

# GLOBAL INNOVATION INDEX 2018

## Nigeria

**118<sup>th</sup>** Nigeria is ranked 118th in the GII 2018, moving up 1 position from last year.

The GII indicators are grouped into innovation inputs and outputs. The following table reflects Nigeria's rankings over time<sup>1</sup>.

Nigeria's ranking over time

	GII	Input	Output	Efficiency
2018	118	116	115	96
2017	119	118	119	102
2016	114	122	107	60

- Over the last three years, Nigeria shows an upward trajectory in innovation inputs, moving to the 116th position, up from the 118th in 2017 and 122nd in 2016.
- This year Nigeria also improves in innovation outputs, ranking 115th, up from the 119th position in 2017, but down from the 107th in 2016.
- Compared to its GII position (118th), Nigeria's Innovation Efficiency Ratio (96th) is relatively stronger. This is partly influenced by a slightly higher ranking in innovation outputs (115th) compared to inputs (116th).

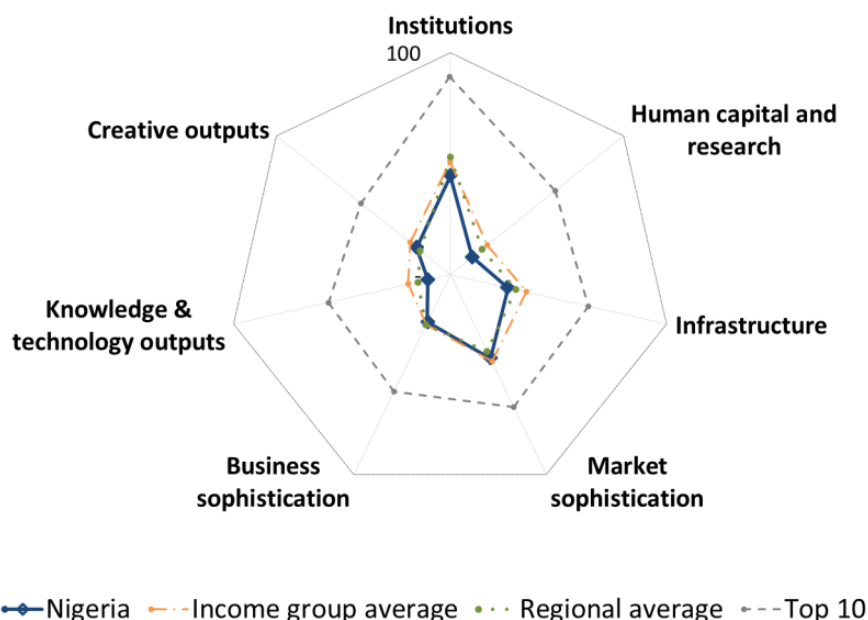
**27<sup>th</sup>** Nigeria is ranked 27th among the 30 lower-middle-income countries in the GII 2018.

**17<sup>th</sup>** Nigeria is ranked 17th among the 24 countries in Sub-Saharan Africa in the GII 2018.

<sup>1</sup> Note that year-on-year comparisons of the GII ranks are imperfect and influenced by changes in the GII model and data availability.

## Benchmarking Nigeria to other lower-middle-income countries and the Sub-Saharan Africa region

Nigeria's scores by area



### Lower-middle-income countries

Nigeria scores below the average of the lower-middle-income group in all of the 7 GII areas.

### Sub-Saharan Africa region

Compared to other countries in the Sub-Saharan Africa region, Nigeria performs above-average in 2 of the 7 GII areas - Market Sophistication and Creative Outputs.

## Nigeria's innovation profile

### Strengths

- Most of the comparative GII strengths for Nigeria are accrued in **innovation inputs** across three of the five GII areas capturing inputs.
- In **Market Sophistication** (95th) – which is the best-ranked GII area for Nigeria – it presents strong performance in the area *Trade, competition & market scale* (70th). At the indicator level, GII strengths are demonstrated in *Ease of protecting minority investors* (32nd), *Intensity of local competition* (67th), *Domestic market scale* (22nd), and *Ease of getting credit*, which positions 6th globally.
- Nigeria also exhibits a number of comparative GII strengths in **Business Sophistication** (104th). These are highlighted in indicators *Knowledge-intensive employment* (49th), *Firms offering formal training* (49th), and *Intellectual property payments* (57th).
- In **Institutions** (119th), the indicator *Cost of redundancy dismissal* presents particularly strong performance. Here Nigeria is number 1 in the world.
- On the **innovation output** side, Nigeria shows strengths in three indicators: *Quality of scientific publications* (62nd) in **Knowledge & Technology Outputs** (119th) and *ICTs & business model creation* (67th) and *National feature films* (13th) in **Creative Outputs** (99th).

## Weaknesses

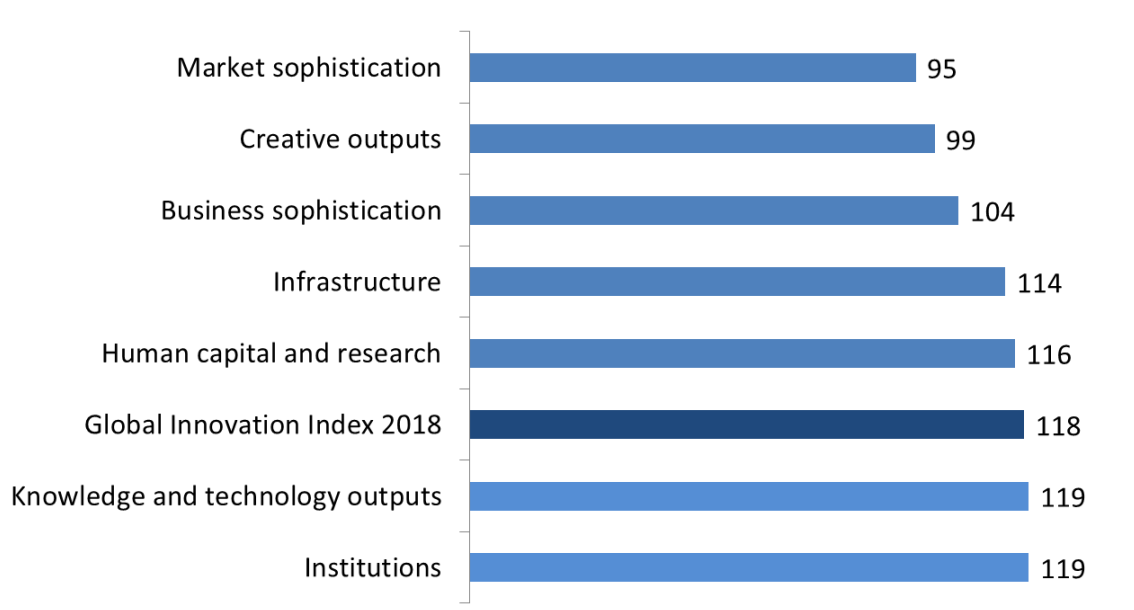
- On the **innovation input** side, GII weaknesses are scattered across four of the five GII areas collecting input indicators, while no relative weaknesses are found in **Market Sophistication** (95th).
- In **Institutions** (119th), GII weaknesses lie in the area of *Political environment* (125th) and in the indicator *Government effectiveness* (123rd).
- Relative weaknesses also appear in **Human Capital & Research** (116th) in indicators *Global R&D companies expenditures* (40th) and *Quality of universities* (78th).
- In **Infrastructure** (114th), only one indicator - *Gross capital formation* (119th) - is a relative weakness for Nigeria.
- In **Business Sophistication** (104th), indicators *University-industry research collaboration* (118th) and *Patent families in 2 or more offices* (114th) present comparatively weak performance.
- On the **innovation output** side, Nigeria performs relatively weakly in four indicators within the area **Knowledge & Technology Outputs** (119th). These are *PCT patents by origin* (106th), *Productivity growth* (110th), *ISO 9001 quality certificates* (123rd), and *High-tech exports* (121st).
- No relative weakness is found in **Creative Outputs** (99th), the second-best ranked GII area for Nigeria.

The following figure presents a summary of Nigeria's ranks in the 7 GII areas, as well as the overall rank in the GII 2018.

### Nigeria's rank in the GII 2018 and the 7 GII areas

Rank 1 is the highest possible in each pillar

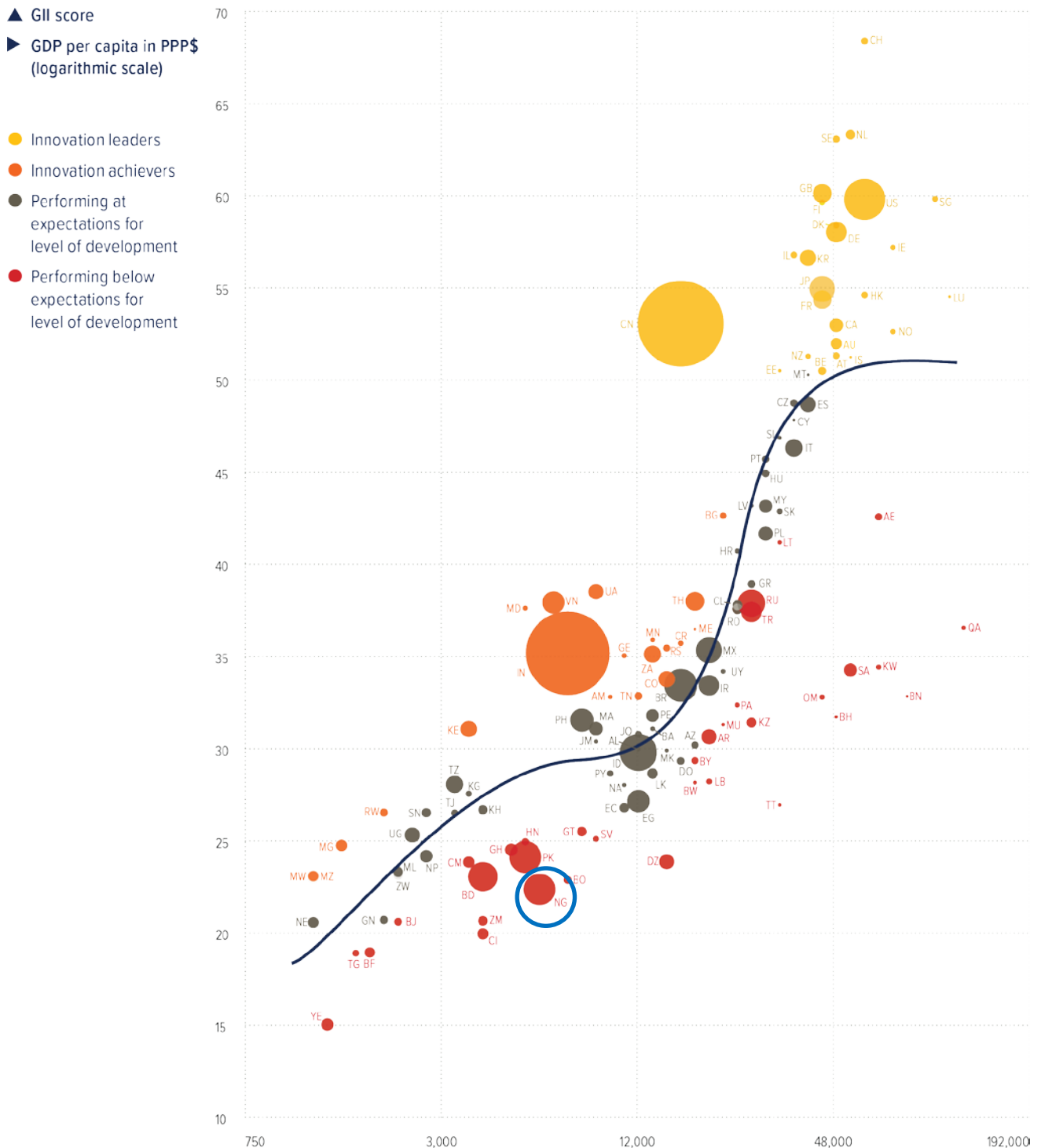
Total number of countries: 126



## Expected vs. Observed Innovation Performance

The GII bubble chart shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The depicted trendline gives an indication of the expected innovation performance at different levels of income. Countries located above the trendline are performing better than what would be expected based on their income level. Countries below the line are Innovation Under-performers relative to GDP.

Relative to GDP, Nigeria performs well below its expected level of development.



## Missing and Outdated Data

More and better data improves the ability of a country to understand its strengths and weaknesses and give policymakers greater capacity to plan and adapt public policies accordingly. The GII 2018 covers 126 countries that complied with the minimum indicator coverage of 35 indicators in the Innovation Input Sub-Index (66%) and 18 indicators in the Innovation Output Sub-Index (66%).

The following tables show data for Nigeria that is not available or that is outdated.

### Missing Data







Code	Indicator	Country Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	n/a	2014	UNESCO Institute for Statistics (UIS)
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2014	UNESCO Institute for Statistics (UIS)
2.1.4	PISA scales in reading, maths & science	n/a	2015	OECD PISA
2.2.2	Graduates in science & engineering, %	n/a	2016	UNESCO Institute for Statistics (UIS)
2.2.3	Tertiary inbound mobility, %	n/a	2016	UNESCO Institute for Statistics (UIS)
5.1.3	GERD performed by business, % GDP	n/a	2016	UNESCO Institute for Statistics (UIS)
5.1.5	Females employed w/advanced degrees, %	n/a	2016	ILO, ILOSTAT
5.3.5	Research talent, % in business enterprise	n/a	2016	UNESCO Institute for Statistics (UIS)
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2016	WIPO, Intellectual Property Statistics
6.2.5	High- & medium-high-tech manufactures, %	n/a	2015	UNIDO, Industrial Statistics
6.3.1	Intellectual property receipts, % total trade	n/a	2016	WTO, Trade in Commercial Services
7.2.1	Cultural & creative services exports, % total trade	n/a	2016	WTO, Trade in Commercial Services
7.2.4	Printing & other media, % manufacturing	n/a	2015	UNIDO, Industrial Statistics

### Outdated Data

Code	Indicator	Country Year	Model Year	Source
2.1.3	School life expectancy, years	2011	2016	UNESCO Institute for Statistics (UIS)
2.1.5	Pupil-teacher ratio, secondary	2010	2016	UNESCO Institute for Statistics (UIS)
2.2.1	Tertiary enrolment, % gross	2011	2016	UNESCO Institute for Statistics (UIS)
2.3.1	Researchers, FTE/mn pop.	2007	2016	UNESCO Institute for Statistics (UIS)
2.3.2	Gross expenditure on R&D, % GDP	2007	2016	UNESCO Institute for Statistics (UIS)
5.1.1	Knowledge-intensive employment, %	2013	2016	ILO, ILOSTAT
5.1.4	GERD financed by business, %	2007	2015	UNESCO Institute for Statistics (UIS)
5.2.3	GERD financed by abroad, %	2007	2015	UNESCO Institute for Statistics (UIS)
6.1.1	Patents by origin/bn PPP\$ GDP	2013	2016	WIPO, Intellectual Property Statistics
7.1.1	Trademarks by origin/bn PPP\$ GDP	2013	2016	WIPO, Intellectual Property Statistics
7.1.2	Industrial designs by origin/bn PPP\$ GDP	2013	2016	WIPO, Intellectual Property Statistics
7.2.2	National feature films/mn pop. 15–69	2011	2015	UNESCO Institute for Statistics (UIS)
7.2.5	Creative goods exports, % total trade	2014	2016	UN COMTRADE
7.3.3	Wikipedia edits/mn pop. 15–69	2014	2017	Wikimedia Foundation



Output rank	Input rank	Income	Region	Efficiency ratio	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2017 rank
115	116	Lower-middle	SSF	96	190.9	1,118.4	5,929.2	119

				Score/Value	Rank					Score/Value	Rank
	<b>Institutions</b> .....	<b>44.7</b>	<b>119</b>					<b>23.5</b>	<b>104</b>		
1.1	Political environment.....	19.4	125	○◇	5.1	Knowledge workers.....	33.1	72			
1.1.1	Political stability & safety*.....	21.7	122	◇	5.1.1	Knowledge-intensive employment, % <sup>②</sup> .....	28.4	49 ●◆			
1.1.2	Government effectiveness*.....	18.2	123	○◇	5.1.2	Firms offering formal training, % firms.....	30.7	49 ●◆			
1.2	Regulatory environment.....	58.9	81		5.1.3	GERD performed by business, % GDP.....	n/a	n/a			
1.2.1	Regulatory quality*.....	20.5	117	◇	5.1.4	GERD financed by business, % <sup>②</sup> .....	0.2	93 ○			
1.2.2	Rule of law*.....	15.0	118	◇	5.1.5	Females employed w/advanced degrees, %.....	n/a	n/a			
1.2.3	Cost of redundancy dismissal, salary weeks.....	8.0	1	◆	5.2	Innovation linkages.....	16.6	118			
1.3	Business environment.....	55.7	111		5.2.1	University/industry research collaboration <sup>†</sup> .....	25.3	118 ○◇			
1.3.1	Ease of starting a business*.....	80.8	98		5.2.2	State of cluster development <sup>†</sup> .....	40.2	88			
1.3.2	Ease of resolving insolvency*.....	30.6	114		5.2.3	GERD financed by abroad, % <sup>②</sup> .....	1.0	91			
					5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....	0.0	78			
					5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....	0.0	114 ○			
	<b>Human capital &amp; research</b> .....	<b>12.9</b>	<b>[116]</b>					<b>10.3</b>	<b>119</b> ○		
2.1	Education.....	29.5	[109]		5.3	Knowledge absorption.....	20.9	102			
2.1.1	Expenditure on education, % GDP.....	n/a	n/a		5.3.1	Intellectual property payments, % total trade.....	0.6	57 ●			
2.1.2	Government funding/pupil, secondary, % GDP/cap.....	n/a	n/a		5.3.2	High-tech net imports, % total trade.....	5.9	98			
2.1.3	School life expectancy, years <sup>②</sup> .....	8.7	108	◇	5.3.3	ICT services imports, % total trade.....	0.8	80			
2.1.4	PISA scales in reading, maths & science.....	n/a	n/a		5.3.4	FDI net inflows, % GDP.....	0.9	110			
2.1.5	Pupil-teacher ratio, secondary <sup>②</sup> .....	23.2	91		5.3.5	Research talent, % in business enterprise.....	n/a	n/a			
2.2	Tertiary education.....	7.8	[110]			<b>Knowledge &amp; technology outputs</b> .....	<b>10.3</b>	<b>119</b> ○			
2.2.1	Tertiary enrolment, % gross <sup>②</sup> .....	10.2	102	◇	6.1	Knowledge creation.....	3.5	111			
2.2.2	Graduates in science & engineering, %.....	n/a	n/a		6.1.1	Patents by origin/bn PPP\$ GDP <sup>②</sup> .....	0.1	118			
2.2.3	Tertiary inbound mobility, %.....	n/a	n/a		6.1.2	PCT patents by origin/bn PPP\$ GDP.....	0.0	106 ○			
2.3	Research & development (R&D).....	1.3	103		6.1.3	Utility models by origin/bn PPP\$ GDP.....	n/a	n/a			
2.3.1	Researchers, FTE/mn pop. <sup>②</sup> .....	38.6	94		6.1.4	Scientific & technical articles/bn PPP\$ GDP.....	1.7	115			
2.3.2	Gross expenditure on R&D, % GDP <sup>②</sup> .....	0.2	88		6.1.5	Citable documents H index.....	10.1	62 ●			
2.3.3	Global R&D companies, top 3, mn US\$.....	0.0	40	○◇	6.2	Knowledge impact.....	13.8	113 ○◇			
2.3.4	QS university ranking, average score top 3*.....	0.0	78	○◇	6.2.1	Growth rate of PPP\$ GDP/worker, %.....	(7.7)	110 ○◇			
					6.2.2	New businesses/th pop. 15-64.....	0.8	78			
	<b>Infrastructure</b> .....	<b>26.5</b>	<b>114</b> ○					<b>19.5</b>	<b>99</b>		
3.1	Information & communication technologies (ICTs).....	31.1	108		6.2.3	Computer software spending, % GDP.....	0.1	82			
3.1.1	ICT access*.....	31.6	109	◇	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....	0.2	123 ○◇			
3.1.2	ICT use*.....	15.8	111	◇	6.2.5	High- & medium-high-tech manufactures, %.....	n/a	n/a			
3.1.3	Government's online service*.....	41.3	98		6.3	Knowledge diffusion.....	13.4	104			
3.1.4	E-participation*.....	35.6	105		6.3.1	Intellectual property receipts, % total trade.....	n/a	n/a			
3.2	General infrastructure.....	18.3	122	◇	6.3.2	High-tech net exports, % total trade.....	0.0	121 ○			
3.2.1	Electricity output, kWh/cap.....	172.5	114	◇	6.3.3	ICT services exports, % total trade.....	0.3	112			
3.2.2	Logistics performance*.....	26.1	89		6.3.4	FDI net outflows, % GDP.....	0.3	78			
3.2.3	Gross capital formation, % GDP.....	13.0	119	○◇		<b>Creative outputs</b> .....	<b>19.5</b>	<b>99</b>			
3.3	Ecological sustainability.....	30.0	93		7.1	Intangible assets.....	33.6	97			
3.3.1	GDP/unit of energy use.....	7.2	81		7.1.1	Trademarks by origin/bn PPP\$ GDP <sup>②</sup> .....	19.8	87			
3.3.2	Environmental performance*.....	54.8	83		7.1.2	Industrial designs by origin/bn PPP\$ GDP <sup>②</sup> .....	0.9	72			
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....	0.1	122		7.1.3	ICTs & business model creation <sup>†</sup> .....	58.7	67 ●			
					7.1.4	ICTs & organizational model creation <sup>†</sup> .....	48.2	85			
	<b>Market sophistication</b> .....	<b>41.7</b>	<b>95</b>					<b>10.6</b>	<b>90</b>		
4.1	Credit.....	32.1	81		7.2	Creative goods & services.....	10.6	90			
4.1.1	Ease of getting credit*.....	90.0	6	◆	7.2.1	Cultural & creative services exports, % total trade.....	n/a	n/a			
4.1.2	Domestic credit to private sector, % GDP.....	15.7	115	◇	7.2.2	National feature films/mn pop. 15-69 <sup>②</sup> .....	11.2	13 ●◆			
4.1.3	Microfinance gross loans, % GDP.....	0.1	57		7.2.3	Entertainment & Media market/th pop. 15-69.....	0.7	60			
4.2	Investment.....	34.6	95		7.2.4	Printing & other media, % manufacturing.....	n/a	n/a			
4.2.1	Ease of protecting minority investors*.....	66.7	32	●	7.2.5	Creative goods exports, % total trade <sup>②</sup> .....	0.0	120			
4.2.2	Market capitalization, % GDP.....	9.6	78		7.3	Online creativity.....	0.4	113			
4.2.3	Venture capital deals/bn PPP\$ GDP.....	0.0	73		7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....	0.5	106			
4.3	Trade, competition, & market scale.....	58.5	70	●	7.3.2	Country-code TLDs/th pop. 15-69.....	0.3	102			
4.3.1	Applied tariff rate, weighted mean, %.....	11.3	120	◇	7.3.3	Wikipedia edits/mn pop. 15-69 <sup>②</sup> .....	0.3	112			
4.3.2	Intensity of local competition <sup>†</sup> .....	68.2	67	●	7.3.4	Mobile app creation/bn PPP\$ GDP.....	0.5	83			
4.3.3	Domestic market scale, bn PPP\$.....	1,118.4	22	◆							

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; \* an index; † a survey question.

② indicates that the country'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; see page 75 of this appendix for details.