# Global Innovation Index 2021

# NIGER

**129th** Niger ranks 129th among the 132 economies featured in the GII 2021.

**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 2021 is between ranks 120 and 129.

## Rankings for Niger (2019–2021)

| | GII | Innovation inputs | Innovation outputs |
|---|---|---|---|
| **2021** | 129 | 125 | 130 |
| **2020** | 128 | 124 | 129 |
| **2019** | 127 | 125 | 127 |

- Niger performs better in innovation inputs than innovation outputs in 2021.
- This year Niger ranks 125th in innovation inputs, lower than last year but the same as 2019.
- As for innovation outputs, Niger ranks 130th. This position is lower than both 2020 and 2019.

**11th** Niger ranks 11th among the 13 low-income group economies.

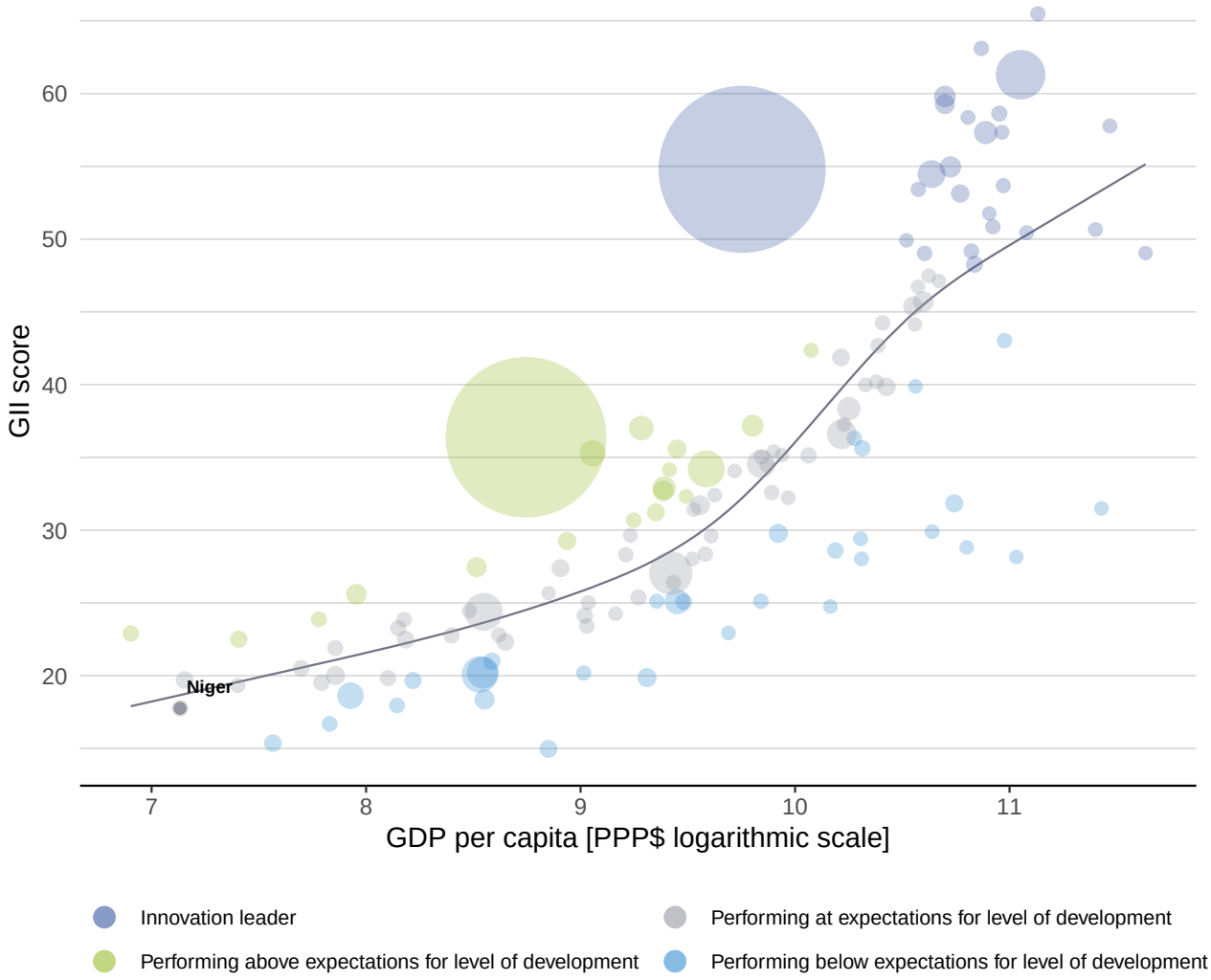
**25th** Niger ranks 25th among the 27 economies in Sub-Saharan Africa.

# 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

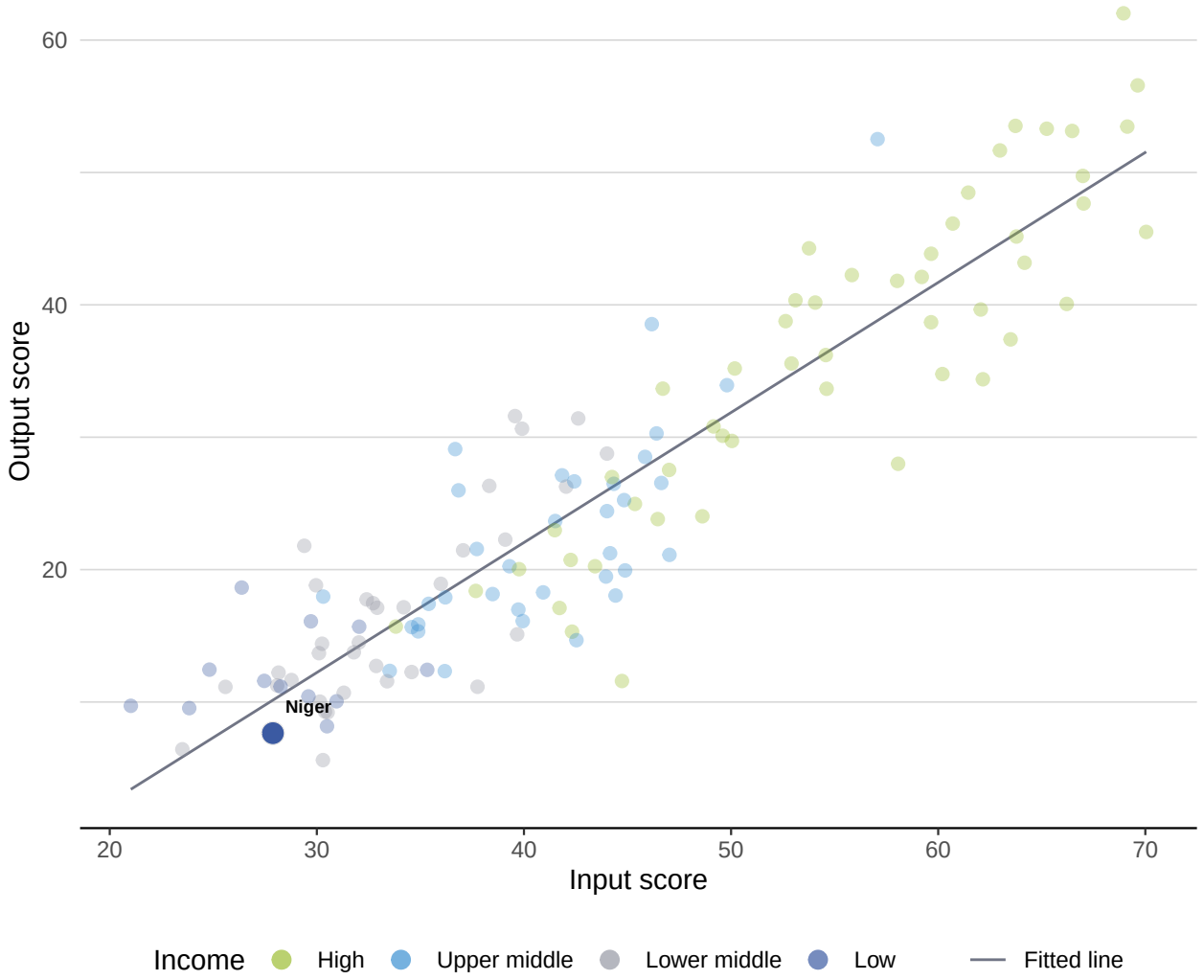


# EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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



# 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 two pillars, namely: Institutions; and, Market sophistication.

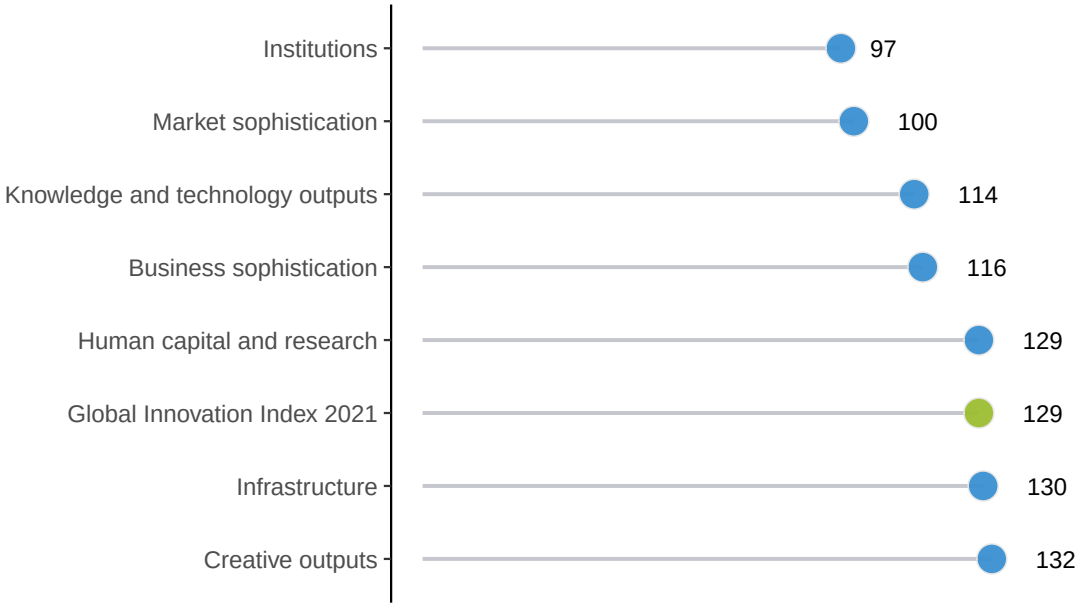
### Sub-Saharan Africa

Niger performs above the regional average in Market sophistication.

# OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 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 one.

# INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Niger in the GII 2021.

## Strengths and weaknesses for Niger

| Strengths | | | Weaknesses | | |
|---|---|---|---|---|---|
| **Code** | **Indicator name** | **Rank** | **Code** | **Indicator name** | **Rank** |
| 1.2.3 | Cost of redudancy dismissal | 53 | 2.1.3 | School life expectancy, years | 119 |
| 1.3.1 | Ease of starting a business | 49 | 2.3.3 | Global corporate R&D investors, top 3, mn US$ | 41 |
| 2.2.3 | Tertiary inbound mobility, % | 43 | 2.3.4 | QS university ranking, top 3 | 74 |
| 3.2.3 | Gross capital formation, % GDP | 19 | 3.1 | Information and communication technologies (ICTs) | 132 |
| 4.2.4 | Venture capital recipients, deals/bn PPP$ GDP | 21 | 3.1.2 | ICT use | 132 |
| 5.3.2 | High-tech imports, % total trade | 39 | 3.2.1 | Electricity output, GWh/mn pop. | 123 |
| 5.3.3 | ICT services imports, % total trade | 23 | 3.2.2 | Logistics performance | 124 |
| 5.3.4 | FDI net inflows, % GDP | 33 | 5.2.5 | Patent families/bn PPP$ GDP | 100 |
| 6.2.1 | Labor productivity growth, % | 50 | 6.1.2 | PCT patents by origin/bn PPP$ GDP | 98 |
| 6.3.4 | ICT services exports, % total trade | 29 | 6.1.3 | Utility models by origin/bn PPP$ GDP | 76 |
| | | | 7.1.3 | Industrial designs by origin/bn PPP$ GDP | 119 |

# Niger

GII 2021 rank
**129**

| Output rank | Input rank | Income | Region | Population (mn) | GDP, PPP$ (bn) | GDP per capita, PPP$ | GII 2020 rank |
|---|---|---|---|---|---|---|---|
| 130 | 125 | Low | SSF | 24.2 | 30.3 | 1,253 | 128 |

| | | Score/ Value | Rank | |
|---|---|---|---|---|
| **Institutions** | | **54.8** | **97** | |
| **1.1** | **Political environment** | **40.4** | **116** | |
| 1.1.1 | Political and operational stability* | 55.4 | 112 | |
| 1.1.2 | Government effectiveness* | 32.8 | 118 | |
| **1.2** | **Regulatory environment** | **58.7** | **83** | |
| 1.2.1 | Regulatory quality* | 26.0 | 110 | |
| 1.2.2 | Rule of law* | 32.7 | 96 | |
| 1.2.3 | Cost of redundancy dismissal | 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 and research** | | **8.5** | **129** | |
| **2.1** | **Education** | **18.1** | **128** | |
| 2.1.1 | Expenditure on education, % GDP | 3.5 | 84 | |
| 2.1.2 | Government funding/pupil, secondary, % GDP/cap | 11.7 | 87 | |
| 2.1.3 | School life expectancy, years ◴ | 6.4 | 119 ○ ◇ | |
| 2.1.4 | PISA scales in reading, maths and science | n/a | n/a | |
| 2.1.5 | Pupil-teacher ratio, secondary ◴ | 29.7 | 118 | |
| **2.2** | **Tertiary education** | **7.4** | **118** | |
| 2.2.1 | Tertiary enrolment, % gross | 4.2 | 125 | |
| 2.2.2 | Graduates in science and engineering, % | 12.3 | 102 | |
| 2.2.3 | Tertiary inbound mobility, % | 5.4 | 43 ● | |
| **2.3** | **Research and development (R&D)** | **0.1** | **122** | |
| 2.3.1 | Researchers, FTE/mn pop. ◴ | 26.5 | 104 | |
| 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 | 41 ○ ◇ | |
| 2.3.4 | QS university ranking, top 3* | 0.0 | 74 ○ ◇ | |
| **Infrastructure** | | **19.6** | **130** | |
| **3.1** | **Information and communication technologies (ICTs)** | **21.3** | **132** ○ ◇ | |
| 3.1.1 | ICT access* | 23.0 | 130 | |
| 3.1.2 | ICT use* | 3.1 | 132 ○ ◇ | |
| 3.1.3 | Government's online service* | 29.4 | 125 | |
| 3.1.4 | E-participation* | 29.8 | 127 | |
| **3.2** | **General infrastructure** | **22.1** | **97** | |
| 3.2.1 | Electricity output, GWh/mn pop. | 27.0 | 123 ○ | |
| 3.2.2 | Logistics performance* | 1.1 | 124 ○ ◇ | |
| 3.2.3 | Gross capital formation, % GDP | 32.4 | 19 ● | |
| **3.3** | **Ecological sustainability** | **15.4** | **123** | |
| 3.3.1 | GDP/unit of energy use | 6.8 | 102 | |
| 3.3.2 | Environmental performance* | 30.8 | 118 | |
| 3.3.3 | ISO 14001 environmental certificates/bn PPP$ GDP | 0.2 | 120 | |
| **Market sophistication** | | **40.2** | **100** | |
| **4.1** | **Credit** | **29.3** | **109** | |
| 4.1.1 | Ease of getting credit* | 70.0 | 44 | |
| 4.1.2 | Domestic credit to private sector, % GDP | 11.2 | 126 | |
| 4.1.3 | Microfinance gross loans, % GDP ◴ | 0.1 | 59 | |
| **4.2** | **Investment** | **33.3** | **[55]** | |
| 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 investors, deals/bn PPP$ GDP | n/a | n/a | |
| 4.2.4 | Venture capital recipients, deals/bn PPP$ GDP | 0.1 | 21 ● ◆ | |
| **4.3** | **Trade, diversification, and market scale** | **58.0** | **100** | |
| 4.3.1 | Applied tariff rate, weighted avg., % | 9.3 | 112 | |
| 4.3.2 | Domestic industry diversification | 88.2 | 57 | |
| 4.3.3 | Domestic market scale, bn PPP$ | 30.3 | 121 | |

| | | Score/ Value | Rank | |
|---|---|---|---|---|
| **Business sophistication** | | **16.2** | **[116]** | |
| **5.1** | **Knowledge workers** | | **20.4** | **[100]** |
| 5.1.1 | Knowledge-intensive employment, % ◴ | 15.3 | 93 | ◆ |
| 5.1.2 | Firms offering formal training, % ◴ | 27.5 | 56 | |
| 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 | 118 | |
| **5.2** | **Innovation linkages** | | **1.2** | **[132]** |
| 5.2.1 | University-industry R&D collaboration† | n/a | n/a | |
| 5.2.2 | State of cluster development and depth† | 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 | 100 ○ ◇ | |
| **5.3** | **Knowledge absorption** | | **27.0** | **65** ◆ |
| 5.3.1 | Intellectual property payments, % total trade | 0.0 | 120 | |
| 5.3.2 | High-tech imports, % total trade ◴ | 9.5 | 39 ● | |
| 5.3.3 | ICT services imports, % total trade | 2.4 | 23 ● ◆ | |
| 5.3.4 | FDI net inflows, % GDP | 3.7 | 33 ● | |
| 5.3.5 | Research talent, % in businesses | n/a | n/a | |
| **Knowledge and technology outputs** | | **10.8** | **114** | |
| **6.1** | **Knowledge creation** | | **2.4** | **125** |
| 6.1.1 | Patents by origin/bn PPP$ GDP | 0.1 | 112 | |
| 6.1.2 | PCT patents by origin/bn PPP$ GDP | 0.0 | 98 ○ ◇ | |
| 6.1.3 | Utility models by origin/bn PPP$ GDP ◴ | 0.0 | 76 ○ ◇ | |
| 6.1.4 | Scientific and technical articles/bn PPP$ GDP | 4.6 | 115 | |
| 6.1.5 | Citable documents H-index | 3.5 | 118 | |
| **6.2** | **Knowledge impact** | | **18.6** | **111** |
| 6.2.1 | Labor productivity growth, % | 0.9 | 50 ● | |
| 6.2.2 | New businesses/th pop. 15–64 | 0.1 | 118 | |
| 6.2.3 | Software spending, % GDP | 0.0 | 114 | |
| 6.2.4 | ISO 9001 quality certificates/bn PPP$ GDP | 0.3 | 129 | |
| 6.2.5 | High-tech manufacturing, % | 15.3 | 72 | ◆ |
| **6.3** | **Knowledge diffusion** | | **11.5** | **87** |
| 6.3.1 | Intellectual property receipts, % total trade ◴ | 0.0 | 111 | |
| 6.3.2 | Production and export complexity | n/a | n/a | |
| 6.3.3 | High-tech exports, % total trade ◴ | 0.2 | 109 | |
| 6.3.4 | ICT services exports, % total trade | 3.3 | 29 ● ◆ | |
| **Creative outputs** | | **4.5** | **[132]** | |
| **7.1** | **Intangible assets** | | **5.6** | **[132]** |
| 7.1.1 | Trademarks by origin/bn PPP$ GDP | 12.1 | 107 | |
| 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 and organizational model creation† | n/a | n/a | |
| **7.2** | **Creative goods and services** | | **1.3** | **[125]** |
| 7.2.1 | Cultural and creative services exports, % total trade | 0.1 | 87 | |
| 7.2.2 | National feature films/mn pop. 15–69 ◴ | 0.7 | 92 | |
| 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 | 123 | |
| **7.3** | **Online creativity** | | **5.4** | **121** |
| 7.3.1 | Generic top-level domains (TLDs)/th pop. 15–69 | 0.9 | 99 | ◆ |
| 7.3.2 | Country-code TLDs/th pop. 15–69 | 0.0 | 129 | |
| 7.3.3 | Wikipedia edits/mn pop. 15–69 | 24.1 | 115 | |
| 7.3.4 | Mobile app creation/bn PPP$ GDP ◴ | 0.0 | 94 | |

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 IV 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 for Niger

| Code | Indicator name | Economy year | Model year | Source |
|---|---|---|---|---|
| 2.1.4 | PISA scales in reading, maths and science | n/a | 2018 | OECD Programme for International Student Assessment (PISA) |
| 2.3.2 | Gross expenditure on R&D, % GDP | n/a | 2019 | UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators |
| 4.2.2 | Market capitalization, % GDP | n/a | 2019 | World Federation of Exchanges |
| 4.2.3 | Venture capital investors, deals/bn PPP$ GDP | n/a | 2020 | Refinitiv Eikon |
| 5.1.3 | GERD performed by business, % GDP | n/a | 2019 | UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators |
| 5.1.4 | GERD financed by business, % | n/a | 2018 | UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators |
| 5.2.1 | University-industry R&D collaboration | n/a | 2020 | World Economic Forum |
| 5.2.2 | State of cluster development and depth | n/a | 2020 | World Economic Forum |
| 5.2.3 | GERD financed by abroad, % GDP | n/a | 2018 | UNESCO Institute for Statistics |
| 5.3.5 | Research talent, % in businesses | n/a | 2019 | UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators |
| 6.3.2 | Production and export complexity | n/a | 2018 | Growth Lab, Harvard University |
| 7.1.2 | Global brand value, top 5,000, % GDP | n/a | 2020 | Brand Finance |
| 7.1.4 | ICTs and organizational model creation | n/a | 2018 | World Economic Forum |
| 7.2.3 | Entertainment and media market/th pop. 15–69 | n/a | 2020 | PwC |
| 7.2.4 | Printing and other media, % manufacturing | n/a | 2018 | United Nations Industrial Development Organization |

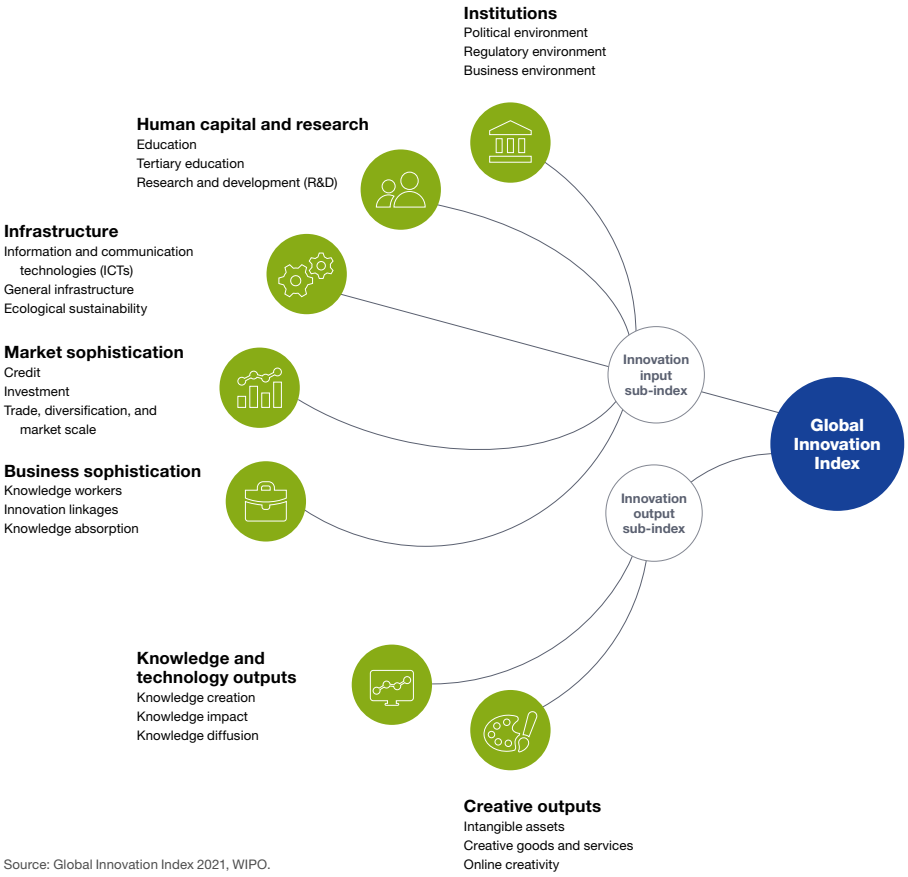
## Outdated data for Niger

| Code | Indicator name | Economy year | Model year | Source |
|---|---|---|---|---|
| 2.1.3 | School life expectancy, years | 2017 | 2018 | UNESCO Institute for Statistics |
| 2.1.5 | Pupil-teacher ratio, secondary | 2017 | 2019 | UNESCO Institute for Statistics |
| 2.3.1 | Researchers, FTE/mn pop. | 2013 | 2019 | UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators |
| 4.1.3 | Microfinance gross loans, % GDP | 2016 | 2018 | Microfinance Information Exchange |
| 5.1.1 | Knowledge-intensive employment, % | 2017 | 2019 | International Labour Organization |
| 5.1.2 | Firms offering formal training, % | 2017 | 2019 | World Bank |
| 5.1.5 | Females employed w/advanced degrees, % | 2017 | 2019 | International Labour Organization |
| 5.3.2 | High-tech imports, % total trade | 2018 | 2019 | United Nations, COMTRADE |
| 6.1.3 | Utility models by origin/bn PPP$ GDP | 2018 | 2019 | World Intellectual Property Organization |
| 6.3.1 | Intellectual property receipts, % total trade | 2016 | 2019 | World Trade Organization |
| 6.3.3 | High-tech exports, % total trade | 2018 | 2019 | United Nations, COMTRADE |
| 7.2.2 | National feature films/mn pop. 15–69 | 2011 | 2017 | UNESCO Institute for Statistics |
| 7.2.5 | Creative goods exports, % total trade | 2018 | 2019 | United Nations, COMTRADE |
| 7.3.4 | Mobile app creation/bn PPP$ GDP | 2016 | 2020 | App Annie |

# 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 2021, WIPO.

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.