Global Innovation Index 2021

NIGERIA

118th Nigeria ranks 118th 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 Nigeria 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 Nigeria in the GII 2021 is between ranks 114 and 125.

Rankings for Nigeria (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	118	115	124
2020	117	115	121
2019	114	116	105

- Nigeria performs better in innovation inputs than innovation outputs in 2021.
- This year Nigeria ranks 115th in innovation inputs, the same as last year but higher than 2019.
- As for innovation outputs, Nigeria ranks 124th. This position is lower than both 2020 and 2019.

28th Nigeria ranks 28th among the 34 lower middle-income group economies.

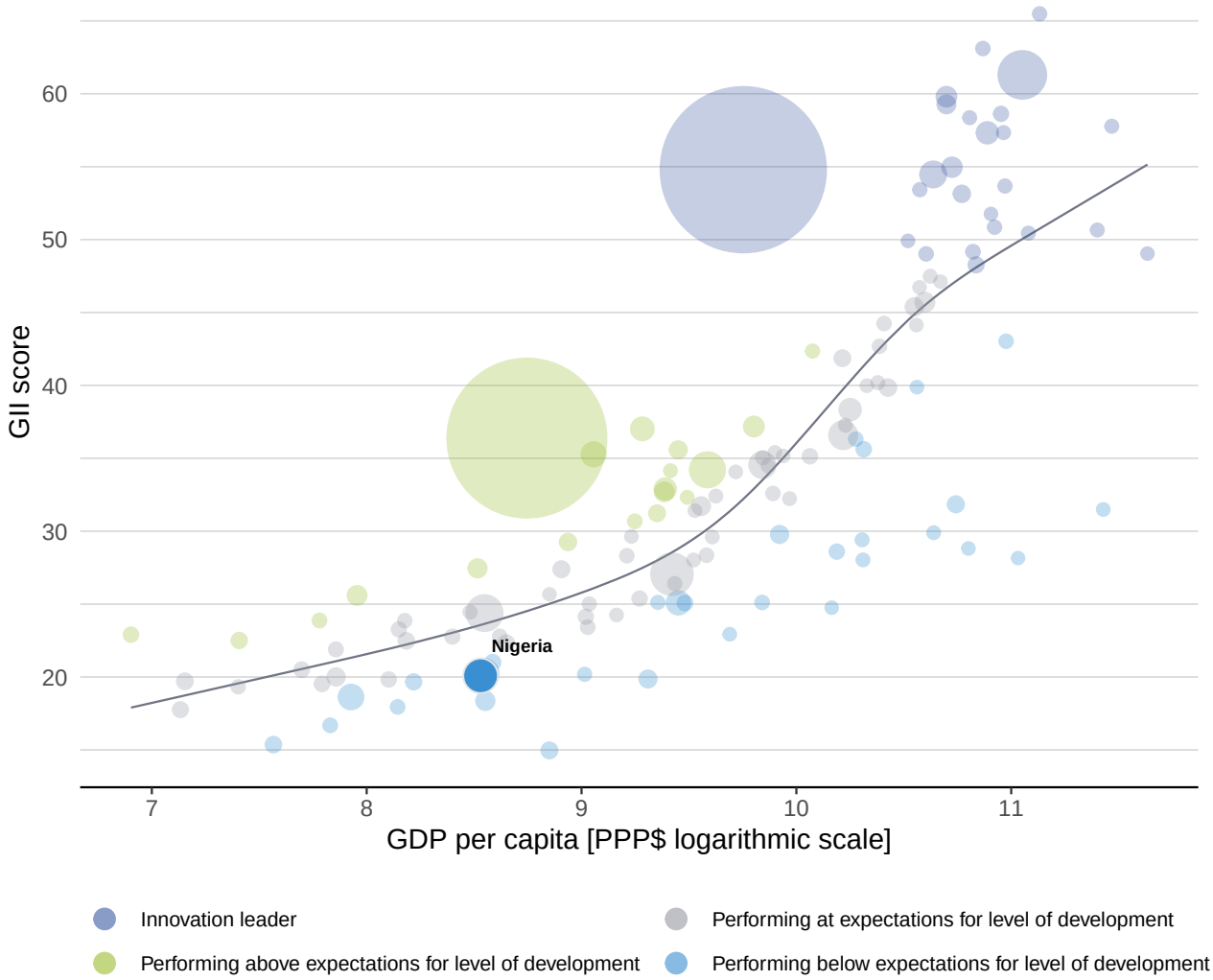
16th Nigeria ranks 16th among the 27 economies in Sub-Saharan Africa.

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, Nigeria's performance is below expectations for its level of development.

The positive relationship between innovation and development

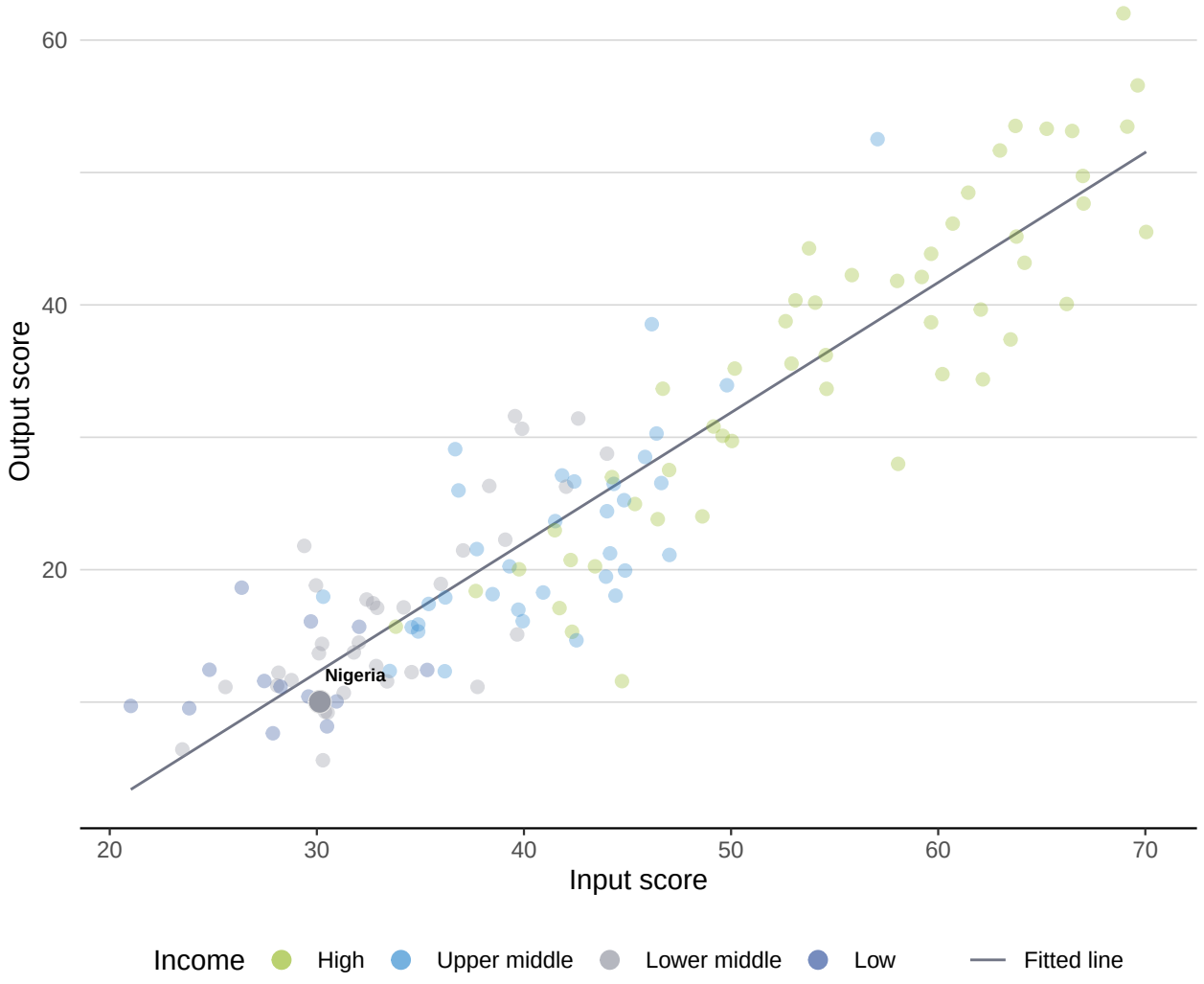


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance



BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

The seven GII pillar scores for Nigeria

Lower middle-income group economies

Nigeria performs above the lower middle-income group average in Business sophistication.

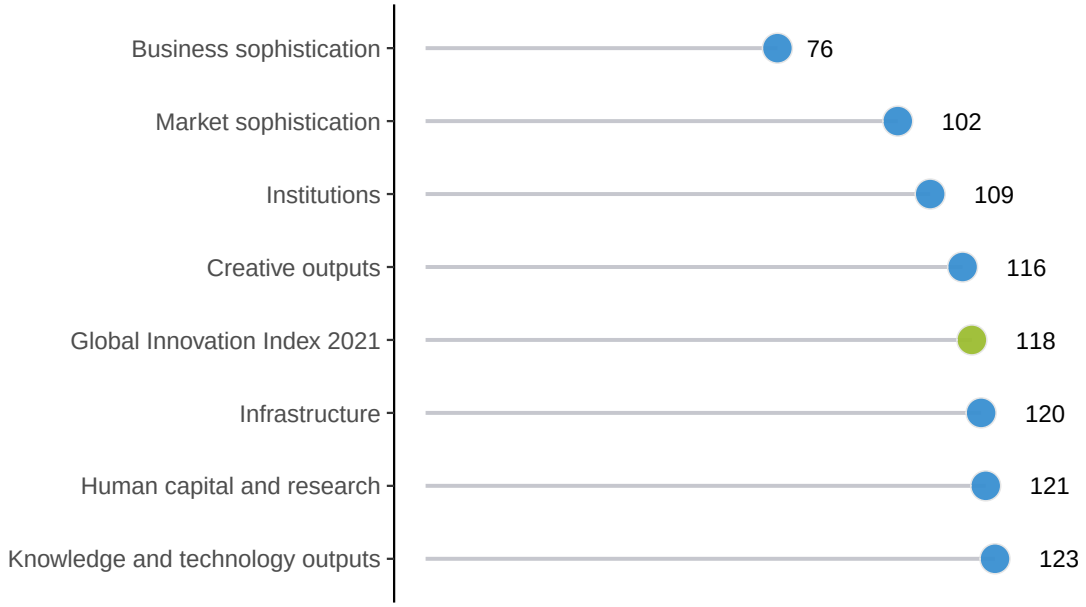
Sub-Saharan Africa

Nigeria performs above the regional average in two pillars, namely: Market sophistication; and, Business sophistication.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Nigeria performs best in Business sophistication and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for Nigeria



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 Nigeria in the GII 2021.

Strengths and weaknesses for Nigeria

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redudancy dismissal	1	1.1	Political environment	128
3.2.3	Gross capital formation, % GDP	43	1.1.1	Political and operational stability	127
4.1.1	Ease of getting credit	14	1.1.2	Government effectiveness	127
4.2.1	Ease of protecting minority investors	27	2.1.3	School life expectancy, years	115
4.3.3	Domestic market scale, bn PPP$	24	2.3.3	Global corporate R&D investors, top 3, mn US$	41
5.1.1	Knowledge-intensive employment, %	52	2.3.4	QS university ranking, top 3	74
5.1.2	Firms offering formal training, %	50	3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	128
6.1.5	Citable documents H-index	63	4.1.2	Domestic credit to private sector, % GDP	127
7.1.3	Industrial designs by origin/bn PPP$ GDP	64	6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	128
7.2.2	National feature films/mn pop. 15–69	15	6.3	Knowledge diffusion	131
			6.3.2	Production and export complexity	121
			7.2.5	Creative goods exports, % total trade	131
			7.3	Online creativity	127
			7.3.3	Wikipedia edits/mn pop. 15–69	126

Nigeria

GII 2021 rank
118

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
124	**115**	**Lower middle**	**SSF**	**206.1**	**1,044.2**	**5,066**	**117**

		Score/ Value	Rank	
Institutions		**51.0**	**109**	
1.1	**Political environment**	**33.7**	**128**	○ ◇
1.1.1	Political and operational stability*	48.2	127	○ ◇
1.1.2	Government effectiveness*	26.5	127	○ ◇
1.2	**Regulatory environment**	**61.0**	**79**	
1.2.1	Regulatory quality*	21.0	122	
1.2.2	Rule of law*	23.1	117	
1.2.3	Cost of redundancy dismissal	8.0	1	● ◆
1.3	**Business environment**	**58.4**	**109**	
1.3.1	Ease of starting a business*	86.2	81	
1.3.2	Ease of resolving insolvency*	30.6	118	
Human capital and research		**11.9**	**[121]**	
2.1	**Education**	**29.0**	**[118]**	
2.1.1	Expenditure on education, % GDP	n/a	n/a	
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years ◴	8.7	115	○ ◇
2.1.4	PISA scales in reading, maths and science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary ◴	23.2	104	
2.2	**Tertiary education**	**6.6**	**[120]**	
2.2.1	Tertiary enrolment, % gross ◴	10.2	112	
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**	**[123]**	
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	41	○ ◇
2.3.4	QS university ranking, top 3*	0.0	74	○ ◇
Infrastructure		**24.6**	**120**	◇
3.1	**Information and communication technologies (ICTs)**	**36.7**	**116**	
3.1.1	ICT access*	31.7	121	◇
3.1.2	ICT use*	14.5	123	◇
3.1.3	Government's online service*	51.8	102	
3.1.4	E-participation*	48.8	105	
3.2	**General infrastructure**	**21.8**	**99**	
3.2.1	Electricity output, GWh/mn pop.	185.2	117	
3.2.2	Logistics performance*	22.5	104	
3.2.3	Gross capital formation, % GDP	25.4	43	●
3.3	**Ecological sustainability**	**15.4**	**122**	◇
3.3.1	GDP/unit of energy use	7.0	101	
3.3.2	Environmental performance*	31.0	117	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.1	128	○
Market sophistication		**39.7**	**102**	
4.1	**Credit**	**35.2**	**88**	
4.1.1	Ease of getting credit*	85.0	14	● ◆
4.1.2	Domestic credit to private sector, % GDP	10.5	127	○ ◇
4.1.3	Microfinance gross loans, % GDP	0.1	60	
4.2	**Investment**	**20.7**	**110**	
4.2.1	Ease of protecting minority investors*	72.0	27	● ◆
4.2.2	Market capitalization, % GDP	9.2	69	
4.2.3	Venture capital investors, deals/bn PPP$ GDP	0.0	70	
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	0.0	61	
4.3	**Trade, diversification, and market scale**	**63.4**	**82**	
4.3.1	Applied tariff rate, weighted avg., % ◴	8.5	106	
4.3.2	Domestic industry diversification	n/a	n/a	
4.3.3	Domestic market scale, bn PPP$	1,044.2	24	● ◆

		Score/ Value	Rank	
Business sophistication		**23.4**	**76**	
5.1	**Knowledge workers**	**34.7**	**[57]**	
5.1.1	Knowledge-intensive employment, % ◴	28.4	52	● ◆
5.1.2	Firms offering formal training, % ◴	30.7	50	●
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, %	6.2	90	
5.2	**Innovation linkages**	**17.8**	**87**	
5.2.1	University-industry R&D collaboration†	26.0	122	◇
5.2.2	State of cluster development and depth†	45.4	75	
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	92	
5.2.5	Patent families/bn PPP$ GDP	0.0	98	
5.3	**Knowledge absorption**	**17.8**	**104**	
5.3.1	Intellectual property payments, % total trade	0.4	76	
5.3.2	High-tech imports, % total trade	7.1	76	
5.3.3	ICT services imports, % total trade	0.3	114	
5.3.4	FDI net inflows, % GDP	0.7	114	
5.3.5	Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs		**8.3**	**123**	
6.1	**Knowledge creation**	**5.8**	**107**	
6.1.1	Patents by origin/bn PPP$ GDP ◴	0.1	110	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	97	
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific and technical articles/bn PPP$ GDP	5.1	108	
6.1.5	Citable documents H-index	12.2	63	●
6.2	**Knowledge impact**	**18.2**	**113**	
6.2.1	Labor productivity growth, %	–1.0	83	
6.2.2	New businesses/th pop. 15–64	0.8	87	
6.2.3	Software spending, % GDP	0.1	83	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	0.3	128	○
6.2.5	High-tech manufacturing, %	n/a	n/a	
6.3	**Knowledge diffusion**	**1.0**	**131**	○ ◇
6.3.1	Intellectual property receipts, % total trade	n/a	n/a	
6.3.2	Production and export complexity	0.0	121	○ ◇
6.3.3	High-tech exports, % total trade	0.1	120	
6.3.4	ICT services exports, % total trade	0.2	116	
Creative outputs		**11.7**	**116**	
7.1	**Intangible assets**	**16.7**	**112**	
7.1.1	Trademarks by origin/bn PPP$ GDP	10.5	111	
7.1.2	Global brand value, top 5,000, % GDP	3.5	72	
7.1.3	Industrial designs by origin/bn PPP$ GDP ◴	1.1	64	●
7.1.4	ICTs and organizational model creation†	47.5	89	
7.2	**Creative goods and services**	**9.8**	**[80]**	
7.2.1	Cultural and creative services exports, % total trade	n/a	n/a	
7.2.2	National feature films/mn pop. 15–69 ◴	11.3	15	● ◆
7.2.3	Entertainment and media market/th pop. 15–69	1.5	55	
7.2.4	Printing and other media, % manufacturing	n/a	n/a	
7.2.5	Creative goods exports, % total trade	0.0	131	○ ◇
7.3	**Online creativity**	**3.7**	**127**	○
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	0.5	109	
7.3.2	Country-code TLDs/th pop. 15–69	0.4	99	
7.3.3	Wikipedia edits/mn pop. 15–69	18.1	126	○ ◇
7.3.4	Mobile app creation/bn PPP$ GDP	0.4	82	

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 Nigeria.

Missing data for Nigeria

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	n/a	2017	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.2.2	Graduates in science and engineering, %	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.2.3	Tertiary inbound mobility, %	n/a	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.3.2	Domestic industry diversification	n/a	2018	United Nations Industrial Development Organization
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
5.2.3	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
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2019	World Intellectual Property Organization
6.2.5	High-tech manufacturing, %	n/a	2018	United Nations Industrial Development Organization

Code	Indicator name	Economy year	Model year	Source
6.3.1	Intellectual property receipts, % total trade	n/a	2019	World Trade Organization
7.2.1	Cultural and creative services exports, % total trade	n/a	2019	World Trade Organization
7.2.4	Printing and other media, % manufacturing	n/a	2018	United Nations Industrial Development Organization

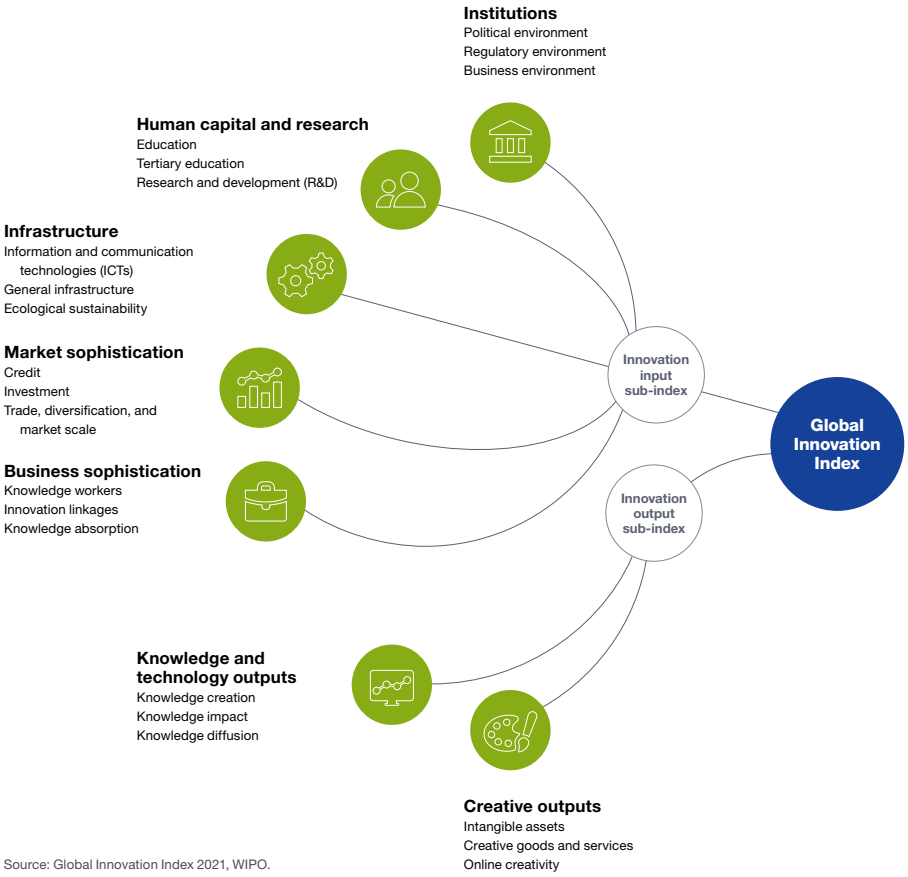
Outdated data for Nigeria

Code	Indicator name	Economy year	Model year	Source
2.1.3	School life expectancy, years	2011	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2010	2019	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2011	2018	UNESCO Institute for Statistics
4.3.1	Applied tariff rate, weighted avg., %	2016	2019	World Bank
5.1.1	Knowledge-intensive employment, %	2013	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2014	2019	World Bank
6.1.1	Patents by origin/bn PPP$ GDP	2018	2019	World Intellectual Property Organization
7.1.3	Industrial designs by origin/bn PPP$ GDP	2018	2019	World Intellectual Property Organization
7.2.2	National feature films/mn pop. 15–69	2011	2017	UNESCO Institute for Statistics

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.