



GLOBAL INNOVATION INDEX 2019

SAUDI ARABIA

68th

Saudi Arabia ranks 68th among the 129 economies featured in the GII 2019.

The Global Innovation Index (GII) is a ranking of world economies based on 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 Saudi Arabia over the past three years, noting that data availability and the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Saudi Arabia's ranking in the GII 2019 is between 67 and 77.

Saudi Arabia's Rankings, 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
2019	68	49	85
2018	61	46	78
2017	55	46	66

- Saudi Arabia performs better in Innovation Inputs than Outputs.
- This year Saudi Arabia ranks 49th in Innovation Inputs, worse than last year and compared to 2017.
- As for Innovation Outputs, Saudi Arabia ranks 85th. This position is worse than last year and compared to 2017.

44th

Saudi Arabia ranks 44th among the 50 high-income economies.

9th

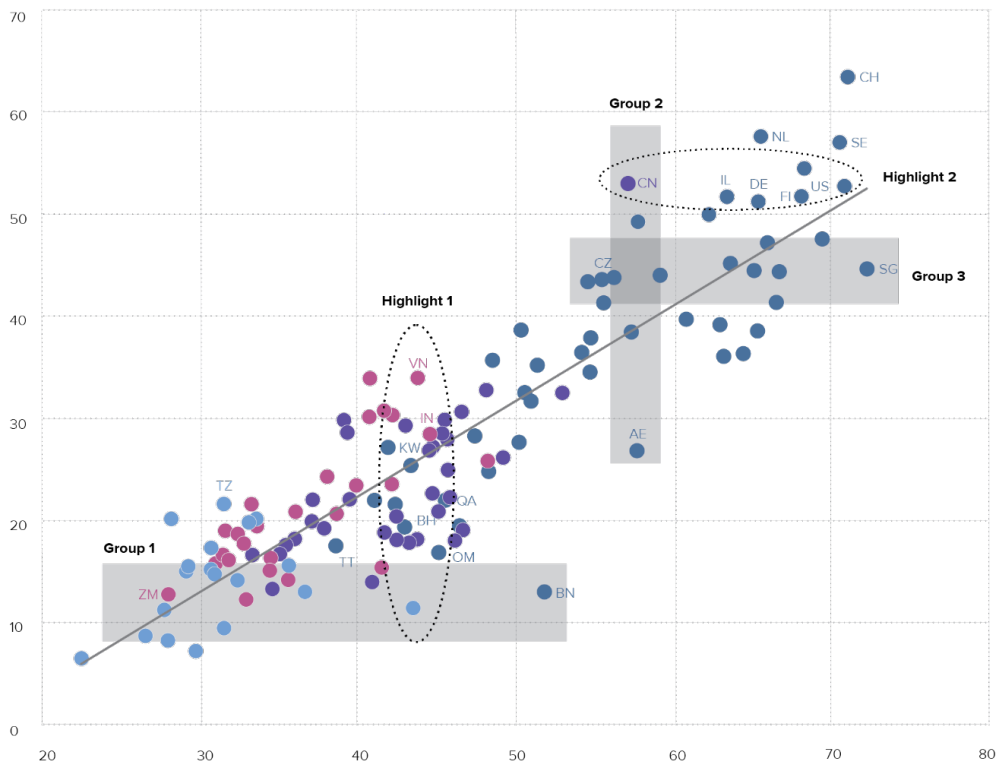
Saudi Arabia ranks 9th among the 19 economies in Northern Africa and Western Asia.

EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

Saudi Arabia produces less innovation outputs relative to its level of innovation investments.

Innovation input/output performance by income group, 2019

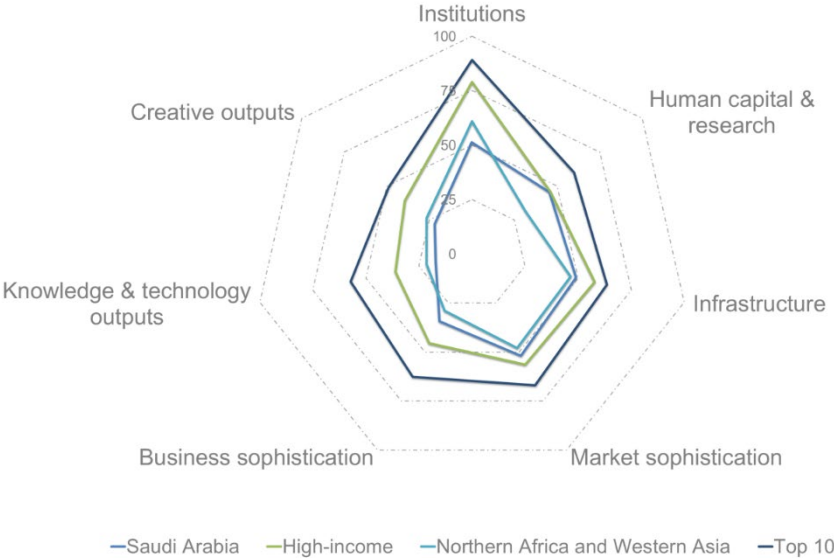


▲ Output score
 ► Input score
 ● High income
 ● Upper-middle income
 ● Lower-middle income
 ● Low income
 — Fitted values

- | | | | |
|-------------------------|-------------------|------------------------|--------------------------------|
| AE United Arab Emirates | CZ Czech Republic | NL Netherlands | TZ United Republic of Tanzania |
| BH Bahrain | DE Germany | OM Oman | US United States of America |
| BN Brunei Darussalam | FI Finland | QA Qatar | VN Viet Nam |
| CH Switzerland | IL Israel | SE Sweden | ZM Zambia |
| CN China | IN India | SG Singapore | |
| | KW Kuwait | TT Trinidad and Tobago | |

BENCHMARKING SAUDI ARABIA TO OTHER HIGH-INCOME ECONOMIES AND THE NORTHERN AFRICA AND WESTERN ASIA REGION

Saudi Arabia’s scores in the seven GII pillars



High-income economies

Saudi Arabia scores below the high-income group average in all the seven GII pillars.

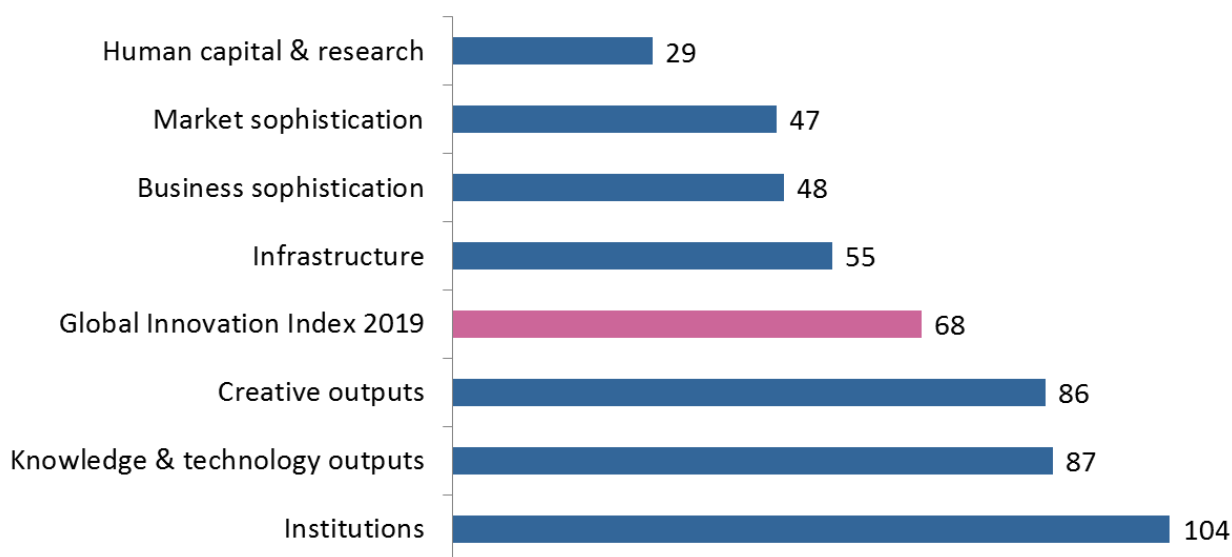
Northern Africa and Western Asia Region

Compared to other economies in Northern Africa and Western Asia, Saudi Arabia performs above average in four out of the seven GII pillars: Human capital & research, Infrastructure, Market sophistication, and Business sophistication.

Top ranks are found in sub-pillars Education, Tertiary education, Research and development (R&D), General infrastructure, Investment, Trade, competition, & market scale, and Innovation linkages where the country ranks in the top 50 worldwide.

OVERVIEW OF SAUDI ARABIA'S RANKINGS IN THE 7 GII AREAS

Saudi Arabia performs the best in Human capital & research and its weakest performance is in Institutions.



*The highest possible ranking in each pillar is 1.

SAUDI ARABIA'S INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of Saudi Arabia's strengths and weaknesses in the GII 2019.

Strengths		
Code	Indicator name	Rank
2	Human capital & research	29
2.1.3	School life expectancy, years	18
2.2.1	Tertiary enrolment, % gross	29
2.3	Research & development (R&D)	29
2.3.3	Global R&D companies, top 3, in mn US\$	26
2.3.4	QS university ranking, average score top 3*	31
3.2.1	Electricity output, kWh/mn pop	12
4.2.1	Ease of protecting minority investors*	6
4.3	Trade, competition, & market scale	23
4.3.2	Intensity of local competition†	29
4.3.3	Domestic market scale, bn PPP\$	16
5.2.2	State of cluster development†	21
6.2.3	Computer software spending, % GDP	28

Weaknesses		
Code	Indicator name	Rank
1.1.1	Political & operational stability*	111
1.3	Business environment	129
1.3.1	Ease of starting a business*	107
1.3.2	Ease of resolving insolvency*	129
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	110
4.2.3	Venture capital deals/bn PPP\$ GDP	74
5.3.4	FDI net inflows, % GDP, 3-year average	107
6.2.1	Growth rate of PPP\$ GDP/worker, %, 3-year average	111
6.2.2	New businesses/th pop. 15–64	88
6.3.3	ICT services exports, % total trade	118
7.1.1	Trademarks by origin/bn PPP\$ GDP	118
7.2.1	Cultural & creative services exports, % total trade	115

STRENGTHS

- GII strengths for Saudi Arabia are found in five of the seven GII pillars.
- The pillar Human capital & research (29) is a notable strength of Saudi Arabia.
- In Human capital & research (29), several of the Saudi Arabia's strengths are found. These are sub-pillar Research & development (R&D) (29) and indicators School life expectancy (18), Tertiary enrolment (29), Global R&D companies (26), and Quality of universities (31).
- Several other GII strengths for Saudi Arabia are in Market sophistication (47). Here the country's strengths are sub-pillar Trade, competition, & market scale (23) as well as three indicators: Ease of protecting minority investors (6), Intensity of local competition (29), and Domestic market scale (16).
- The other GII strengths for Saudi Arabia are indicators:
 - Electricity output (12) In Infrastructure (55);
 - State of cluster development (21) in Business sophistication (48); and
 - indicator Computer software spending (28) in Knowledge & technology outputs (87).

WEAKNESSES

- Saudi Arabia's weaknesses in the GII are found in six of the seven GII pillars.
- Several of these weaknesses are in Institutions (104), where Saudi Arabia's weaknesses are sub-pillar Business environment (129) and three indicators: Political & operational stability (111), Ease of starting a business (107), and Ease of resolving insolvency (129).
- In Infrastructure (55), indicator ISO 14001 environmental certificates (110) is another GII weakness for this country.
- In Market sophistication (47), indicator Venture capital deals (74) is a weakness for Saudi Arabia.
- In Business sophistication (48), only one weakness is identified in indicator FDI inflows (107).
- In Knowledge & technology outputs (87), Saudi Arabia's GII weakness are indicators Labor productivity growth (111), New businesses (88), and ICT services exports (118).
- In Creative outputs (86), GII weaknesses are indicators Trademarks by origin (118) and Cultural & creative services exports (115).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
85	49	High	NAWA	33.6	1,856.9	55,943.9	61
				Score/Value	Rank		
INSTITUTIONS				51.3	104	◇	
1.1	Political environment	53.2	70	◇			
1.1.1	Political and operational stability*.....	54.4	111	◇			
1.1.2	Government effectiveness*.....	52.5	55	◇			
1.2	Regulatory environment	60.7	80	◇			
1.2.1	Regulatory quality*.....	41.9	71	◇			
1.2.2	Rule of law*.....	49.0	56	◇			
1.2.3	Cost of redundancy dismissal, salary weeks.....	23.7	99	◇			
1.3	Business environment	40.0	129	◇			
1.3.1	Ease of starting a business*.....	80.1	107	◇			
1.3.2	Ease of resolving insolvency*.....	0.0	129	◇			
HUMAN CAPITAL & RESEARCH				45.5	29	●	
2.1	Education	63.2	[14]				
2.1.1	Expenditure on education, % GDP.....	5.1	43				
2.1.2	Government funding/pupil, secondary, % GDP/cap.....	n/a	n/a				
2.1.3	School life expectancy, years.....	16.9	18	●			
2.1.4	PISA scales in reading, maths, & science.....	n/a	n/a				
2.1.5	Pupil-teacher ratio, secondary.....	11.0	37				
2.2	Tertiary education	36.1	49				
2.2.1	Tertiary enrolment, % gross.....	68.9	29	●			
2.2.2	Graduates in science & engineering, %.....	21.9	51				
2.2.3	Tertiary inbound mobility, %.....	4.9	42				
2.3	Research & development (R&D)	37.3	29	●			
2.3.1	Researchers, FTE/mn pop.....	n/a	n/a				
2.3.2	Gross expenditure on R&D, % GDP.....	0.8	42				
2.3.3	Global R&D companies, avg. exp. top 3, mn US\$.....	53.4	26	●			
2.3.4	QS university ranking, average score top 3*.....	40.9	31	●			
INFRASTRUCTURE				48.9	55	◇	
3.1	Information & communication technologies (ICTs)	71.7	53	◇			
3.1.1	ICT access*.....	74.8	44				
3.1.2	ICT use*.....	61.6	54	◇			
3.1.3	Government's online service*.....	79.2	48				
3.1.4	E-participation*.....	71.4	65	◇			
3.2	General infrastructure	43.2	37				
3.2.1	Electricity output, kWh/mn pop.....	10,681.8	12	●			
3.2.2	Logistics performance*.....	44.3	54	◇			
3.2.3	Gross capital formation, % GDP.....	26.6	35				
3.3	Ecological sustainability	31.9	86	◇			
3.3.1	GDP/unit of energy use.....	7.6	83				
3.3.2	Environmental performance*.....	57.5	75	◇			
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....	0.2	110	◇			
MARKET SOPHISTICATION				51.9	47		
4.1	Credit	34.7	68	◇			
4.1.1	Ease of getting credit*.....	45.0	94				
4.1.2	Domestic credit to private sector, % GDP.....	54.1	60				
4.1.3	Microfinance gross loans, % GDP.....	n/a	n/a				
4.2	Investment	47.0	47				
4.2.1	Ease of protecting minority investors*.....	80.0	6	◆			
4.2.2	Market capitalization, % GDP.....	66.6	23				
4.2.3	Venture capital deals/bn PPP\$ GDP.....	0.0	74	○			
4.3	Trade, competition, & market scale	74.0	23	●			
4.3.1	Applied tariff rate, weighted avg., %.....	4.9	84	◇			
4.3.2	Intensity of local competition*.....	74.8	29	●			
4.3.3	Domestic market scale, bn PPP\$.....	1,856.9	16	◆			
BUSINESS SOPHISTICATION				34.3	[48]		
5.1	Knowledge workers	37.3	[63]				
5.1.1	Knowledge-intensive employment, %.....	27.3	51	◇			
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	88	◇			
5.2	Innovation linkages	30.3	45				
5.2.1	University/industry research collaboration*.....	48.0	43				
5.2.2	State of cluster development*.....	62.1	21	●			
5.2.3	GERD financed by abroad, %.....	n/a	n/a				
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....	0.0	72				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....	0.1	53				
5.3	Knowledge absorption	35.4	[55]				
5.3.1	Intellectual property payments, % total trade.....	n/a	n/a				
5.3.2	High-tech imports, % total trade.....	7.6	62				
5.3.3	ICT services imports, % total trade.....	1.4	53				
5.3.4	FDI net inflows, % GDP.....	0.9	107	○			
5.3.5	Research talent, % in business enterprise.....	n/a	n/a				
KNOWLEDGE & TECHNOLOGY OUTPUTS				17.0	87	◇	
6.1	Knowledge creation	12.8	63				
6.1.1	Patents by origin/bn PPP\$ GDP.....	0.7	73				
6.1.2	PCT patents by origin/bn PPP\$ GDP.....	0.4	43				
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	67	◇			
6.1.5	Citable documents H-index.....	18.7	39				
6.2	Knowledge impact	26.5	104	◇			
6.2.1	Growth rate of PPP\$ GDP/worker, %.....	-4.0	111	○			
6.2.2	New businesses/th pop. 15-64.....	0.4	88	○			
6.2.3	Computer software spending, % GDP.....	0.4	28	●			
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....	1.3	103	◇			
6.2.5	High- & medium-high-tech manufactures, %.....	0.4	31				
6.3	Knowledge diffusion	11.8	93	◇			
6.3.1	Intellectual property receipts, % total trade.....	n/a	n/a				
6.3.2	High-tech net exports, % total trade.....	0.6	75	◇			
6.3.3	ICT services exports, % total trade.....	0.2	118	○			
6.3.4	FDI net outflows, % GDP.....	1.0	54				
CREATIVE OUTPUTS				21.9	86	◇	
7.1	Intangible assets	36.9	84	◇			
7.1.1	Trademarks by origin/bn PPP\$ GDP.....	4.3	118	○			
7.1.2	Industrial designs by origin/bn PPP\$ GDP.....	0.3	96				
7.1.3	ICTs & business model creation*.....	66.5	45				
7.1.4	ICTs & organizational model creation*.....	61.5	40				
7.2	Creative goods & services	11.7	78	◇			
7.2.1	Cultural & creative services exports, % total trade.....	0.0	115	○			
7.2.2	National feature films/mn pop. 15-69.....	n/a	n/a				
7.2.3	Entertainment & Media market/th pop. 15-69.....	13.9	30	◇			
7.2.4	Printing & other media, % manufacturing.....	1.3	39				
7.2.5	Creative goods exports, % total trade.....	0.4	66				
7.3	Online creativity	2.0	84	◇			
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....	2.8	67	◇			
7.3.2	Country-code TLDs/th pop. 15-69.....	0.6	90	◇			
7.3.3	Wikipedia edits/mn pop. 15-69.....	6.0	74	◇			
7.3.4	Mobile app creation/bn PPP\$ GDP.....	0.3	77				

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 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.

DATA AVAILABILITY

The following tables list data that are missing or are outdated for Saudi Arabia.

Missing data

Code	Indicator name	Country year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2015	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths & science	n/a	2015	OECD Programme for International Student Assessment (PISA)
2.3.1	Researchers, FTE/mn pop.	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.3	Microfinance gross loans, % GDP	n/a	2017	Microfinance Information Exchange
5.1.2	Firms offering formal training, % firms	n/a	2013	World Bank
5.1.3	GERD performed by business, % GDP	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2016	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, %	n/a	2016	UNESCO Institute for Statistics
5.3.1	Intellectual property payments, % total trade	n/a	2017	World Trade Organization
5.3.5	Research talent, % in business enterprise	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2017	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2017	World Trade Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics

Outdated data

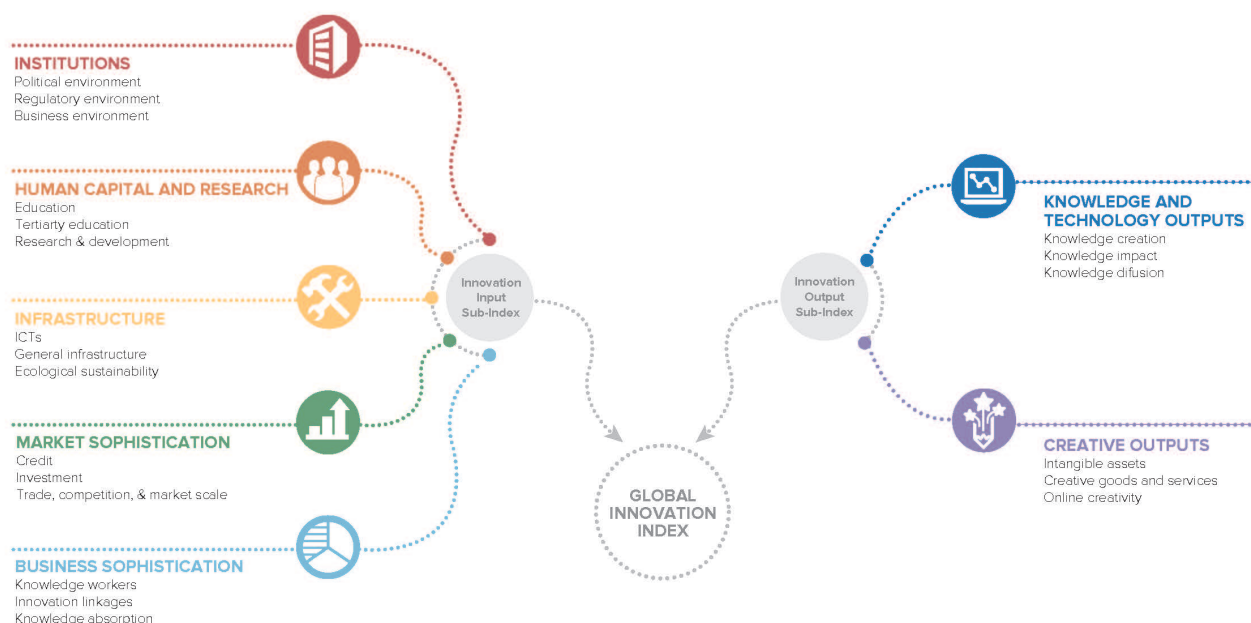
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2008	2015	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2014	2016	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2014	2017	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2013	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.1	Knowledge-intensive employment, %	2015	2017	Source: International Labour Organization
5.1.5	Females employed w/advanced degrees, %	2016	2017	International Labour Organization
5.3.2	High-tech imports, % total trade	2016	2017	United Nations, COMTRADE
6.3.2	High-tech net exports, % total trade	2016	2017	United Nations, COMTRADE
7.1.1	Trademarks by origin/bn PPP\$ GDP	2015	2017	World Intellectual Property Organization
7.2.1	Cultural & creative services exports, % total trade	2016	2017	World Trade Organization
7.2.5	Creative goods exports, % total trade	2016	2017	United Nations, COMTRADE

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2019, the GII presents its 12th edition devoted to the theme **Creating Healthy Lives—The Future of Medical Innovation**.

Recognizing that innovation is a key driver of economic development, the GII aims to provide a rich innovation ranking and 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 countries that incorporate the GII into their innovation agendas.

Framework of the Global Innovation Index 2019



The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that includes 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 containing three sub-pillars.

