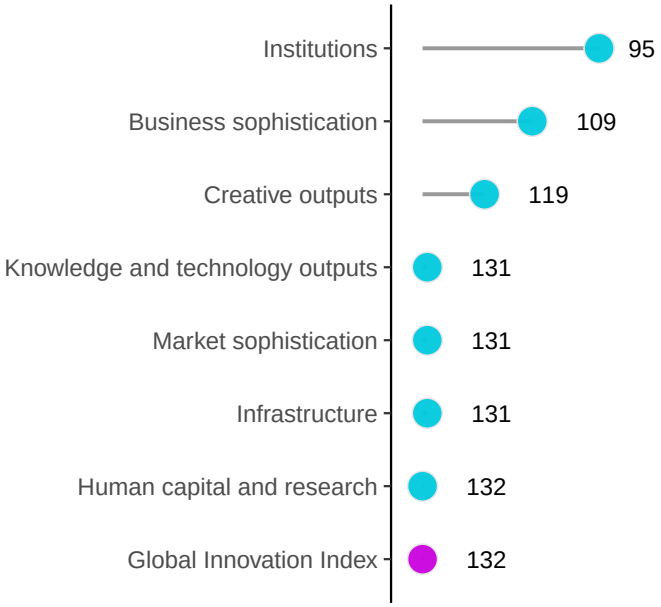
Sub-Saharan Africa

Guinea performs below the regional average in all GII pillars.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Guinea performs best in Institutions and its weakest performance is in Human capital and research.

The seven GII pillar ranks for Guinea



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

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Guinea

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redundancy dismissal	29	2.3.3	Global corporate R&D investors, top 3, mn USD	38
1.3.1	Policies for doing business	90	2.3.4	QS university ranking, top 3	72
4.1.3	Loans from microfinance institutions, % GDP	46	3.1.3	Government's online service	129
5.2.1	University-industry R&D collaboration	54	4.3.1	Applied tariff rate, weighted avg., %	129
5.2.2	State of cluster development and depth	96	5.2.5	Patent families/bn PPP$ GDP	101
5.3.3	ICT services imports, % total trade	76	6.1.2	PCT patents by origin/bn PPP$ GDP	101
5.3.4	FDI net inflows, % GDP	87	6.1.3	Utility models by origin/bn PPP$ GDP	78
6.3.4	ICT services exports, % total trade	81	6.3.2	Production and export complexity	119
7.1.4	Industrial designs by origin/bn PPP$ GDP	54	6.3.3	High-tech exports, % total trade	129
7.2.1	Cultural and creative services exports, % total trade	66	7.3.2	Country-code TLDs/th pop. 15–69	131

GII 2022 rank

Guinea

132

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
128	131	Low	SSA	13.5	40.3	2,818

		Score/ Value	Rank
Institutions		**47.8**	**95** ●
1.1	**Political environment**	44.3	117
1.1.1	Political and operational stability*	58.2	103
1.1.2	Government effectiveness*	30.4	120
1.2	**Regulatory environment**	57.3	89 ●
1.2.1	Regulatory quality*	24.1	119
1.2.2	Rule of law*	13.3	128
1.2.3	Cost of redundancy dismissal	10.1	29 ●
1.3	**Business environment**	41.7	[84]
1.3.1	Policies for doing business† ◴	41.7	90 ●
1.3.2	Entrepreneurship policies and culture*	n/a	n/a
Human capital and research		**6.0**	**132** ○ ◇
2.1	**Education**	15.8	132 ○ ◇
2.1.1	Expenditure on education, % GDP	2.2	121 ◇
2.1.2	Government funding/pupil, secondary, % GDP/cap ◴	8.2	101 ◇
2.1.3	School life expectancy, years ◴	9.0	111
2.1.4	PISA scales in reading, maths and science	n/a	n/a
2.1.5	Pupil-teacher ratio, secondary ◴	33.1	121
2.2	**Tertiary education**	2.2	125 ◇
2.2.1	Tertiary enrolment, % gross	7.0	120
2.2.2	Graduates in science and engineering, %	n/a	n/a
2.2.3	Tertiary inbound mobility, % ◴	0.9	89
2.3	**Research and development (R&D)**	0.0	[120]
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 USD	0.0	38 ○ ◇
2.3.4	QS university ranking, top 3*	0.0	72 ○ ◇
Infrastructure		**19.9**	**131** ○ ◇
3.1	**Information and communication technologies (ICTs)**	30.1	127
3.1.1	ICT access*	51.2	121
3.1.2	ICT use*	16.7	127
3.1.3	Government's online service*	21.8	129 ○ ◇
3.1.4	E-participation*	30.9	122
3.2	**General infrastructure**	13.3	124
3.2.1	Electricity output, GWh/mn pop.	n/a	n/a
3.2.2	Logistics performance*	7.0	120
3.2.3	Gross capital formation, % GDP	17.0	110
3.3	**Ecological sustainability**	16.1	120
3.3.1	GDP/unit of energy use	n/a	n/a
3.3.2	Environmental performance*	31.6	102
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.1	122
Market sophistication		**6.9**	**131** ○ ◇
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	9.0	126 ◇
4.1.3	Loans from microfinance institutions, % GDP	0.3	46 ●
4.2	**Investment**	n/a	[n/a]
4.2.1	Market capitalization, % GDP	n/a	n/a
4.2.2	Venture capital investors, deals/bn PPP$ GDP	n/a	n/a
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	n/a	n/a
4.2.4	Venture capital received, value, % GDP	n/a	n/a
4.3	**Trade, diversification, and market scale**	10.8	129 ◇
4.3.1	Applied tariff rate, weighted avg., %	12.2	129 ○ ◇
4.3.2	Domestic industry diversification	n/a	n/a
4.3.3	Domestic market scale, bn PPP$	40.3	112

		Score/ Value	Rank
Business sophistication		**19.4**	**[109]**
5.1	**Knowledge workers**	9.7	[121]
5.1.1	Knowledge-intensive employment, % ◴	7.4	113
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	104 ◆
5.2	**Innovation linkages**	29.7	[39]
5.2.1	University-industry R&D collaboration† ◴	46.9	54 ● ◆
5.2.2	State of cluster development and depth† ◴	42.2	96 ●
5.2.3	GERD financed by abroad, % GDP	n/a	n/a
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	n/a	n/a
5.2.5	Patent families/bn PPP$ GDP	0.0	101 ○ ◇
5.3	**Knowledge absorption**	18.7	117
5.3.1	Intellectual property payments, % total trade ◴	0.0	112
5.3.2	High-tech imports, % total trade ◴	2.4	128 ◇
5.3.3	ICT services imports, % total trade ◴	1.3	76 ●
5.3.4	FDI net inflows, % GDP	1.5	87 ●
5.3.5	Research talent, % in businesses	n/a	n/a
Knowledge and technology outputs		**2.1**	**131** ○ ◇
6.1	**Knowledge creation**	1.3	127 ◇
6.1.1	Patents by origin/bn PPP$ GDP	0.1	112
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	101 ○ ◇
6.1.3	Utility models by origin/bn PPP$ GDP ◴	0.0	78 ○ ◇
6.1.4	Scientific and technical articles/bn PPP$ GDP	3.2	119 ◇
6.1.5	Citable documents H-index	1.7	125
6.2	**Knowledge impact**	2.0	[130]
6.2.1	Labor productivity growth, %	n/a	n/a
6.2.2	New businesses/th pop. 15–64	0.5	98
6.2.3	Software spending, % GDP	0.0	105
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	0.4	127
6.2.5	High-tech manufacturing, %	n/a	n/a
6.3	**Knowledge diffusion**	3.1	127 ◇
6.3.1	Intellectual property receipts, % total trade	n/a	n/a
6.3.2	Production and export complexity	0.5	119 ○ ◇
6.3.3	High-tech exports, % total trade ◴	0.0	129 ○ ◇
6.3.4	ICT services exports, % total trade ◴	1.2	81 ●
Creative outputs		**4.2**	**[119]**
7.1	**Intangible assets**	6.8	[111]
7.1.1	Intangible asset intensity, top 15, %	n/a	n/a
7.1.2	Trademarks by origin/bn PPP$ GDP	9.1	112
7.1.3	Global brand value, top 5,000, % GDP	n/a	n/a
7.1.4	Industrial designs by origin/bn PPP$ GDP	1.5	54 ●
7.2	**Creative goods and services**	3.2	[107]
7.2.1	Cultural and creative services exports, % total trade ◴	0.3	66 ●
7.2.2	National feature films/mn pop. 15–69	n/a	n/a
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a
7.2.4	Printing and other media, % manufacturing	n/a	n/a
7.2.5	Creative goods exports, % total trade ◴	0.0	126
7.3	**Online creativity**	0.0	132 ○
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	0.1	124
7.3.2	Country-code TLDs/th pop. 15–69	0.0	131 ○
7.3.3	GitHub commit pushes received/mn pop. 15–69	0.0	128
7.3.4	Mobile app creation/bn PPP$ GDP	n/a	n/a

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 Guinea.

Missing data for Guinea

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	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
2.3.1	Researchers, FTE/mn pop.	n/a	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	n/a	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	n/a	2020	International Energy Agency
3.3.1	GDP/unit of energy use	n/a	2019	International Energy Agency
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges
4.2.2	Venture capital investors, deals/bn PPP$ GDP	n/a	2021	Refinitiv
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	n/a	2021	Refinitiv
4.2.4	Venture capital received, value, % GDP	n/a	2021	Refinitiv
4.3.2	Domestic industry diversification	n/a	2019	United Nations Industrial Development Organization
5.1.3	GERD performed by business, % GDP	n/a	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	n/a	2019	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, % GDP	n/a	2019	UNESCO Institute for Statistics
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	n/a	2021	Refinitiv
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
6.2.1	Labor productivity growth, %	n/a	2021	The Conference Board
6.2.5	High-tech manufacturing, %	n/a	2019	United Nations Industrial Development Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2020	World Trade Organization and United Nations Conference on Trade and Development
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
7.1.3	Global brand value, top 5,000, % GDP	n/a	2021	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2019	OMDIA
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO
7.2.4	Printing and other media, % manufacturing	n/a	2019	United Nations Industrial Development Organization

Code	Indicator name	Economy year	Model year	Source
7.3.4	Mobile app creation/bn PPP$ GDP	n/a	2021	data.ia

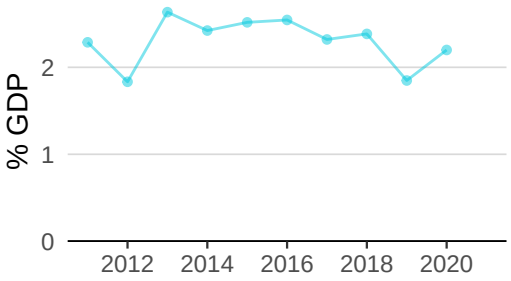
Outdated data for Guinea

Code	Indicator name	Economy year	Model year	Source
1.3.1	Policies for doing business	2020	2021	World Economic Forum, Executive Opinion Survey (EOS)
2.1.2	Government funding/pupil, secondary, % GDP/cap	2014	2018	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2014	2019	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2011	2019	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2012	2019	UNESCO Institute for Statistics
5.1.1	Knowledge-intensive employment, %	2019	2021	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	2021	International Labour Organization
5.2.1	University-industry R&D collaboration	2020	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development and depth	2020	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.3.1	Intellectual property payments, % total trade	2012	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.2	High-tech imports, % total trade	2016	2020	United Nations Comtrade Database
5.3.3	ICT services imports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.1.3	Utility models by origin/bn PPP$ GDP	2019	2020	World Intellectual Property Organization
6.3.3	High-tech exports, % total trade	2016	2020	United Nations Comtrade Database
6.3.4	ICT services exports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
7.2.1	Cultural and creative services exports, % total trade	2012	2020	World Trade Organization and United Nations Conference on Trade and Development
7.2.5	Creative goods exports, % total trade	2016	2020	United Nations Comtrade Database

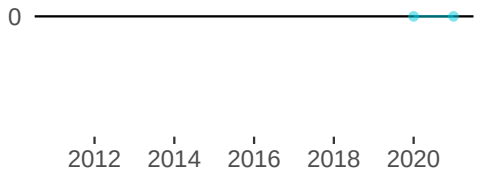
GUINEA'S INNOVATION SYSTEM

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

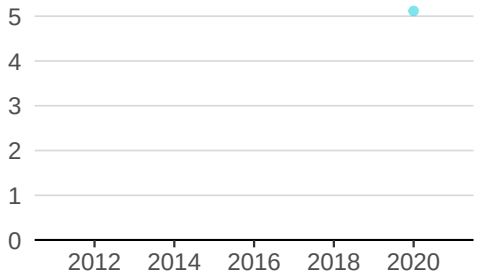
Innovation inputs



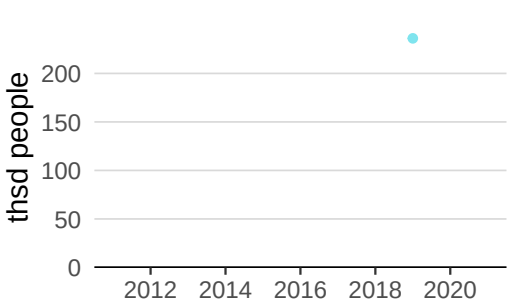
2.1.1 Expenditure on education was equal to 2.2% GDP in 2020–up by 19 percentage points from the year prior–and equivalent to an indicator rank of 121.



2.3.4 QS university ranking was equal to 0.0 in 2021–effectively unchanged from the year prior–and equivalent to an indicator rank of 72.

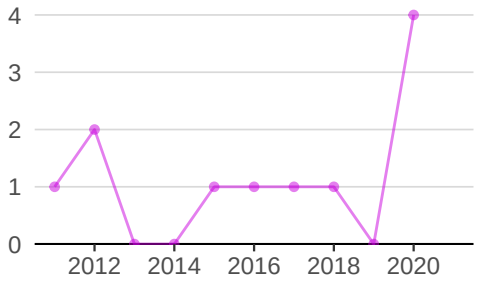


3.1.1 ICT access was equal to 5.1 in 2020 and equivalent to an indicator rank of 121.

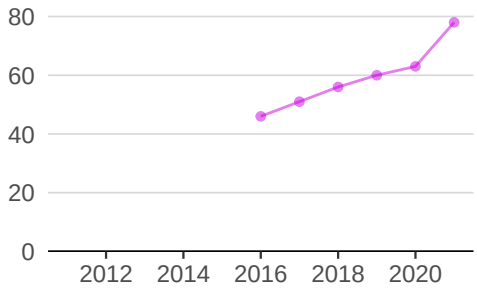


5.1.1 Knowledge-intensive employment was equal to 236.1 thsd people in 2019 and equivalent to an indicator rank of 113.

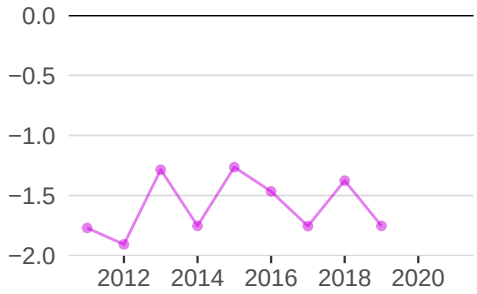
Innovation outputs



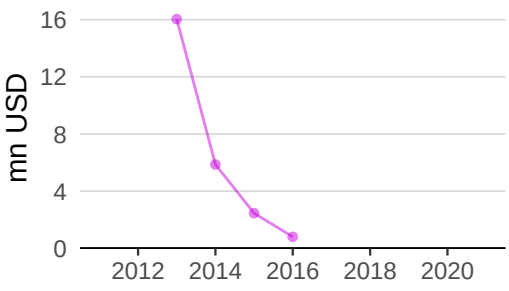
6.1.1 Patents by origin was equal to 4.0 in 2020–up by Inf percentage points from the year prior–and equivalent to an indicator rank of 112.



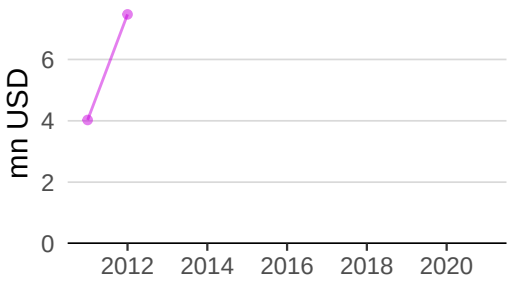
6.1.5 Citable documents H-index was equal to 78.0 in 2021–up by 24 percentage points from the year prior–and equivalent to an indicator rank of 125.



6.3.2 Production and export complexity was equal to -1.8 in 2019–down by 27 percentage points from the year prior–and equivalent to an indicator rank of 119.



6.3.3 High-tech exports was equal to 0.8 mn USD in 2016–down by 67 percentage points from the year prior–and equivalent to an indicator rank of 129.



7.2.1 Cultural and creative services exports was equal to 7.5 mn USD in 2012–up by 85 percentage points from the year prior–and equivalent to an indicator rank of 66.

GUINEA'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank

No observations

Source: European Commission's Joint Research Centre (https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard).

2.3.4 QS university ranking

University	Score	Rank

No observations

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2022).

7.1.1 Intangible asset intensity, top 15

Firm	Rank

No observations

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

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank

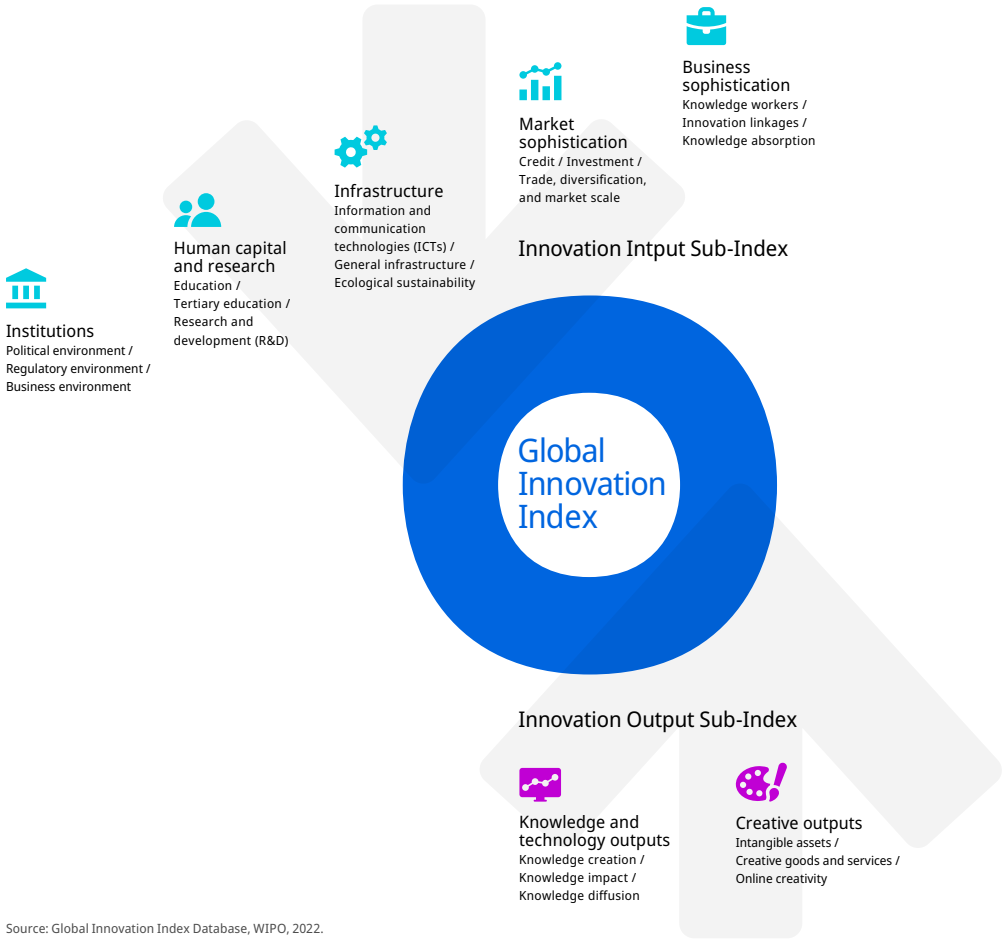
No observations

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

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.

Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a “tool for action” for economies that incorporate the GII into their innovation agendas.



Source: Global Innovation Index Database, WIPO, 2022.

The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that include institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each consisting of three sub-pillars.