



NIGER

125th Niger ranks 125th 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 Niger 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 Niger in the GII 2022 is between ranks 118 and 127.

Rankings for Niger (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	128	124	129
2021	129	125	130
2022	125	119	126

- Niger performs better in innovation inputs than innovation outputs in 2022.
- This year Niger ranks 119th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Niger ranks 126th. This position is higher than both 2021 and 2020.

8th Niger ranks 8th among the 12 low-income group economies.

22nd Niger ranks 22nd among the 27 economies in Sub-Saharan Africa.

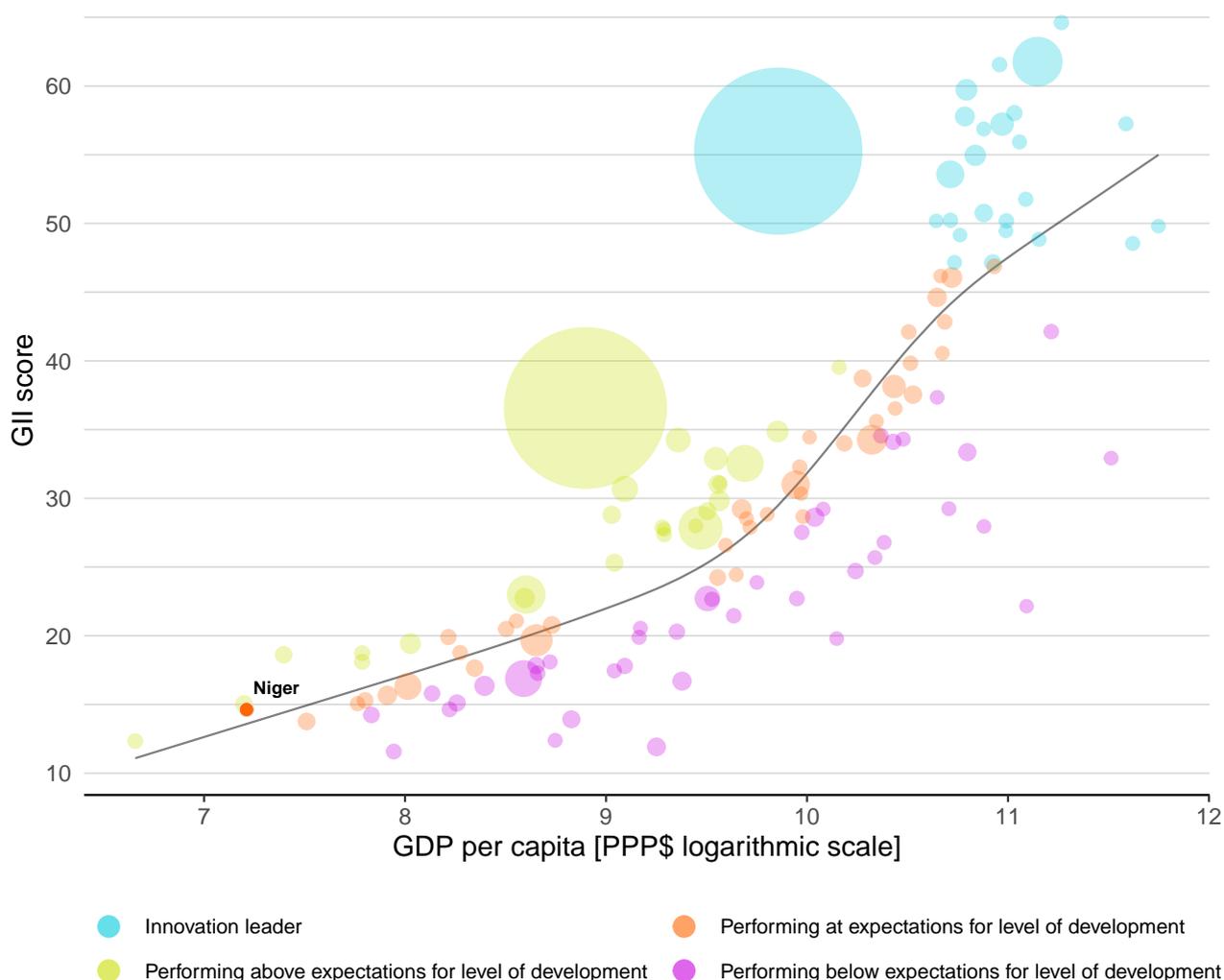


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Niger's performance is at expectations for its level of development.

The positive relationship between innovation and development



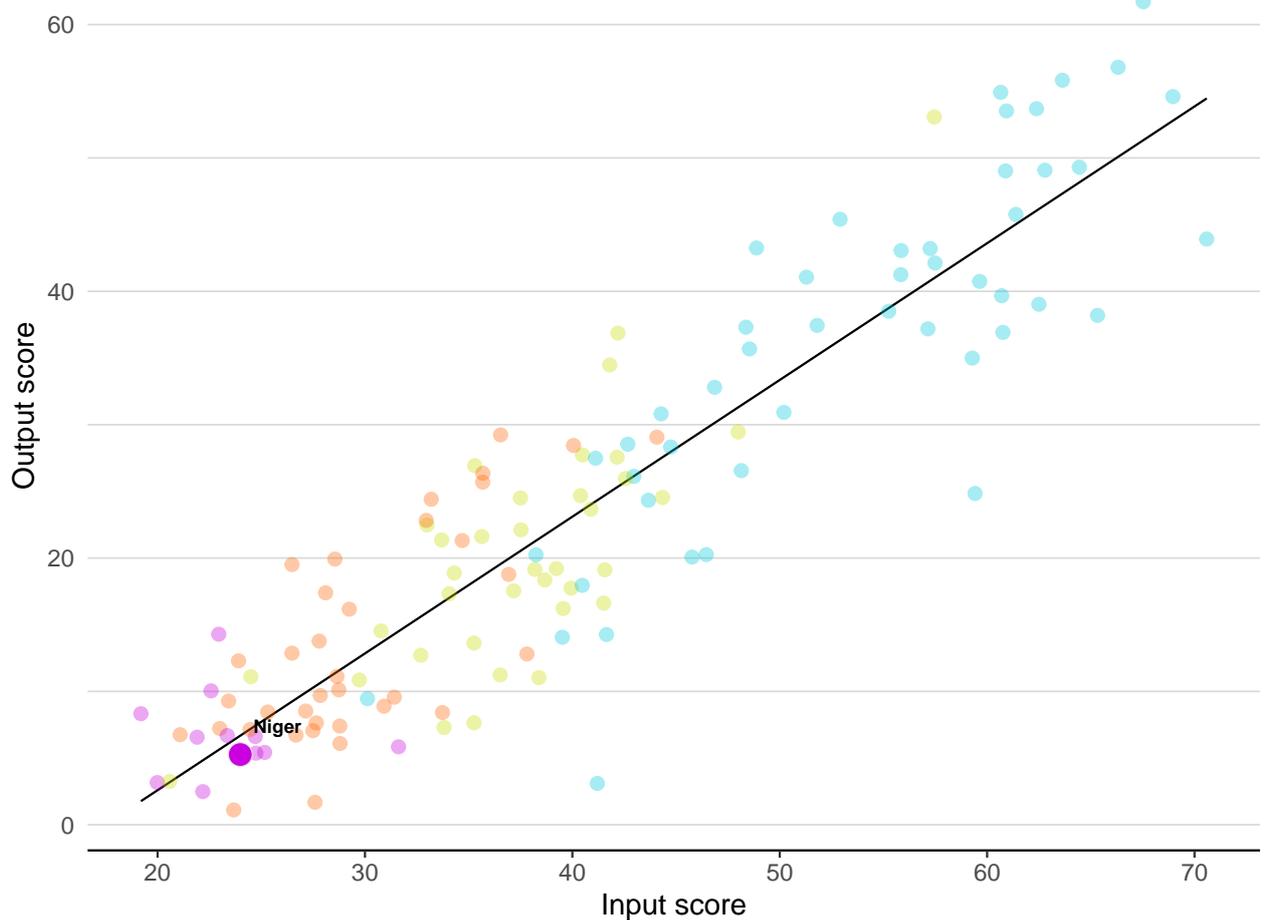


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Niger produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance

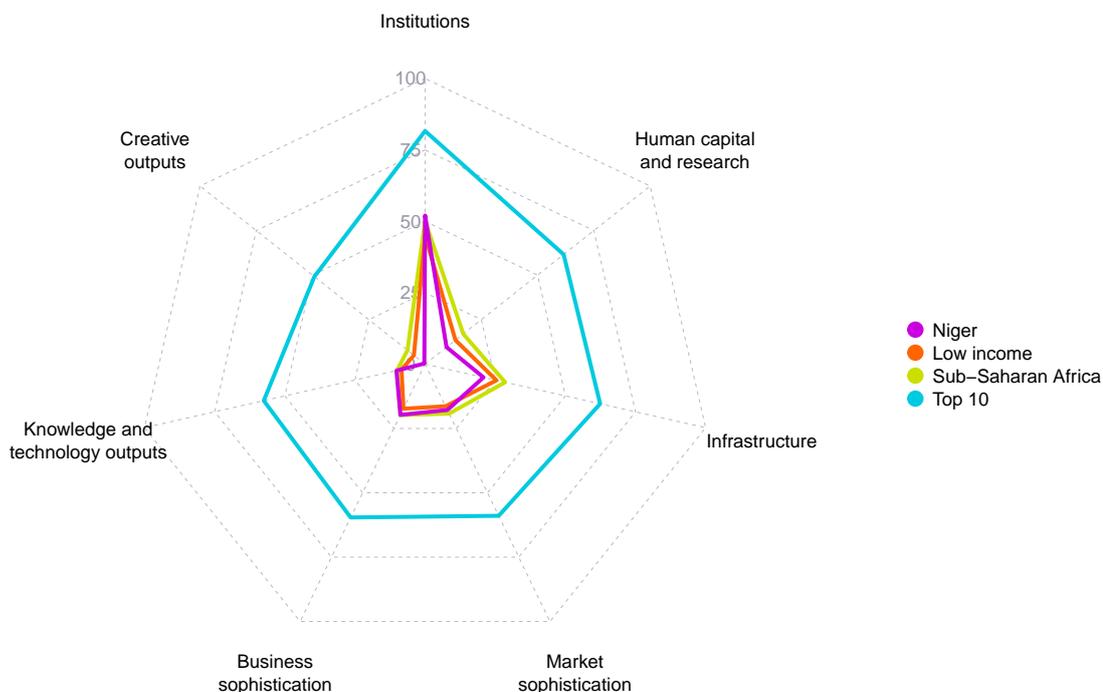


Income ● High income ● Upper middle ● Lower middle ● Low income — Fitted line



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

The seven GII pillar scores for Niger



Low-income group economies

Niger performs above the low-income group average in four pillars, namely: Institutions; Market sophistication; Business sophistication; and, Knowledge and technology outputs.

Sub-Saharan Africa

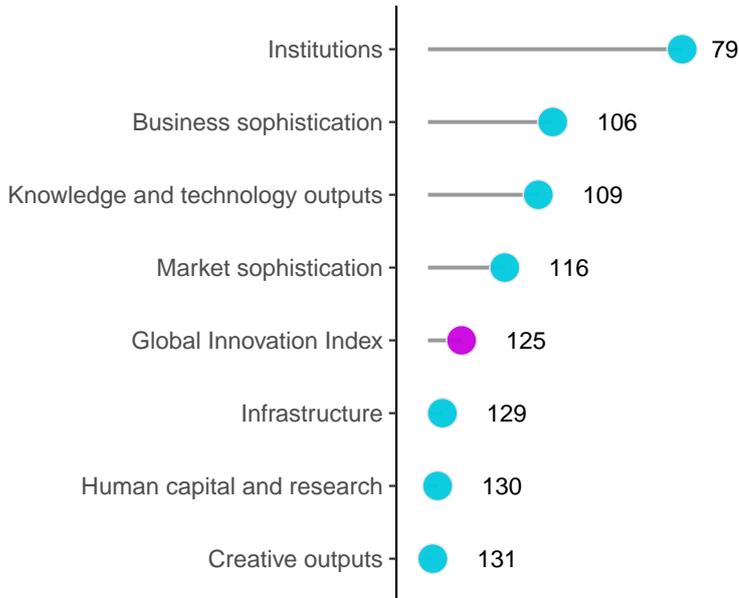
Niger performs above the regional average in two pillars, namely: Institutions; and, Knowledge and technology outputs.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Niger performs best in Institutions and its weakest performance is in Creative outputs.

The seven GII pillar ranks for Niger



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

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Niger

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	54	2.1.3	School life expectancy, years	117
2.2.3	Tertiary inbound mobility, %	46	2.3.3	Global corporate R&D investors, top 3, mn USD	38
3.2.3	Gross capital formation, % GDP	17	2.3.4	QS university ranking, top 3	72
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	28	3.1.1	ICT access	131
5.1.2	Firms offering formal training, %	59	3.2.1	Electricity output, GWh/mn pop.	130
5.3.2	High-tech imports, % total trade	8	5.2.5	Patent families/bn PPP\$ GDP	101
5.3.3	ICT services imports, % total trade	28	6.1.2	PCT patents by origin/bn PPP\$ GDP	101
5.3.4	FDI net inflows, % GDP	26	6.1.3	Utility models by origin/bn PPP\$ GDP	78
6.2.1	Labor productivity growth, %	41	7.1.2	Trademarks by origin/bn PPP\$ GDP	128
6.3.4	ICT services exports, % total trade	29	7.3.3	GitHub commit pushes received/mn pop. 15–69	131

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
126	119	Low	SSA	25.1	34.0	1,355

		Score/ Value	Rank			Score/ Value	Rank
	Institutions	52.0	79 ●		Business sophistication	19.7	[106]
1.1	Political environment	45.5	111	5.1	Knowledge workers	17.5	[106]
1.1.1	Political and operational stability*	54.5	116	5.1.1	Knowledge-intensive employment, %	15.3	89 ●
1.1.2	Government effectiveness*	36.4	106	5.1.2	Firms offering formal training, %	27.5	59 ●
1.2	Regulatory environment	58.6	86	5.1.3	GERD performed by business, % GDP	n/a	n/a
1.2.1	Regulatory quality*	26.4	114	5.1.4	GERD financed by business, %	n/a	n/a
1.2.2	Rule of law*	31.9	93	5.1.5	Females employed w/advanced degrees, %	0.7	121
1.2.3	Cost of redundancy dismissal	14.0	54 ●	5.2	Innovation linkages	1.4	[131]
1.3	Business environment	n/a	[n/a]	5.2.1	University-industry R&D collaboration [†]	n/a	n/a
1.3.1	Policies for doing business [†]	n/a	n/a	5.2.2	State of cluster development and depth [†]	n/a	n/a
1.3.2	Entrepreneurship policies and culture*	n/a	n/a	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	110
				5.2.5	Patent families/bn PPP\$ GDP	0.0	101 ○ ◇
	Human capital and research	9.5	130	5.3	Knowledge absorption	40.2	36 ● ◆
2.1	Education	20.5	128	5.3.1	Intellectual property payments, % total trade	0.0	121
2.1.1	Expenditure on education, % GDP	3.8	87	5.3.2	High-tech imports, % total trade	20.9	8 ● ◆
2.1.2	Government funding/pupil, secondary, % GDP/cap	11.7	93	5.3.3	ICT services imports, % total trade	2.4	28 ● ◆
2.1.3	School life expectancy, years	6.4	117 ○ ◇	5.3.4	FDI net inflows, % GDP	3.9	26 ●
2.1.4	PISA scales in reading, maths and science	n/a	n/a	5.3.5	Research talent, % in businesses	n/a	n/a
2.1.5	Pupil-teacher ratio, secondary	29.7	117				
2.2	Tertiary education	8.1	111		Knowledge and technology outputs	10.2	109
2.2.1	Tertiary enrolment, % gross	4.4	127 ○ ◇	6.1	Knowledge creation	2.3	121
2.2.2	Graduates in science and engineering, %	12.3	102	6.1.1	Patents by origin/bn PPP\$ GDP	0.3	91
2.2.3	Tertiary inbound mobility, %	5.4	46 ●	6.1.2	PCT patents by origin/bn PPP\$ GDP	0.0	101 ○ ◇
2.3	Research and development (R&D)	0.0	119	6.1.3	Utility models by origin/bn PPP\$ GDP	0.0	78 ○ ◇
2.3.1	Researchers, FTE/mn pop.	26.5	104	6.1.4	Scientific and technical articles/bn PPP\$ GDP	5.4	112 ○ ◇
2.3.2	Gross expenditure on R&D, % GDP	n/a	n/a	6.1.5	Citable documents H-index	2.8	120
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38 ○ ◇	6.2	Knowledge impact	16.7	101
2.3.4	QS university ranking, top 3*	0.0	72 ○ ◇	6.2.1	Labor productivity growth, %	1.8	41 ●
				6.2.2	New businesses/th pop. 15-64	0.1	120
	Infrastructure	20.8	129	6.2.3	Software spending, % GDP	0.0	113
3.1	Information and communication technologies (ICTs)	26.7	131 ○ ◇	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	0.4	125
3.1.1	ICT access*	34.6	131 ○ ◇	6.2.5	High-tech manufacturing, %	15.8	73 ● ◆
3.1.2	ICT use*	13.0	130 ○ ◇	6.3	Knowledge diffusion	11.5	98
3.1.3	Government's online service*	29.4	124	6.3.1	Intellectual property receipts, % total trade	0.0	109
3.1.4	E-participation*	29.8	126	6.3.2	Production and export complexity	n/a	n/a
3.2	General infrastructure	16.0	118	6.3.3	High-tech exports, % total trade	0.4	94 ● ◆
3.2.1	Electricity output, GWh/mn pop.	26.6	130 ○ ◇	6.3.4	ICT services exports, % total trade	3.7	29 ● ◆
3.2.2	Logistics performance*	0.9	123 ○ ◇				
3.2.3	Gross capital formation, % GDP	31.7	17 ●		Creative outputs	0.3	[131]
3.3	Ecological sustainability	19.7	95	7.1	Intangible assets	0.1	[132]
3.3.1	GDP/unit of energy use	8.5	87	7.1.1	Intangible asset intensity, top 15, %	n/a	n/a
3.3.2	Environmental performance*	37.7	80 ● ◆	7.1.2	Trademarks by origin/bn PPP\$ GDP	3.0	128 ○ ◇
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.1	123	7.1.3	Global brand value, top 5,000, % GDP	n/a	n/a
				7.1.4	Industrial designs by origin/bn PPP\$ GDP	0.0	119
	Market sophistication	17.8	116	7.2	Creative goods and services	0.8	[125]
4.1	Credit	4.5	125	7.2.1	Cultural and creative services exports, % total trade	0.1	91
4.1.1	Finance for startups and scaleups*	n/a	n/a	7.2.2	National feature films/mn pop. 15-69	n/a	n/a
4.1.2	Domestic credit to private sector, % GDP	11.7	124	7.2.3	Entertainment and media market/th pop. 15-69	n/a	n/a
4.1.3	Loans from microfinance institutions, % GDP	0.5	38	7.2.4	Printing and other media, % manufacturing	n/a	n/a
4.2	Investment	13.3	[45]	7.2.5	Creative goods exports, % total trade	0.0	109
4.2.1	Market capitalization, % GDP	n/a	n/a	7.3	Online creativity	0.3	117
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	n/a	n/a	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	0.9	98 ● ◆
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	0.1	28 ● ◆	7.3.2	Country-code TLDs/th pop. 15-69	0.0	130
4.2.4	Venture capital received, value, % GDP	0.0	76	7.3.3	GitHub commit pushes received/mn pop. 15-69	0.0	131 ○ ◇
4.3	Trade, diversification, and market scale	35.7	109	7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	n/a
4.3.1	Applied tariff rate, weighted avg., %	8.1	105				
4.3.2	Domestic industry diversification	58.6	98				
4.3.3	Domestic market scale, bn PPP\$	34.0	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/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 Niger.

Missing data for Niger

Code	Indicator name	Economy year	Model year	Source
1.3.1	Policies for doing business	n/a	2021	World Economic Forum, Executive Opinion Survey (EOS)
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
2.3.2	Gross expenditure on R&D, % GDP	n/a	2020	UNESCO Institute for Statistics
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
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
5.2.1	University-industry R&D collaboration	n/a	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development and depth	n/a	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	GERD financed by abroad, % GDP	n/a	2019	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
6.3.2	Production and export complexity	n/a	2019	Harvard University, Growth Lab
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
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2021	data.ia

Outdated data for Niger

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2017	2018	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2017	2019	UNESCO Institute for Statistics

Code	Indicator name	Economy year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2017	2019	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2019	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2013	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
4.3.2	Domestic industry diversification	2016	2019	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2017	2021	International Labour Organization
5.1.2	Firms offering formal training, %	2017	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2017	2021	International Labour Organization
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	2020	2021	Refinitiv
5.3.1	Intellectual property payments, % total trade	2018	2020	World Trade Organization and United Nations Conference on Trade and Development
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	2018	2020	World Intellectual Property Organization
6.2.2	New businesses/th pop. 15–64	2018	2020	World Bank, Entrepreneurship Database
6.2.5	High-tech manufacturing, %	2013	2019	United Nations Industrial Development Organization
6.3.1	Intellectual property receipts, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development



NIGER'S INNOVATION SYSTEM

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

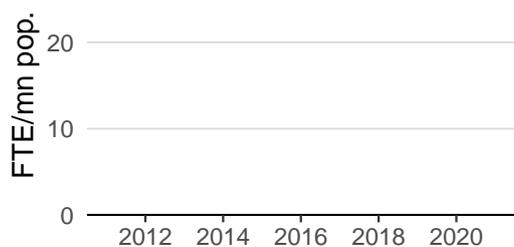
Innovation inputs



2.1.1 Expenditure on education was equal to 3.8% GDP in 2020—up by 9 percentage points from the year prior—and equivalent to an indicator rank of 87.



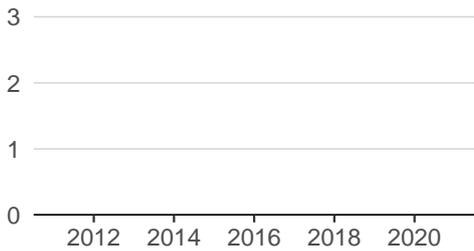
2.2.2 Graduates in science and engineering was equal to 12.3% of tert. grads in 2019—up by 18 percentage points from the year prior—and equivalent to an indicator rank of 102.



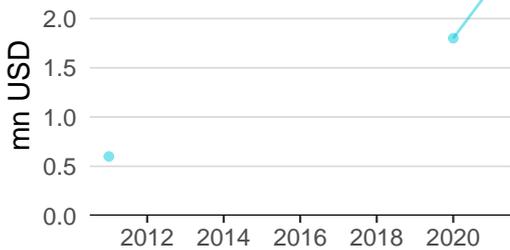
2.3.1 Researchers was equal to 26.5 FTE/mn pop. in 2013 and equivalent to an indicator rank of 104.



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 3.5 in 2020 and equivalent to an indicator rank of 131.



4.2.4 Venture capital received was equal to 2.3 mn USD in 2021—up by 29 percentage points from the year prior—and equivalent to an indicator rank of 76.

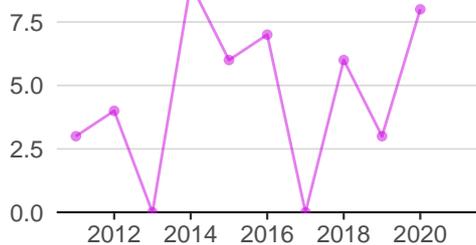


4.3.2 Domestic industry diversification was equal to 0.3 in 2016—down by 1 percentage point from the year prior—and equivalent to an indicator rank of 98.

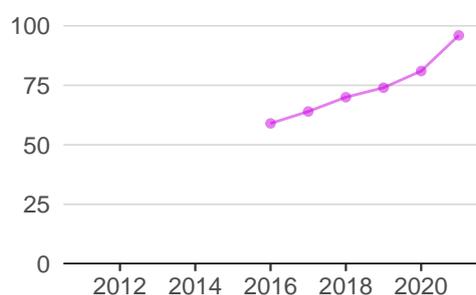


5.1.1 Knowledge-intensive employment was equal to 324.7 thsd people in 2017 and equivalent to an indicator rank of 89.

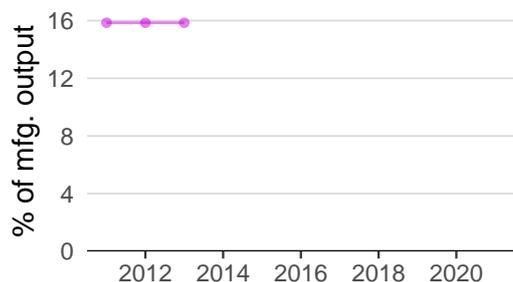
Innovation outputs



6.1.1 Patents by origin was equal to 8.0 in 2020—up by 167 percentage points from the year prior—and equivalent to an indicator rank of 91.



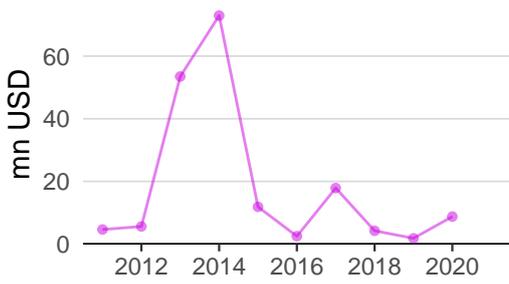
6.1.5 Citable documents H-index was equal to 96.0 in 2021—up by 19 percentage points from the year prior—and equivalent to an indicator rank of 120.



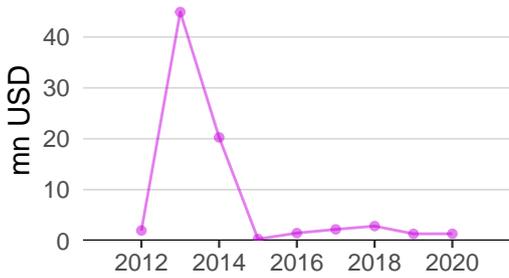
6.2.5 High-tech manufacturing was equal to 15.8% of mfg. output in 2013—effectively unchanged from the year prior—and equivalent to an indicator rank of 73.



6.3.1 Intellectual property receipts was equal to 0.0 mn USD in 2019 and equivalent to an indicator rank of 109.



6.3.3 High-tech exports was equal to 8.8 mn USD in 2020—up by 377 percentage points from the year prior—and equivalent to an indicator rank of 94.



7.2.1 Cultural and creative services exports was equal to 1.3 mn USD in 2020—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 91.



NIGER'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
-------	----------	------

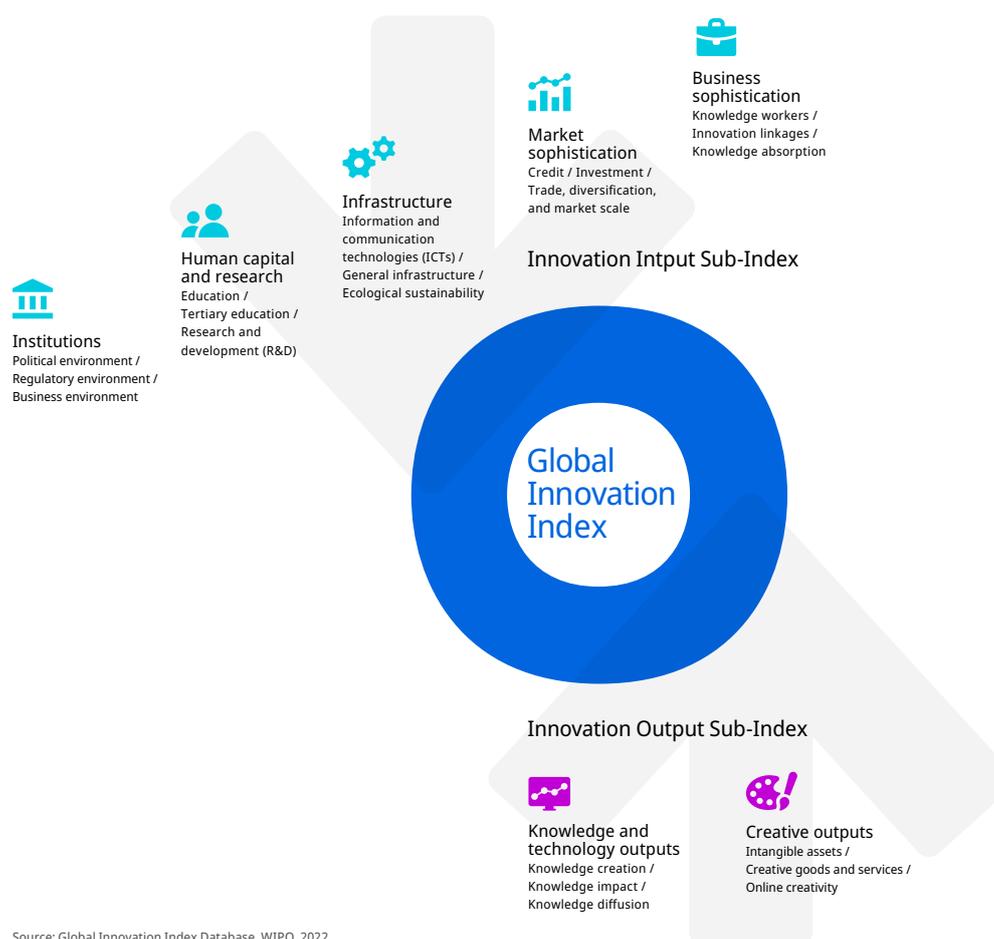
No observations

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.



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.