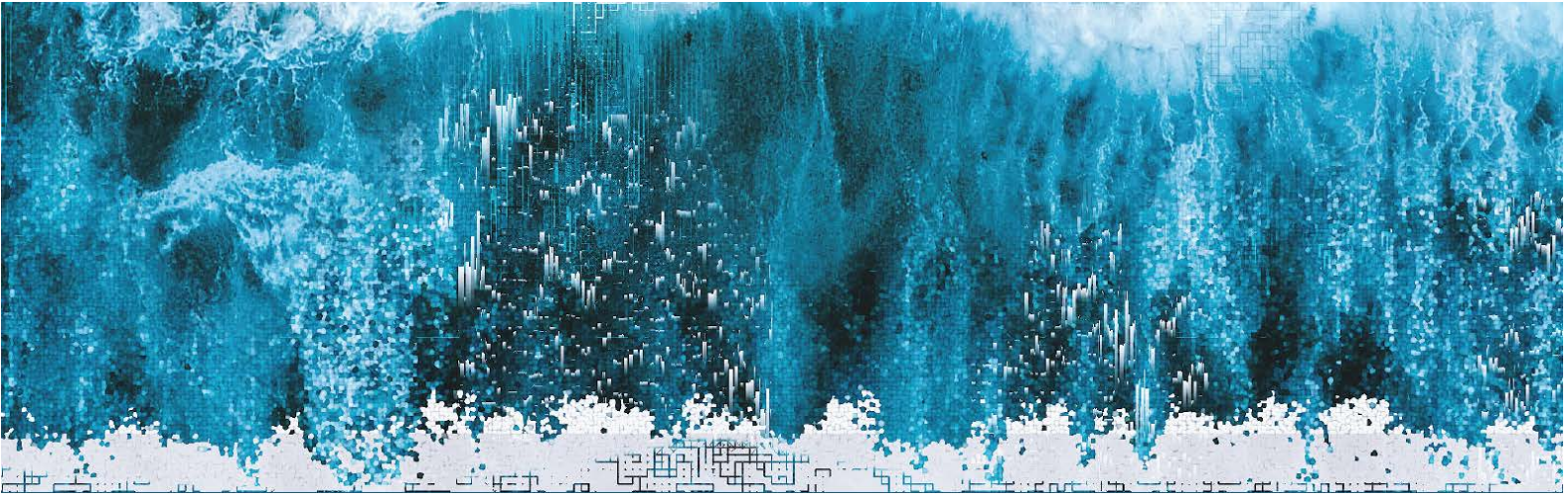


GLOBAL INNOVATION INDEX 2018

Saudi Arabia

61st Saudi Arabia is ranked 61st in the GII 2018, dropping 6 positions from last year.

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

Saudi Arabia ranking over time

	GII	Input	Output	Efficiency
2018	61	46	78	104
2017	55	46	66	96
2016	49	43	54	85

- Saudi Arabia ranks better in innovation inputs than outputs, and the difference between these two ranks has widened over the last two years.
- The country shows stable performance in innovation inputs, ranking 46th as in 2017.
- Saudi Arabia's position in innovation outputs, instead, deteriorates notably, dropping 14 positions from 2017 and 24 from 2016 and ranking 78th this year.
- The Innovation Efficiency Ratio mimics the downward trajectory of innovation outputs. Saudi Arabia positions 104th this year, dropping from the 96th and 85th spots in 2017 and 2016. In this Ratio, Saudi Arabia ranks lower than in the overall GII (61st), showing that the economy could improve its efficiency in translating innovation inputs into outputs. This low rank is partly influenced by a higher ranking in innovation inputs (46th) compared to outputs (78th).

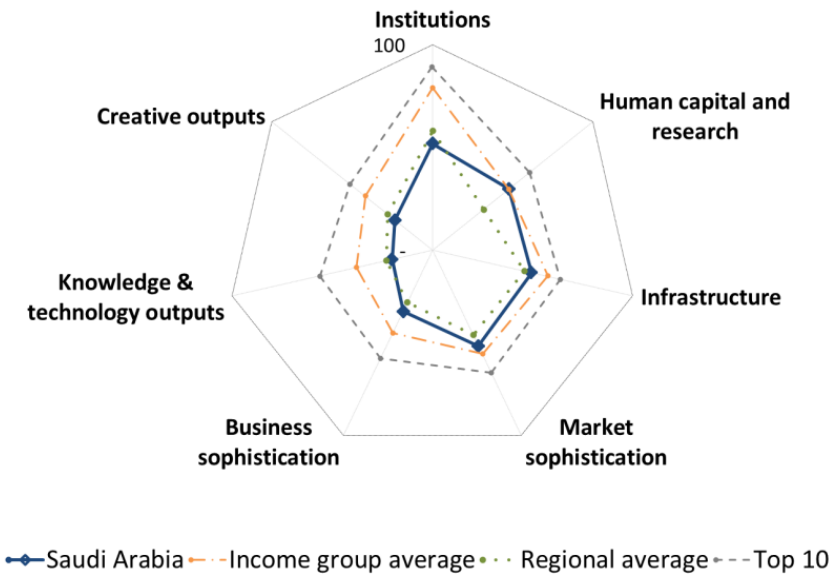
42nd Saudi Arabia is ranked 42nd among the 47 high-income countries in the GII 2018.

8th Saudi Arabia is ranked 8th among the 19 countries in Northern Africa and Western Asia.

[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 Saudi Arabia to other high-income countries and the Northern Africa and Western Asia region

Saudi Arabia's scores by area



High-income countries

Saudi Arabia has high scores in the GII area **Human Capital & Research**, in which it scores above the average of the high-income group.

Top scores in the area *Education* are behind this high ranking.

Northern Africa and Western Asia region

Compared to other countries in the Northern Africa and Western Asia region, Saudi Arabia performs above-average in 4 of the 7 GII areas: Human Capital & Research, Infrastructure, Market Sophistication, and Business Sophistication.

Saudi Arabia's innovation profile

Strengths

- Saudi Arabia exhibits most of its GII strengths in **innovation inputs**, among the following four GII input areas.

- **Human Capital & Research** (24th), the top-ranked GII area for Saudi Arabia, is highlighted as a comparative strength. Here Saudi Arabia shows strong performance in two of its three components – *Education* (14th) and *Research & development (R&D)* (25th). At the indicator level, GII strengths are found in *School life expectancy* (18th), *Tertiary enrolment* (27th), *Global R&D companies expenditures* (23rd), and *Quality of universities* (30th).

- In **Infrastructure** (51st), one of its three components – *General infrastructure* (29th) – and two of its three indicators – *Electricity output* (12th) and *Gross capital formation* (24th) – are marked as strong.

- In **Market Sophistication** (41st), the area *Trade, competition & market scale* (22nd) as well as the indicators *Ease of protecting minority investors* (10th) and *Domestic market scale* (15th) are highlighted as Saudi Arabia's strengths.

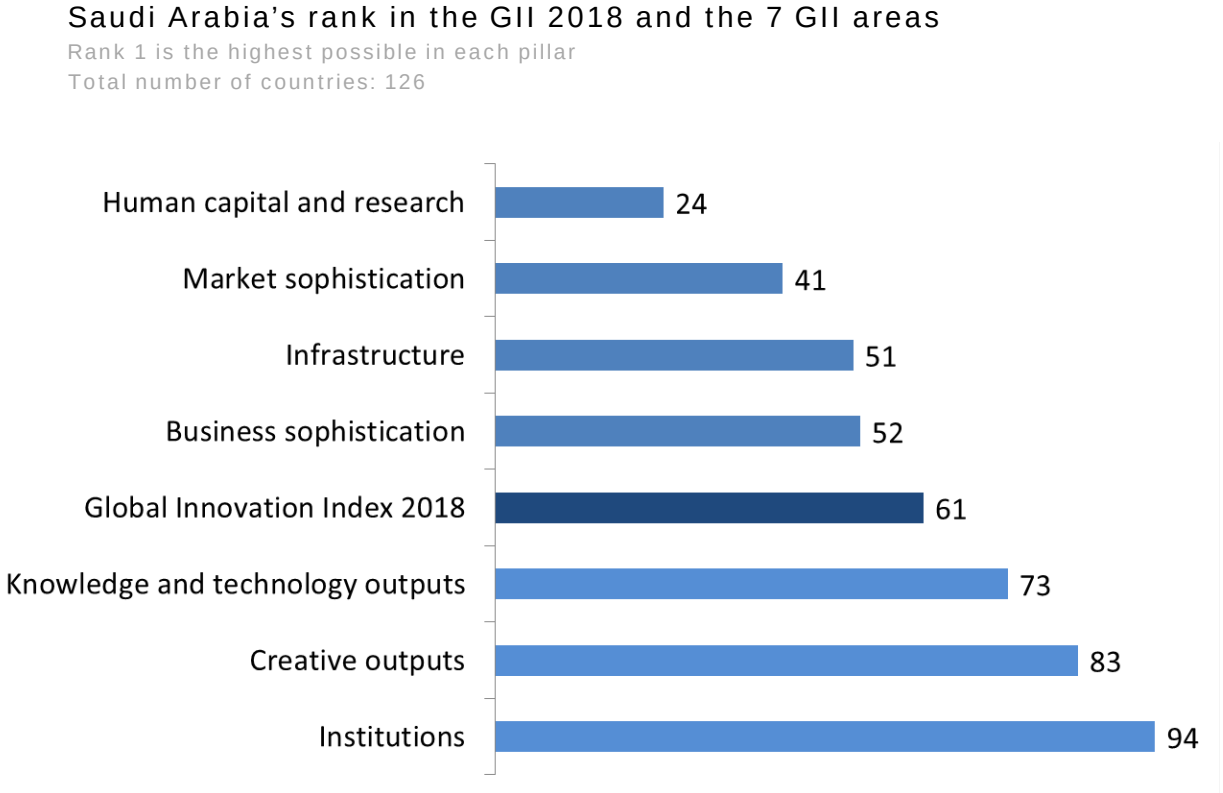
- Finally, on the input side, the indicator *State of cluster development* (21st) is marked as strength in **Business Sophistication** (52nd).

- On the **innovation output** side, Saudi Arabia exhibits strength in only one indicator: *Computer software spending* (30th) in **Knowledge & Technology Outputs** (73rd).

Weaknesses

- The main GII weakness for Saudi Arabia lies in the **Innovation Efficiency Ratio**, where it ranks 104th in the world.
- The other relative weaknesses for Saudi Arabia are scattered across 6 of the 7 GII areas.
- In **Institutions** (94th), the country demonstrates relative weaknesses in the area *Business environment* (126th), as well as both its indicators – *Ease of starting a business* (100th) and *Ease of resolving insolvency* (126th).
- Other GII weaknesses on the **innovation input** side are found in three indicators: *ISO 14001 environmental certificates* (112th) in **Infrastructure** (51st), *Venture capital deals* (72nd) in **Market Sophistication** (41st), and *FDI inflows* (100th) in **Business Sophistication** (52nd).
- On the **innovation output** side, three of the five GII weaknesses are exhibited in **Knowledge & Technology Outputs** (73rd), where Saudi Arabia performs relatively weakly in the indicators *New business density* (88th), *ISO 9001 quality certificates* (98th), and *ICT services exports* (117th).
- In **Creative Outputs** (83rd), two indicators – *Trademarks by origin* (115th) and *Industrial designs by origin* (103rd) – present relatively weak performance for Saudi Arabia.

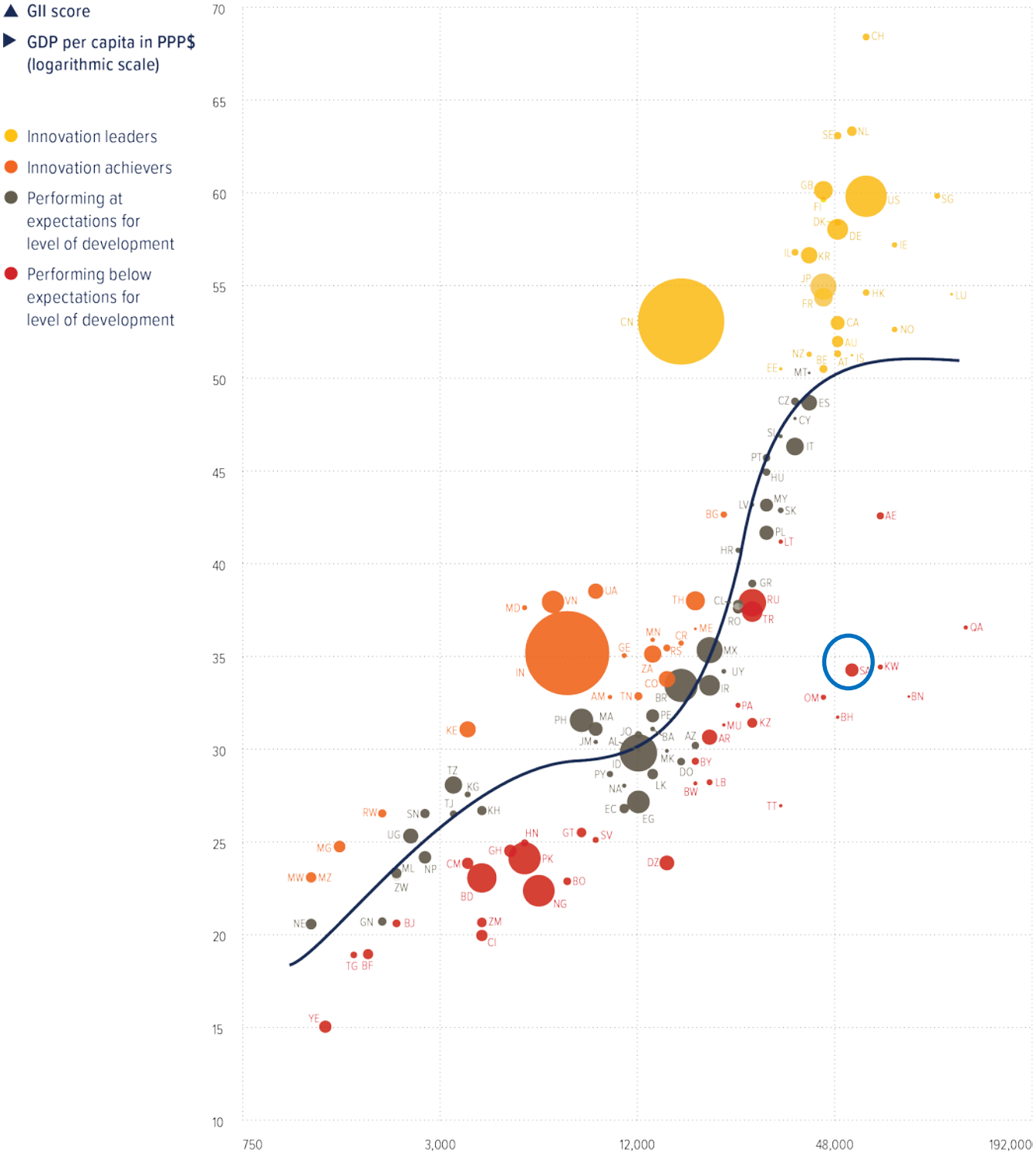
The following figure presents a summary of Saudi Arabia's ranks in the 7 GII areas, as well as the overall rank in the GII 2018.



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, Saudi Arabia performs 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 Saudi Arabia 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
2.3.1	Researchers, FTE/mn pop.	n/a	2016	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	n/a	2016	Microfinance Information Exchange, Mix Market
5.1.2	Firms offering formal training, % firms	n/a	2013	World Bank, Enterprise Surveys
5.1.3	GERD performed by business, % GDP	n/a	2016	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	n/a	2015	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, %	n/a	2015	UNESCO Institute for Statistics
5.3.1	Intellectual property payments, % total trade	n/a	2016	WTO, Trade in Commercial Services
5.3.5	Research talent, % in business enterprise	n/a	2016	UNESCO Institute for Statistics
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2016	WIPO, Intellectual Property 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
7.2.2	National feature films/mn pop. 15–69	n/a	2015	UNESCO Institute for Statistics

Outdated Data

Code	Indicator	Country Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2008	2014	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2014	2016	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2014	2016	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2013	2016	UNESCO Institute for Statistics
4.3.1	Applied tariff rate, weighted mean, %	2015	2016	World Bank, World Development Indicators
5.1.1	Knowledge-intensive employment, %	2015	2016	ILO, ILOSTAT
7.1.1	Trademarks by origin/bn PPP$ GDP	2015	2016	WIPO, Intellectual Property Statistics

SAUDI ARABIA

GII 2018 rank **61**

Output rank	Input rank	Income	Region	Efficiency ratio	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2017 rank
78	46	High	NAWA	104 ○	32.9	1,789.3	54,777.4	55

		Score/Value	Rank	
	Institutions	**51.9**	**94**	◇
1.1	Political environment	51.9	64	◇
1.1.1	Political stability & safety*	53.2	90	◇
1.1.2	Government effectiveness*	51.2	54	◇
1.2	Regulatory environment	63.7	71	◇
1.2.1	Regulatory quality*	46.1	68	◇
1.2.2	Rule of law*	56.8	44	◇
1.2.3	Cost of redundancy dismissal, salary weeks	23.7	94	
1.3	Business environment	40.0	126	○ ◇
1.3.1	Ease of starting a business*	80.0	100	○ ◇
1.3.2	Ease of resolving insolvency*	0.0	126	○ ◇
	Human capital & research	**47.7**	**24**	●
2.1	Education	62.7	14	●
2.1.1	Expenditure on education, % GDP[d]	5.1	46	
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years[d]	16.9	18	●
2.1.4	PISA scales in reading, maths & science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary[d]	11.0	34	
2.2	Tertiary education	38.9	39	
2.2.1	Tertiary enrolment, % gross	66.6	27	●
2.2.2	Graduates in science & engineering, %	23.2	41	
2.2.3	Tertiary inbound mobility, %	4.9	41	
2.3	Research & development (R&D)	41.4	25	●
2.3.1	Researchers, FTE/mn pop.	n/a	n/a	
2.3.2	Gross expenditure on R&D, % GDP[d]	0.8	41	
2.3.3	Global R&D companies, top 3, mn US$	60.5	23	●
2.3.4	QS university ranking, average score top 3*	45.0	30	●
	Infrastructure	**49.4**	**51**	◇
3.1	Information & communication technologies (ICTs)	66.9	44	
3.1.1	ICT access*	72.1	47	◇
3.1.2	ICT use*	56.8	54	◇
3.1.3	Government's online service*	67.4	49	
3.1.4	E-participation*	71.2	39	
3.2	General infrastructure	50.3	29	●
3.2.1	Electricity output, kWh/cap	10,727.2	12	●
3.2.2	Logistics performance*	50.6	51	◇
3.2.3	Gross capital formation, % GDP	28.1	24	● ◆
3.3	Ecological sustainability	31.0	89	◇
3.3.1	GDP/unit of energy use	7.0	84	
3.3.2	Environmental performance*	57.5	75	◇
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.2	112	○ ◇
	Market sophistication	**51.7**	**41**	
4.1	Credit	36.8	65	
4.1.1	Ease of getting credit*	50.0	79	
4.1.2	Domestic credit to private sector, % GDP	58.0	58	
4.1.3	Microfinance gross loans, % GDP	n/a	n/a	
4.2	Investment	45.0	49	
4.2.1	Ease of protecting minority investors*	75.0	10	● ◆
4.2.2	Market capitalization, % GDP	66.0	24	
4.2.3	Venture capital deals/bn PPP$ GDP	0.0	72	○
4.3	Trade, competition, & market scale	73.2	22	●
4.3.1	Applied tariff rate, weighted mean, %[d]	4.5	84	◇
4.3.2	Intensity of local competition†	73.1	38	
4.3.3	Domestic market scale, bn PPP$	1,789.3	15	● ◆

		Score/Value	Rank	
	Business sophistication	**33.0**	**52**	◇
5.1	Knowledge workers	35.2	[64]	
5.1.1	Knowledge-intensive employment, %[d]	27.3	52	◇
5.1.2	Firms offering formal training, % firms	n/a	n/a	
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, %	5.5	80	◇
5.2	Innovation linkages	35.2	45	
5.2.1	University/industry research collaboration†	44.6	45	
5.2.2	State of cluster development†	61.3	21	●
5.2.3	GERD financed by abroad, %	n/a	n/a	
5.2.4	JV–strategic alliance deals/bn PPP$ GDP	0.0	74	
5.2.5	Patent families 2+ offices/bn PPP$ GDP	0.1	51	
5.3	Knowledge absorption	28.7	71	
5.3.1	Intellectual property payments, % total trade	n/a	n/a	
5.3.2	High-tech net imports, % total trade	7.4	72	
5.3.3	ICT services imports, % total trade	1.5	46	
5.3.4	FDI net inflows, % GDP	1.2	100	○
5.3.5	Research talent, % in business enterprise	n/a	n/a	
	Knowledge & technology outputs	**20.2**	**73**	◇
6.1	Knowledge creation	10.1	69	◇
6.1.1	Patents by origin/bn PPP$ GDP	0.7	75	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.2	48	
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific & technical articles/bn PPP$ GDP	6.2	69	◇
6.1.5	Citable documents H index	17.6	40	
6.2	Knowledge impact	34.1	71	◇
6.2.1	Growth rate of PPP$ GDP/worker, %	(0.2)	85	
6.2.2	New businesses/th pop. 15–64	0.4	88	○
6.2.3	Computer software spending, % GDP	0.4	30	●
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	1.3	98	○ ◇
6.2.5	High- & medium-high-tech manufactures, %	0.4	29	
6.3	Knowledge diffusion	16.6	83	◇
6.3.1	Intellectual property receipts, % total trade	n/a	n/a	
6.3.2	High-tech net exports, % total trade	0.6	74	
6.3.3	ICT services exports, % total trade	0.1	117	○
6.3.4	FDI net outflows, % GDP	1.0	51	
	Creative outputs	**23.4**	**83**	◇
7.1	Intangible assets	36.2	89	◇
7.1.1	Trademarks by origin/bn PPP$ GDP[d]	4.4	115	○ ◇
7.1.2	Industrial designs by origin/bn PPP$ GDP	0.2	103	○
7.1.3	ICTs & business model creation†	65.6	46	
7.1.4	ICTs & organizational model creation†	59.9	41	
7.2	Creative goods & services	18.3	73	◇
7.2.1	Cultural & creative services exports, % total trade	n/a	n/a	
7.2.2	National feature films/mn pop. 15–69	n/a	n/a	
7.2.3	Entertainment & Media market/th pop. 15–69	13.3	29	◇
7.2.4	Printing & other media, % manufacturing	1.3	40	
7.2.5	Creative goods exports, % total trade	0.3	72	◇
7.3	Online creativity	2.8	82	◇
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	2.9	65	◇
7.3.2	Country-code TLDs/th pop. 15–69	0.6	87	◇
7.3.3	Wikipedia edits/mn pop. 15–69	6.0	74	◇
7.3.4	Mobile app creation/bn PPP$ GDP	3.6	66	◇

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