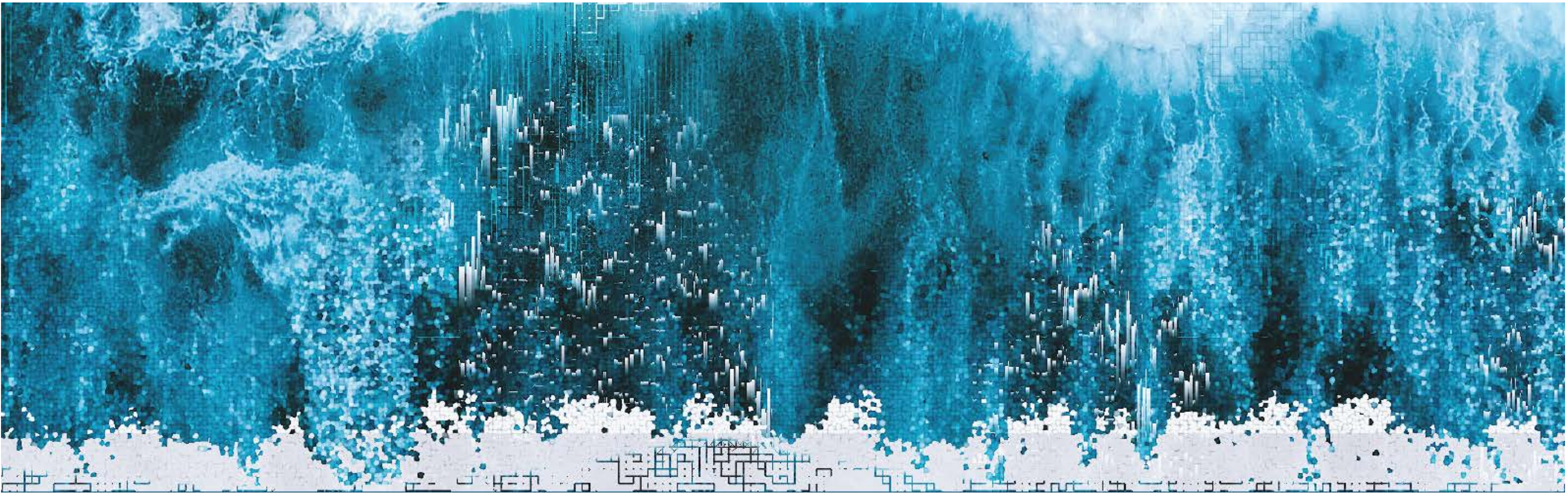


GLOBAL INNOVATION INDEX 2018

Kenya

78th Kenya is ranked 78th in the GII 2018, moving up 2 positions from last year.

The GII indicators are grouped into innovation inputs and outputs. The following table reflects Kenya's rankings over time[1].

Kenya's ranking over time

	GII	Input	Output	Efficiency
2018	78	91	64	41
2017	80	91	70	50
2016	80	97	65	30

- Kenya ranks better in innovation outputs than in innovation inputs.
- It shows stability in its ranking in innovation inputs, placing 91st globally for the second consecutive year.
- This year the country increases in innovation outputs, reaching the 64th spot, up from the 70th in 2017.
- Relative to its GII position (78th), Kenya's Innovation Efficiency Ratio (41st) seems rather strong, showing that the country is quite efficient in translating its innovation inputs into more outputs. This is partly influenced by a higher ranking in innovation outputs (64th) compared to inputs (91st).

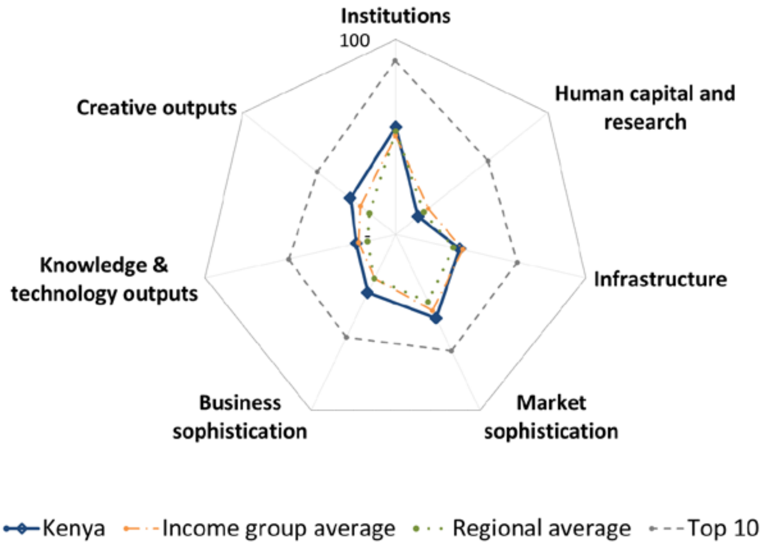
11th Kenya is ranked 11th among the 30 lower-middle-income countries in the GII 2018.

3rd Kenya is ranked 3rd among the 24 countries in Sub-Saharan Africa.

[1] Note that year-on-year comparisons of the GII ranks are imperfect and influenced by changes in the GII model and data availability.

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

Kenya's scores by area



Lower-middle-income countries

Kenya has high scores in 5 of the 7 GII areas – **Institutions, Market Sophistication, Business Sophistication, Knowledge & Technology Outputs,** and **Creative Outputs**, in which it scores above the average of the lower-middle-income group.

Top scores in areas such as *Regulatory environment, Credit, Innovation linkages, Knowledge impact,* and *Intangible assets* are behind these high rankings.

Sub-Saharan Africa region

Compared to other countries in the Sub-Saharan Africa region, Kenya performs above average in 6 out of the 7 GII areas: Institutions, Infrastructure, Market Sophistication, Business Sophistication, Knowledge & Technology Outputs, and Creative Outputs.

Kenya's innovation profile

Strengths

- Most of the comparative strengths for Kenya are accrued among **innovation inputs,** across three of the five input areas of the GII.

- In **Market Sophistication** (61st), Kenya shows strong ranks in the area *Credit* (22nd) and two of its three indicators: *Ease of getting credit* (26th) and *Microfinance gross loans* – which ranks 9th globally. The indicator *Intensity of local competition* (29th) is also a GII strength.

- Comparative GII strengths are also exhibited in **Business Sophistication** (49th), the top-ranked GII area for Kenya. Here strengths are highlighted in the area *Innovation linkages* (9th) as well as in the indicators *University-industry research collaboration* (31st), *High-tech imports* (32nd), and *R&D financed by abroad,* which positions 4th globally.

- Finally, on the input side, in **Institutions** (84th), the indicator *Cost of redundancy dismissal* presents strong performance and is ranked number 1 worldwide.

- On the **innovation output** side, Kenya shows strengths in both the GII areas capturing outputs.

- The indicators *Intellectual property receipts* (29th) and *ICT services exports* (19th) are signaled as GII strengths in **Knowledge & Technology Outputs** (70th).

- In **Creative Outputs** (56th), strong performance is demonstrated in the area *Creative goods & services* (26th) and in the indicator *Printing & other media*, where it ranks 1st worldwide.

Weaknesses

- On the **innovation input** side, GII weaknesses are scattered across the five GII areas.

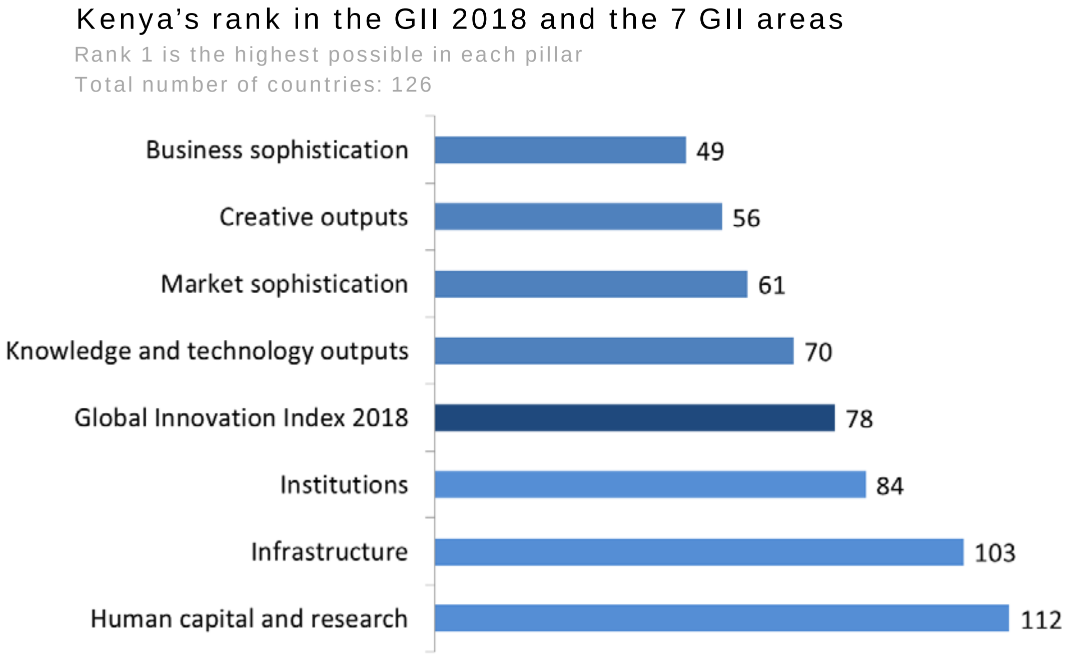
- Several of these weaknesses are in **Human Capital & Research** (112th), which itself is signaled as a GII weakness for Kenya. Here the country performs weakly in three indicators: *Pupil-teacher ratio* (105th), *Tertiary enrolment* (114th), and *Global R&D companies expenditures* (40th).

- Relative weaknesses also appear in **Infrastructure** (103rd) in the area *Ecological sustainability* (117th) as well as in the indicators *Electricity output* (112th) and *GDP per unit of energy use* (104th).

- The last three weak indicators among innovation inputs are: *Political stability & safety* (118th) in **Institutions** (84th); *Applied tariff rate* (115th) in **Market Sophistication** (61st); and *ICT services imports* (119th) in **Business Sophistication** (49th).

- On the **innovation output** side, Kenya performs relatively weakly in two indicators within **Creative Outputs** (56th): *Cultural & creative services exports* (83rd) and *Mobile app creation* (86th).

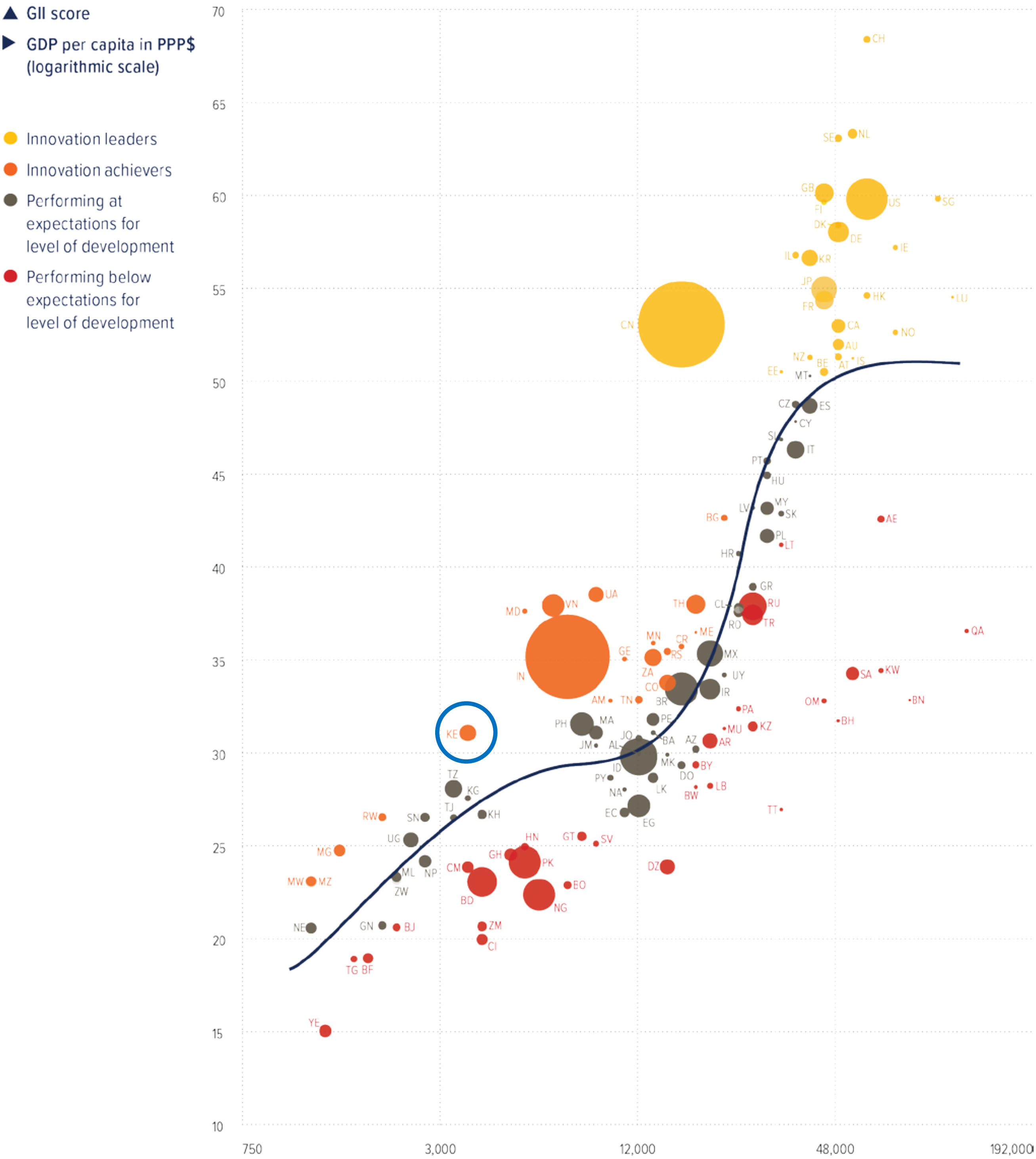
The following figure presents a summary of Kenya's ranks in the 7 GII areas, as well as the overall rank in the GII 2018.



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 that what would be expected based on their income level. Countries below the line are Innovation Under-performers relative to GDP.

Relative to GDP, Kenya performs above 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 Kenya that is not available or that is outdated.

Missing Data

Code	Indicator	Country Year	Model Year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2014	UNESCO Institute for Statistics
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
2.2.3	Tertiary inbound mobility, %	n/a	2016	UNESCO Institute for Statistics
5.1.1	Knowledge-intensive employment, %	n/a	2016	ILO, ILOSTAT
5.1.5	Females employed w/advanced degrees, %	n/a	2016	ILO, ILOSTAT
7.2.2	National feature films/mn pop. 15–69	n/a	2015	UNESCO Institute for Statistics

Outdated Data

Code	Indicator	Country Year	Model Year	Source
2.1.3	School life expectancy, years	2009	2016	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2009	2016	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2009	2016	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2010	2016	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2010	2016	UNESCO Institute for Statistics
4.2.2	Market capitalization, % GDP	2011	2016	World Bank, World Development Indicators
5.1.3	GERD performed by business, % GDP	2010	2016	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	2010	2015	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, %	2010	2015	UNESCO Institute for Statistics
5.3.1	Intellectual property payments, % total trade	2014	2016	WTO, Trade in Commercial Services
5.3.2	High-tech net imports, % total trade	2013	2016	UN COMTRADE
5.3.3	ICT services imports, % total trade	2014	2016	WTO, Trade in Commercial Services
5.3.5	Research talent, % in business enterprise	2010	2016	UNESCO Institute for Statistics
6.2.2	New businesses/th pop. 15–64	2008	2016	World Bank, Doing Business
6.3.1	Intellectual property receipts, % total trade	2014	2016	WTO, Trade in Commercial Services
6.3.2	High-tech net exports, % total trade	2013	2016	UN COMTRADE
6.3.3	ICT services exports, % total trade	2014	2016	WTO, Trade in Commercial Services
7.1.1	Trademarks by origin/bn PPP$ GDP	2015	2016	WIPO, Intellectual Property Statistics
7.2.5	Creative goods exports, % total trade	2013	2016	UN COMTRADE
7.3.3	Wikipedia edits/mn pop. 15–69	2014	2017	Wikimedia Foundation

KENYA

GII 2018 rank
78

Output rank	Input rank	Income	Region	Efficiency ratio	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2017 rank
64	91	Lower-middle	SSF	41	49.7	163.4	3,491.1	80

		Score/Value	Rank	
	Institutions	**55.3**	**84**	
1.1	Political environment	36.2	105	
1.1.1	Political stability & safety*	33.9	118	○
1.1.2	Government effectiveness*	37.4	90	
1.2	Regulatory environment	66.4	65	◆
1.2.1	Regulatory quality*	36.4	90	
1.2.2	Rule of law*	29.4	94	
1.2.3	Cost of redundancy dismissal, salary weeks	8.0	1	● ◆
1.3	Business environment	63.2	87	
1.3.1	Ease of starting a business*	83.2	90	
1.3.2	Ease of resolving insolvency*	43.1	85	
	Human capital & research	**14.6**	**112**	○
2.1	Education	35.2	97	
2.1.1	Expenditure on education, % GDP	5.3	39	
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years ⓓ	10.5	99	
2.1.4	PISA scales in reading, maths & science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary ⓓ	33.4	105	○ ◇
2.2	Tertiary education	2.7	[120]	
2.2.1	Tertiary enrolment, % gross ⓓ	4.0	114	○ ◇
2.2.2	Graduates in science & engineering, %	n/a	n/a	
2.2.3	Tertiary inbound mobility, %	n/a	n/a	
2.3	Research & development (R&D)	6.0	72	
2.3.1	Researchers, FTE/mn pop. ⓓ	225.0	73	
2.3.2	Gross expenditure on R&D, % GDP ⓓ	0.8	45	◆
2.3.3	Global R&D companies, top 3, mn US$	0.0	40	○ ◇
2.3.4	QS university ranking, average score top 3*	3.4	75	
	Infrastructure	**33.5**	**103**	
3.1	Information & communication technologies (ICTs)	40.6	95	
3.1.1	ICT access*	36.3	103	
3.1.2	ICT use*	17.6	107	
3.1.3	Government's online service*	55.8	75	
3.1.4	E-participation*	52.5	82	
3.2	General infrastructure	35.7	74	
3.2.1	Electricity output, kWh/cap	209.6	112	○ ◇
3.2.2	Logistics performance*	58.6	41	◆
3.2.3	Gross capital formation, % GDP	21.4	74	
3.3	Ecological sustainability	24.3	117	○ ◇
3.3.1	GDP/unit of energy use	5.2	104	○ ◇
3.3.2	Environmental performance*	47.3	102	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.4	92	
	Market sophistication	**47.5**	**61**	
4.1	Credit	54.6	22	● ◆
4.1.1	Ease of getting credit*	75.0	26	●
4.1.2	Domestic credit to private sector, % GDP	32.9	95	
4.1.3	Microfinance gross loans, % GDP	4.7	9	● ◆
4.2	Investment	35.6	91	
4.2.1	Ease of protecting minority investors*	58.3	61	
4.2.2	Market capitalization, % GDP ⓓ	30.0	47	
4.2.3	Venture capital deals/bn PPP$ GDP	0.0	33	◆
4.3	Trade, competition, & market scale	52.2	94	
4.3.1	Applied tariff rate, weighted mean, %	10.0	115	○ ◇
4.3.2	Intensity of local competition†	74.5	29	● ◆
4.3.3	Domestic market scale, bn PPP$	163.4	66	

		Score/Value	Rank	
	Business sophistication	**33.3**	**49**	◆
5.1	Knowledge workers	26.4	89	
5.1.1	Knowledge-intensive employment, %	n/a	n/a	
5.1.2	Firms offering formal training, % firms	40.6	33	
5.1.3	GERD performed by business, % GDP ⓓ	0.1	67	
5.1.4	GERD financed by business, % ⓓ	4.3	81	
5.1.5	Females employed w/advanced degrees, %	n/a	n/a	
5.2	Innovation linkages	51.3	9	● ◆
5.2.1	University/industry research collaboration†	54.9	31	● ◆
5.2.2	State of cluster development†	54.1	36	◆
5.2.3	GERD financed by abroad, % ⓓ	47.1	4	● ◆
5.2.4	JV–strategic alliance deals/bn PPP$ GDP	0.0	46	
5.2.5	Patent families 2+ offices/bn PPP$ GDP	0.1	73	
5.3	Knowledge absorption	22.2	93	
5.3.1	Intellectual property payments, % total trade ⓓ	1.0	38	◆
5.3.2	High-tech net imports, % total trade ⓓ	10.8	32	●
5.3.3	ICT services imports, % total trade ⓓ	0.1	119	○ ◇
5.3.4	FDI net inflows, % GDP	1.0	107	
5.3.5	Research talent, % in business enterprise ⓓ	11.4	64	
	Knowledge & technology outputs	**20.7**	**70**	
6.1	Knowledge creation	11.5	63	
6.1.1	Patents by origin/bn PPP$ GDP	0.9	66	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	80	
6.1.3	Utility models by origin/bn PPP$ GDP	0.9	30	
6.1.4	Scientific & technical articles/bn PPP$ GDP	6.8	65	
6.1.5	Citable documents H index	14.2	51	
6.2	Knowledge impact	30.8	86	
6.2.1	Growth rate of PPP$ GDP/worker, %	2.2	34	
6.2.2	New businesses/th pop. 15–64 ⓓ	0.8	75	
6.2.3	Computer software spending, % GDP	0.2	78	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	4.4	64	
6.2.5	High- & medium-high-tech manufactures, %	0.1	74	
6.3	Knowledge diffusion	19.9	65	
6.3.1	Intellectual property receipts, % total trade ⓓ	0.4	29	● ◆
6.3.2	High-tech net exports, % total trade ⓓ	0.6	78	
6.3.3	ICT services exports, % total trade ⓓ	4.3	19	●
6.3.4	FDI net outflows, % GDP	0.2	87	
	Creative outputs	**29.9**	**56**	
7.1	Intangible assets	41.1	68	
7.1.1	Trademarks by origin/bn PPP$ GDP ⓓ	32.8	71	
7.1.2	Industrial designs by origin/bn PPP$ GDP	0.6	81	
7.1.3	ICTs & business model creation†	68.2	38	◆
7.1.4	ICTs & organizational model creation†	59.3	45	◆
7.2	Creative goods & services	36.7	26	● ◆
7.2.1	Cultural & creative services exports, % total trade	0.0	83	○
7.2.2	National feature films/mn pop. 15–69	n/a	n/a	
7.2.3	Entertainment & Media market/th pop. 15–69	2.2	51	◆
7.2.4	Printing & other media, % manufacturing	4.2	1	● ◆
7.2.5	Creative goods exports, % total trade ⓓ	0.3	71	
7.3	Online creativity	0.7	108	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	1.0	93	
7.3.2	Country-code TLDs/th pop. 15–69	0.7	85	
7.3.3	Wikipedia edits/mn pop. 15–69 ⓓ	1.0	103	
7.3.4	Mobile app creation/bn PPP$ GDP	0.3	86	○

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