GLOBAL INNOVATION INDEX 2020

NIGER

128th Niger ranks 128th among the 131 economies featured in the GII 2020.

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 2020 is between ranks 118 and 131.

Rankings of Niger (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	128	124	129
2019	127	125	127
2018	122	113	122

- Niger performs better in innovation inputs than innovation outputs in 2020.
- This year Niger ranks 124th in innovation inputs, higher than last year and lower compared to 2018.
- As for innovation outputs, Niger ranks 129th. This position is lower than last year and lower compared to 2018.

14th Niger ranks 14th among the 16 low-income group economies.

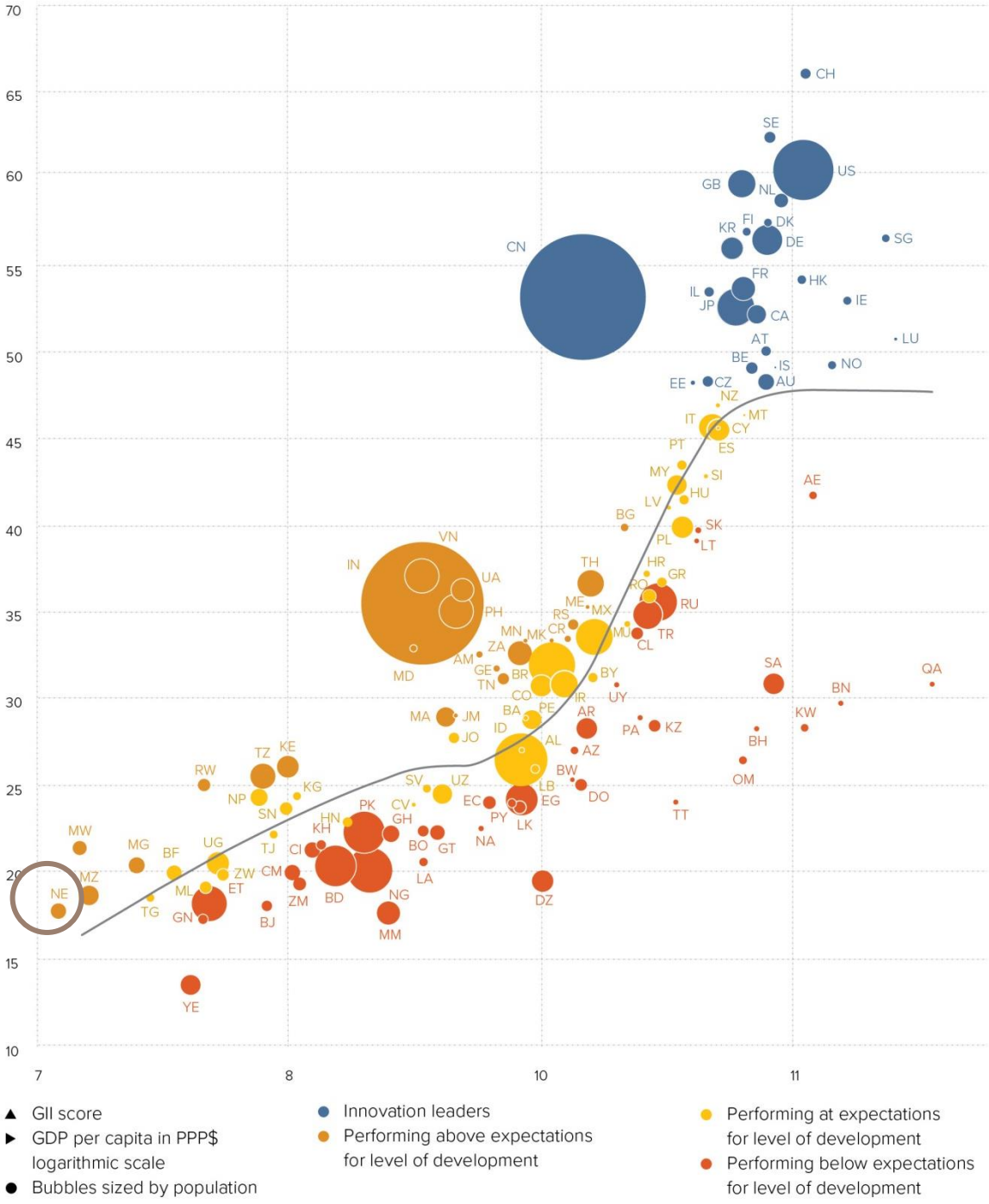
25th Niger ranks 25th among the 26 economies in Sub-Saharan Africa.

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 above expectations for its level of development.

The positive relationship between innovation and development

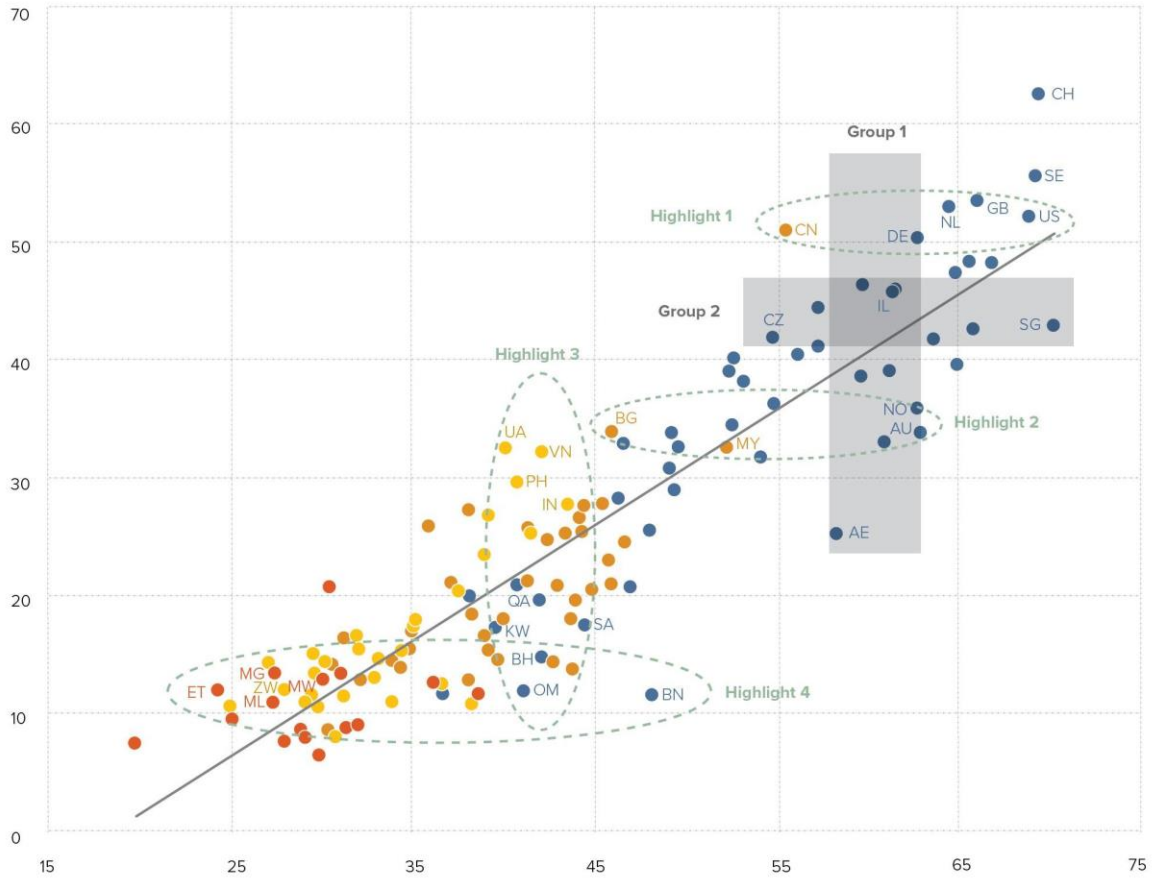


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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, 2020



▲ Output score
► Input score

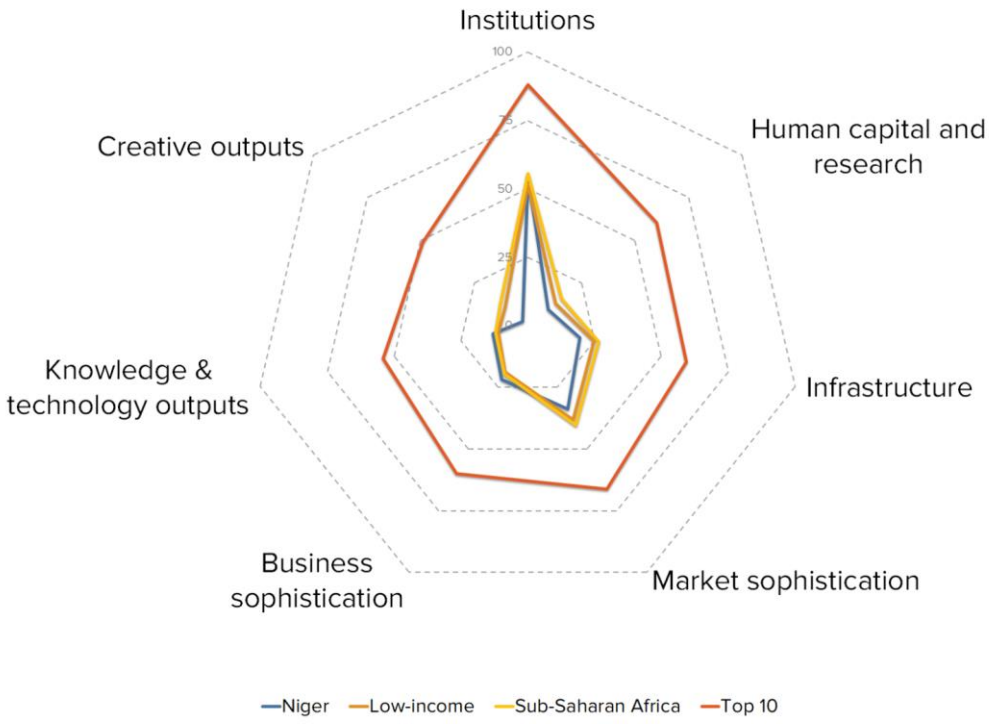
● High income group
● Upper middle-income group
● Lower middle-income group
● Low income group

— Fitted values

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

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

Niger's scores in the seven GII pillars



Low-income group economies

Niger has high scores in three out of the seven GII pillars: Institutions, Business sophistication and Knowledge & technology outputs, which are above average for the low-income group.

Conversely, Niger scores below average for its income group in four GII pillars: Human capital & research, Infrastructure, Market sophistication and Creative outputs.

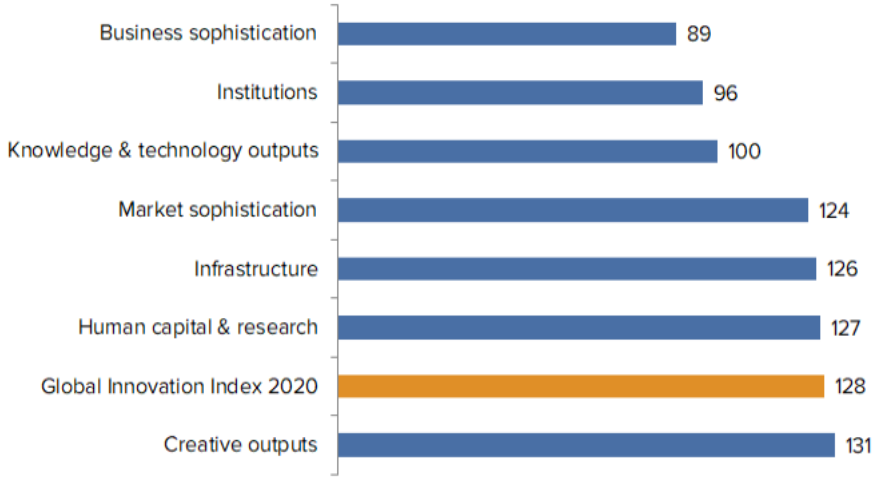
Sub-Saharan Africa

Compared to other economies in Sub-Saharan Africa, Niger performs:

- above average in two out of the seven GII pillars: Business sophistication and Knowledge & technology outputs; and
- below average in five out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Market sophistication and Creative outputs.

OVERVIEW OF NIGER RANKINGS IN THE SEVEN GII AREAS

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



*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Niger in the GII 2020.

Strengths

Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal, salary weeks	53
1.3.1	Ease of starting a business*	49
2.1.1	Expenditure on education, % GDP	44
2.2.3	Tertiary inbound mobility, %	43
3.2.3	Gross capital formation, % GDP	4
4.1.1	Ease of getting credit*	44
5.3.3	ICT services imports, % total trade	4
5.3.4	FDI net inflows, % GDP	9
6.2.1	Growth rate of PPP$ GDP/worker, %	49
6.3.3	ICT services exports, % total trade	18

Weaknesses

Code	Indicator name	Rank
2.1.3	School life expectancy, years	120
2.3.3	Global R&D companies, top 3, mn US$	42
2.3.4	QS university ranking, average score top 3*	77
3.1	Information & communication technologies (ICTs)	130
3.1.2	ICT use*	131
3.1.3	Government's online service*	129
3.2.1	Electricity output, GWh/mn pop	122
3.2.2	Logistics performance*	124
5.2.5	Patent families 2+ offices/bn PPP$ GDP	101
6.1.2	PCT patents by origin/bn PPP$ GDP	100
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	130
7.3.2	Country-code TLDs/th pop. 15–69	130

STRENGTHS

GII strengths for Niger are found in six of the seven GII pillars.

- Institutions (96): exhibits strengths in the indicators Cost of redundancy dismissal (53) and Ease of starting a business (49).
- Human capital & research (127): shows strengths in the indicators Expenditure on education (44) and Tertiary inbound mobility (43).
- Infrastructure (126): demonstrates strengths in the indicator Gross capital formation (4).
- Market sophistication (124): displays strength in the indicator Ease of getting credit (44).
- Business sophistication (89): shows strengths in the indicators ICT services imports (4) and FDI net inflows (9).
- Knowledge & technology outputs (100): reveals strengths in the indicators Growth rate of PPP$ GDP/worker (49) and ICT services exports (18).

WEAKNESSES

GII weaknesses for Niger are found in five of the seven GII pillars.

- Human capital & research (127): exhibits weaknesses in the indicators School life expectancy (120), Global R&D companies (42) and QS university ranking (77).
- Infrastructure (126): displays weaknesses in the sub-pillar Information & communication technologies (130) and in the indicators ICT use (131), Government's online service (129), Electricity output (122) and Logistics performance (124).
- Business sophistication (89): demonstrates weakness in the indicator Patent families 2+ offices (101).
- Knowledge & technology outputs (100): reveals weaknesses in the indicators PCT patents by origin (100) and ISO 9001 quality certificates (130).
- Creative outputs (131): shows weakness in the indicator Country-code TLDs (130).

NIGER

GII 2020 rank

128

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2019 rank
129	124	Low	SSF	23.3	25.8	965.5	127

		Score/Value	Rank	
INSTITUTIONS		**54.9**	**96**	
1.1	**Political environment**	**41.1**	**117**	
1.1.1	Political and operational stability*	57.1	110	
1.1.2	Government effectiveness*	33.0	119	
1.2	**Regulatory environment**	**58.2**	**84**	
1.2.1	Regulatory quality*	24.9	108	
1.2.2	Rule of law*	31.5	100	
1.2.3	Cost of redundancy dismissal, salary weeks	14.0	53	●
1.3	**Business environment**	**65.4**	**83**	
1.3.1	Ease of starting a business*	91.5	49	●
1.3.2	Ease of resolving insolvency*	39.3	100	
HUMAN CAPITAL & RESEARCH		**9.5**	**127**	
2.1	**Education**	**22.0**	**122**	
2.1.1	Expenditure on education, % GDP	4.9	44	●
2.1.2	Government funding/pupil, secondary, % GDP/cap	16.1	71	
2.1.3	School life expectancy, years	6.4	120	○ ◇
2.1.4	PISA scales in reading, maths, & science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary	29.7	119	
2.2	**Tertiary education**	**6.5**	**122**	
2.2.1	Tertiary enrolment, % gross	4.4	121	
2.2.2	Graduates in science & engineering, %	10.4	104	◇
2.2.3	Tertiary inbound mobility, %	5.2	43	●
2.3	**Research & development (R&D)**	**0.0**	**[121]**	
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 R&D companies, avg. exp. top 3, mn $US	0.0	42	○ ◇
2.3.4	QS university ranking, average score top 3*	0.0	77	○ ◇
INFRASTRUCTURE		**19.6**	**126**	
3.1	**Information & communication technologies (ICTs)**	**15.9**	**130**	○ ◇
3.1.1	ICT access*	23.1	128	◇
3.1.2	ICT use*	3.1	131	○ ◇
3.1.3	Government's online service*	16.0	129	○ ◇
3.1.4	E-participation*	21.4	122	◇
3.2	**General infrastructure**	**27.3**	**62**	
3.2.1	Electricity output, kWh/mn pop	25.7	122	○ ◇
3.2.2	Logistics performance*	0.0	124	○ ◇
3.2.3	Gross capital formation, % GDP	45.5	4	●
3.3	**Ecological sustainability**	**15.6**	**123**	
3.3.1	GDP/unit of energy use	6.2	100	
3.3.2	Environmental performance*	30.8	118	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.2	117	
MARKET SOPHISTICATION		**33.9**	**124**	
4.1	**Credit**	**30.0**	**107**	
4.1.1	Ease of getting credit*	70.0	44	●
4.1.2	Domestic credit to private sector, % GDP	14.2	120	
4.1.3	Microfinance gross loans, % GDP	0.1	55	
4.2	**Investment**	**42.0**	**[47]**	
4.2.1	Ease of protecting minority investors*	42.0	102	
4.2.2	Market capitalization, % GDP	n/a	n/a	
4.2.3	Venture capital deals/bn PPP$ GDP	n/a	n/a	
4.3	**Trade, competition, and market scale**	**29.6**	**129**	◇
4.3.1	Applied tariff rate, weighted avg., %	11.0	121	
4.3.2	Intensity of local competition+	n/a	n/a	
4.3.3	Domestic market scale, bn PPP$	25.8	125	

		Score/Value	Rank	
BUSINESS SOPHISTICATION		**21.9**	**[89]**	
5.1	**Knowledge workers**	**20.8**	**[100]**	
5.1.1	Knowledge-intensive employment, %	15.3	91	◆
5.1.2	Firms offering formal training, %	27.5	55	
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, %	0.7	114	
5.2	**Innovation linkages**	**1.5**	**[131]**	
5.2.1	University/industry research collaboration+	n/a	n/a	
5.2.2	State of cluster development+	n/a	n/a	
5.2.3	GERD financed by abroad, % GDP	n/a	n/a	
5.2.4	JV-strategic alliance deals/bn PPP$ GDP	0.0	104	
5.2.5	Patent families 2+ offices/bn PPP$ GDP	0.0	101	○ ◇
5.3	**Knowledge absorption**	**43.3**	**[25]**	
5.3.1	Intellectual property payments, % total trade	n/a	n/a	
5.3.2	High-tech imports, % total trade	7.5	70	
5.3.3	ICT services imports, % total trade	3.5	4	● ◆
5.3.4	FDI net inflows, % GDP	9.9	9	● ◆
5.3.5	Research talent, % in business enterprise	n/a	n/a	
KNOWLEDGE & TECHNOLOGY OUTPUTS		**13.0**	**100**	
6.1	**Knowledge creation**	**3.5**	**117**	
6.1.1	Patents by origin/bn PPP$ GDP	0.3	93	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	100	○ ◇
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific & technical articles/bn PPP$ GDP	3.0	105	
6.1.5	Citable documents H-index	3.6	117	
6.2	**Knowledge impact**	**13.2**	**110**	
6.2.1	Growth rate of PPP$ GDP/worker, %	1.9	49	●
6.2.2	New businesses/th pop. 15-64	0.1	118	
6.2.3	Computer software spending, % GDP	0.0	109	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	0.2	130	○ ◇
6.2.5	High- and medium-high-tech manufacturing, %	n/a	n/a	
6.3	**Knowledge diffusion**	**22.2**	**70**	◆
6.3.1	Intellectual property receipts, % total trade	0.0	107	
6.3.2	High-tech net exports, % total trade	0.1	107	
6.3.3	ICT services exports, % total trade	4.3	18	● ◆
6.3.4	FDI net outflows, % GDP	0.4	80	
CREATIVE OUTPUTS		**2.4**	**[131]**	
7.1	**Intangible assets**	**4.1**	**[131]**	
7.1.1	Trademarks by origin/bn PPP$ GDP	15.9	99	
7.1.2	Global brand value, top 5,000, % GDP	n/a	n/a	
7.1.3	Industrial designs by origin/bn PPP$ GDP	0.0	119	
7.1.4	ICTs & organizational model creation+	n/a	n/a	
7.2	**Creative goods and services**	**1.2**	**[123]**	
7.2.1	Cultural & creative services exports, % total trade	0.1	81	
7.2.2	National feature films/mn pop. 15-69	0.7	94	
7.2.3	Entertainment & 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	124	
7.3	**Online creativity**	**0.3**	**127**	◇
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	0.9	98	◆
7.3.2	Country-code TLDs/th pop. 15-69	0.0	130	○
7.3.3	Wikipedia edits/mn pop. 15-69	n/a	n/a	
7.3.4	Mobile app creation/bn PPP$ GDP	0.0	90	

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 Appendix II for details, including the year of the data, at http://globalinnovationindex.org. 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 data that are either missing or outdated for Niger.

Missing data

Code	Indicator name	Country year	Model year	Source
2.1.4	PISA scales in reading, maths, & science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.3.1	Researchers, FTE/mn pop.	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.2.2	Market capitalization, % GDP	n/a	2018	World Federation of Exchanges
4.2.3	Venture capital deals/bn PPP$ GDP	n/a	2019	Thomson Reuters
4.3.2	Intensity of local competition†	n/a	2018	World Economic Forum
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.1	University/industry research collaboration†	n/a	2019	World Economic Forum
5.2.2	State of cluster development†	n/a	2019	World Economic Forum
5.2.3	GERD financed by abroad, % GDP	n/a	2017	UNESCO Institute for Statistics
5.3.1	Intellectual property payments, % total trade	n/a	2018	World Trade Organization
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2018	World Intellectual Property Organization
6.2.5	High- and medium-high-tech manufacturing, %	n/a	2017	United Nations Industrial Development Organization
7.1.2	Global brand value, top 5000, % GDP	n/a	2019	Brand Finance
7.1.4	ICTs & organizational model creation†	n/a	2018	World Economic Forum
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC
7.2.4	Printing and other media, % manufacturing	n/a	2017	United Nations Industrial Development Organization
7.3.3	Wikipedia edits/mn pop. 15–69	n/a	2019	Wikimedia Foundation

Outdated data

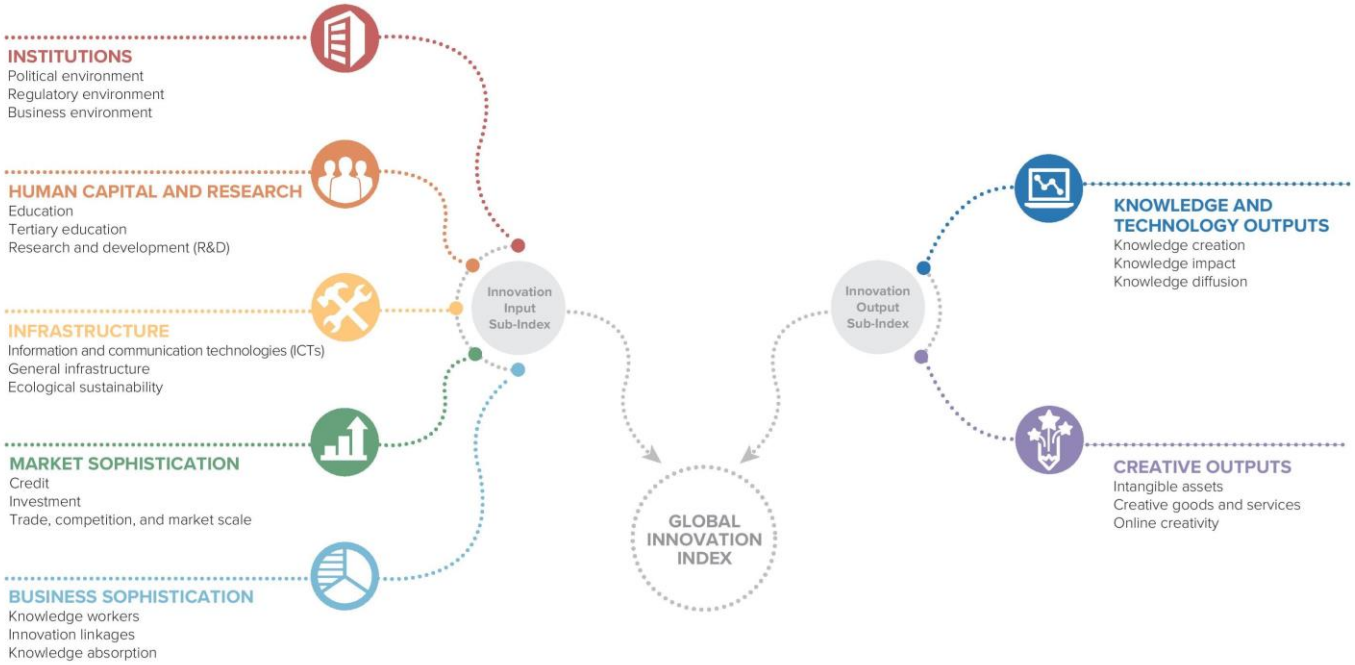
Code	Indicator name	Country year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2017	2018	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	2016	2018	Microfinance Information Exchange
5.1.1	Knowledge-intensive employment, %	2017	2018	International Labour Organization
5.1.2	Firms offering formal training, %	2016	2018	World Bank
5.1.5	Females employed w/advanced degrees, %	2017	2018	International Labour Organization
5.3.2	High-tech imports, % total trade	2016	2018	United Nations, COMTRADE
5.3.3	ICT services imports, % total trade	2017	2018	World Trade Organization
6.3.1	Intellectual property receipts, % total trade	2016	2018	World Trade Organization
6.3.2	High-tech net exports, % total trade	2016	2018	United Nations, COMTRADE
6.3.3	ICT services exports, % total trade	2017	2018	World Trade Organization
7.2.2	National feature films/mn pop. 15–69	2011	2017	UNESCO Institute for Statistics
7.2.5	Creative goods exports, % total trade	2016	2018	United Nations, COMTRADE
7.3.4	Mobile app creation/bn PPP$ GDP	2016	2019	App Annie

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.

Framework of the Global Innovation Index 2020



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.