

## SAUDI ARABIA

### 66th

Saudi Arabia ranks 66th among the 131 economies featured in the GII 2020.

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 Saudi Arabia 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 Saudi Arabia in the GII 2020 is between ranks 64 and 75.

Rankings of Saudi Arabia (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	66	50	77
2019	68	49	85
2018	61	46	78

- Saudi Arabia performs better in innovation inputs than innovation outputs in 2020.
- This year Saudi Arabia ranks 50th in innovation inputs, lower than last year and lower compared to 2018.
- As for innovation outputs, Saudi Arabia ranks 77th. This position is higher than last year and higher compared to 2018.

### 41st

Saudi Arabia ranks 41st among the 49 high-income group economies.

### 8th

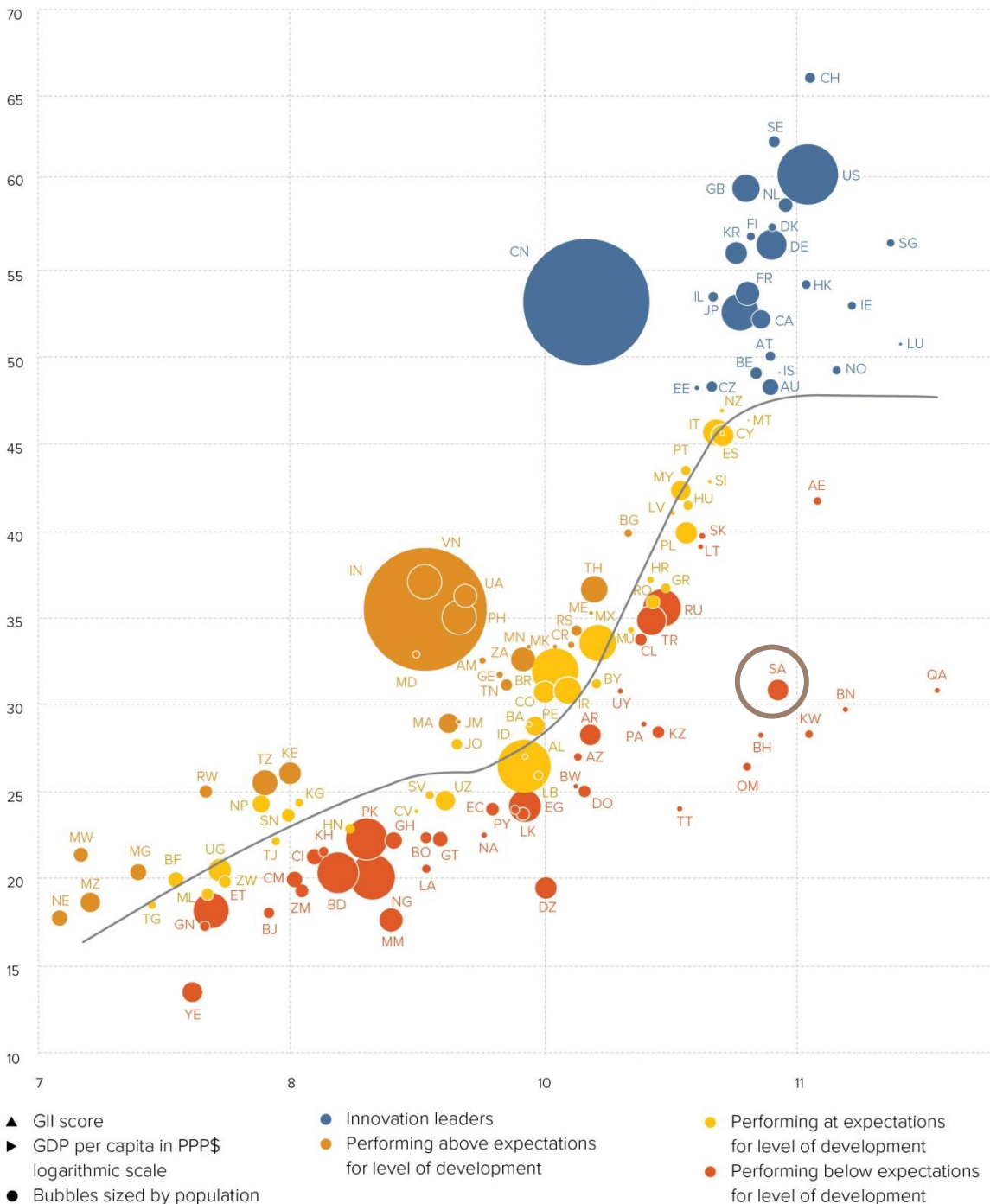
Saudi Arabia ranks 8th among the 19 economies in Northern Africa and Western Asia.

## 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, Saudi Arabia's performance is below expectations for its level of development.

### The positive relationship between innovation and development

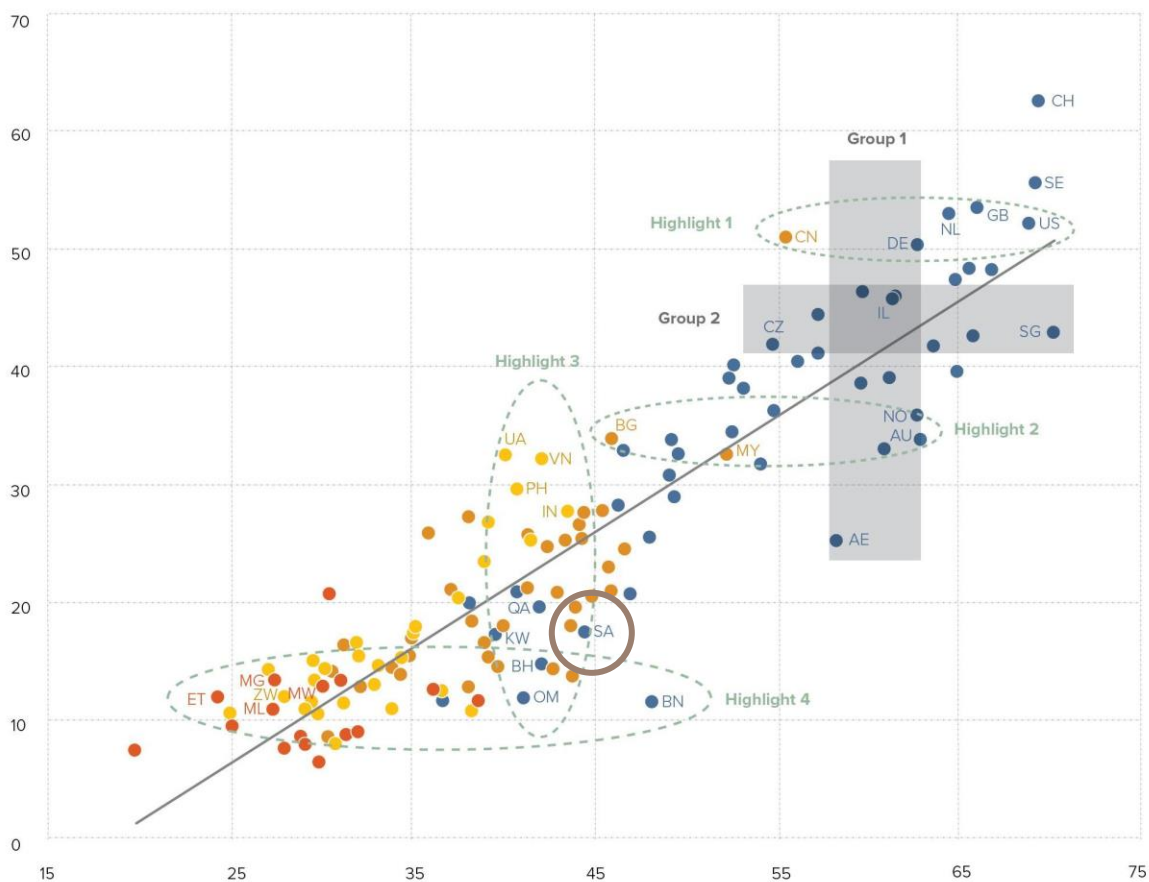


## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

**Innovation input to output performance, 2020**

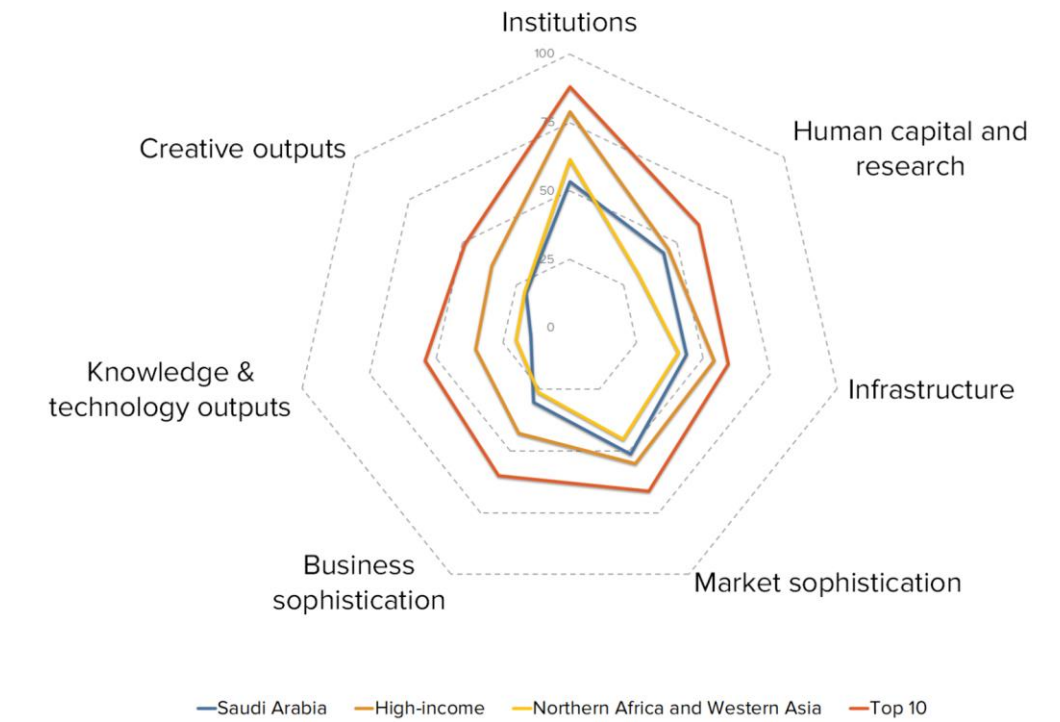


▲ Output score      ● High income group      ● Lower middle-income group      — Fitted values  
 ► Input score      ● Upper middle-income group      ● Low income group

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

# BENCHMARKING SAUDI ARABIA AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND NORTHERN AFRICA AND WESTERN ASIA

## Saudi Arabia's scores in the seven GII pillars



### High-income group economies

Saudi Arabia scores below average for its income group in all pillars.

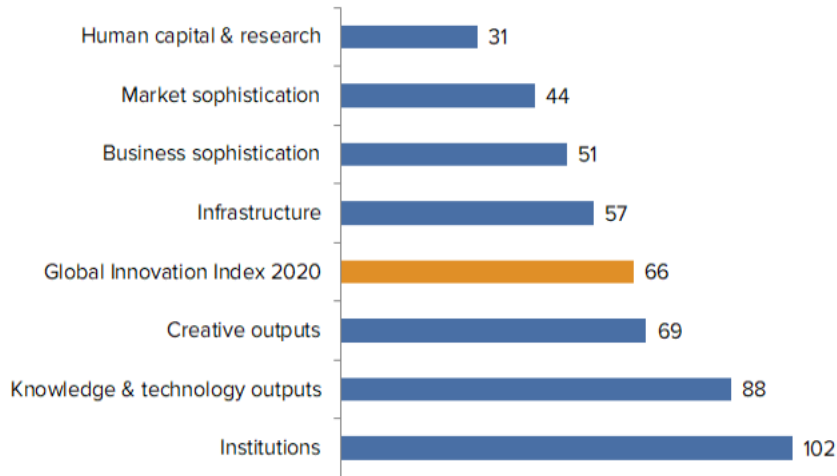
### Northern Africa and Western Asia

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; and
- below average in three out of the seven GII pillars: Institutions, Knowledge & technology outputs and Creative outputs.

## OVERVIEW OF SAUDI ARABIA RANKINGS IN THE SEVEN GII AREAS

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



\*The highest possible ranking in each pillar is 1.

## INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Saudi Arabia in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2	Human capital & research	31	1.1.1	Political and operational stability*	120
2.3	Research & development (R&D)	27	1.3	Business environment	129
2.3.3	Global R&D companies, top 3, mn US\$	22	1.3.2	Ease of resolving insolvency*	129
2.3.4	QS university ranking, average score top 3*	31	2.1.4	PISA scales in reading, maths, & science	71
3.1.1	ICT access*	31	3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	113
3.1.2	ICT use*	29	5.3.4	FDI net inflows, % GDP	120
3.2.1	Electricity output, GWh/mn pop	12	6.2.1	Growth rate of PPP\$ GDP/worker, %	117
4.2.1	Ease of protecting minority investors*	3	6.3	Knowledge diffusion	119
4.3	Trade, competition, and market scale	26	6.3.3	ICT services exports, % total trade	119
4.3.2	Intensity of local competition†	29	7.1.1	Trademarks by origin/bn PPP\$ GDP	111
4.3.3	Domestic market scale, bn PPP\$	17	7.1.3	Industrial designs by origin/bn PPP\$ GDP	102
5.2.2	State of cluster development†	13	7.2.1	Cultural & creative services exports, % total trade	106
6.2.3	Computer software spending, % GDP	29			
7.1.2	Global brand value, top 5000, % GDP	18			

## **STRENGTHS**

GII strengths for Saudi Arabia are found in six of the seven GII pillars.

- Human capital & research (31): shows strengths in the sub-pillar Research & development (27) and in the indicators Global R&D companies (22) and QS university ranking (31).
- Infrastructure (57): demonstrates strengths in the indicators ICT access (31), ICT use (29) and Electricity output (12).
- Market sophistication (44): displays strengths in the sub-pillar Trade, competition, and market scale (26) and in the indicators Ease of protecting minority investors (3), Intensity of local competition (29) and Domestic market scale (17).
- Business sophistication (51): exhibits strengths in the indicator State of cluster development (13).
- Knowledge & technology outputs (88): reveals strengths in the indicator Computer software spending (29).
- Creative outputs (69): shows strengths in the indicator Global brand value (18).

## **WEAKNESSES**

GII weaknesses for Saudi Arabia are found in six of the seven GII pillars.

- Institutions (102): exhibits weaknesses in the sub-pillar Business environment (129) and in the indicators Political and operational stability (120) and Ease of resolving insolvency (129).
- Human capital & research (31): shows weaknesses in the indicator PISA scales in reading, maths, & science (71).
- Infrastructure (57): displays weaknesses in the indicator ISO 14001 environmental certificates (113).
- Business sophistication (51): demonstrates weaknesses in the indicator FDI net inflows (120).
- Knowledge & technology outputs (88): reveals weaknesses in the sub-pillar Knowledge diffusion (119) and in the indicators Growth rate of PPP\$ GDP/worker (117) and ICT services exports (119).
- Creative outputs (69): shows weaknesses in the indicators Trademarks by origin (111), Industrial designs by origin (102) and Cultural & creative services exports (106).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
77	50	High	NAWA	34.3	1,898.5	48,631.5	68
		Score/Value	Rank			Score/Value	Rank
<b>INSTITUTIONS</b>		<b>53.3</b>	<b>102</b>	<b>BUSINESS SOPHISTICATION</b>		<b>30.2</b>	<b>[51]</b>
<b>1.1</b>	<b>Political environment</b>	<b>56.1</b>	<b>70</b>	<b>5.1</b>	<b>Knowledge workers</b>	<b>34.5</b>	<b>[58]</b>
1.1.1	Political and operational stability*	53.6	120	5.1.1	Knowledge-intensive employment, %	27.3	53
1.1.2	Government effectiveness*	57.4	53	5.1.2	Firms offering formal training, %	n/a	n/a
<b>1.2</b>	<b>Regulatory environment</b>	<b>57.2</b>	<b>86</b>	5.1.3	GERD performed by business, % GDP	n/a	n/a
1.2.1	Regulatory quality*	40.6	73	5.1.4	GERD financed by business, %	n/a	n/a
1.2.2	Rule of law*	50.4	56	5.1.5	Females employed w/advanced degrees, %	5.5	86
1.2.3	Cost of redundancy dismissal, salary weeks	23.7	101	<b>5.2</b>	<b>Innovation linkages</b>	<b>28.4</b>	<b>36</b>
<b>1.3</b>	<b>Business environment</b>	<b>46.6</b>	<b>129</b>	5.2.1	University/industry research collaboration†	52.8	35
1.3.1	Ease of starting a business*	93.1	36	5.2.2	State of cluster development†	66.1	13
1.3.2	Ease of resolving insolvency*	0.0	129	5.2.3	GERD financed by abroad, % GDP	n/a	n/a
				5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.0	84
				5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.1	54
<b>HUMAN CAPITAL &amp; RESEARCH</b>		<b>43.9</b>	<b>31</b>	<b>5.3</b>	<b>Knowledge absorption</b>	<b>27.8</b>	<b>[69]</b>
<b>2.1</b>	<b>Education</b>	<b>56.6</b>	<b>[26]</b>	5.3.1	Intellectual property payments, % total trade	n/a	n/a
2.1.1	Expenditure on education, % GDP	n/a	n/a	5.3.2	High-tech imports, % total trade	6.3	90
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	5.3.3	ICT services imports, % total trade	0.9	80
2.1.3	School life expectancy, years	15.7	38	5.3.4	FDI net inflows, % GDP	0.6	120
2.1.4	PISA scales in reading, maths, & science	386.2	71	5.3.5	Research talent, % in business enterprise	n/a	n/a
2.1.5	Pupil-teacher ratio, secondary	11.5	51	<b>5.1</b>	<b>Knowledge creation</b>	<b>14.9</b>	<b>64</b>
<b>2.2</b>	<b>Tertiary education</b>	<b>36.4</b>	<b>57</b>	6.1.1	Patents by origin/bn PPP\$ GDP	0.9	67
2.2.1	Tertiary enrolment, % gross	68.0	32	6.1.2	PCT patents by origin/bn PPP\$ GDP	0.3	42
2.2.2	Graduates in science & engineering, %	21.1	64	6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.2.3	Tertiary inbound mobility, %	4.6	50	6.1.4	Scientific & technical articles/bn PPP\$ GDP	7.8	62
<b>2.3</b>	<b>Research &amp; development (R&amp;D)</b>	<b>38.8</b>	<b>27</b>	6.1.5	Citable documents H-index	21.0	39
2.3.1	Researchers, FTE/mn pop	n/a	n/a	<b>6.2</b>	<b>Knowledge impact</b>	<b>18.3</b>	<b>87</b>
2.3.2	Gross expenditure on R&D, % GDP	0.8	46	6.2.1	Growth rate of PPP\$ GDP/worker, %	-3.3	117
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	58.8	22	6.2.2	New businesses/th pop. 15-64	0.5	99
2.3.4	QS university ranking, average score top 3*	41.5	31	6.2.3	Computer software spending, % GDP	0.0	29
				6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	1.0	109
				6.2.5	High- and medium-high-tech manufacturing, %	34.1	33
<b>INFRASTRUCTURE</b>		<b>43.7</b>	<b>57</b>	<b>6.3</b>	<b>Knowledge diffusion</b>	<b>10.6</b>	<b>119</b>
<b>3.1</b>	<b>Information &amp; communication technologies (ICTs)</b>	<b>76.4</b>	<b>41</b>	6.3.1	Intellectual property receipts, % total trade	n/a	n/a
3.1.1	ICT access*	79.5	31	6.3.2	High-tech net exports, % total trade	0.1	109
3.1.2	ICT use*	75.7	29	6.3.3	ICT services exports, % total trade	0.2	119
3.1.3	Government's online service*	79.2	48	6.3.4	FDI net outflows, % GDP	1.8	40
3.1.4	E-participation*	71.4	66	<b>7.1</b>	<b>Intangible assets</b>	<b>30.2</b>	<b>51</b>
<b>3.2</b>	<b>General infrastructure</b>	<b>32.9</b>	<b>39</b>	7.1.1	Trademarks by origin/bn PPP\$ GDP	10.0	111
3.2.1	Electricity output, kWh/mn pop	10,560.2	12	7.1.2	Global brand value, top 5,000, % GDP	111.8	18
3.2.2	Logistics performance*	44.2	54	7.1.3	Industrial designs by origin/bn PPP\$ GDP	0.2	102
3.2.3	Gross capital formation, % GDP	24.9	53	7.1.4	ICTs & organizational model creation†	61.5	40
<b>3.3</b>	<b>Ecological sustainability</b>	<b>21.7</b>	<b>90</b>	<b>7.2</b>	<b>Creative goods and services</b>	<b>8.3</b>	<b>86</b>
3.3.1	GDP/unit of energy use	7.5	84	7.2.1	Cultural & creative services exports, % total trade	0.0	106
3.3.2	Environmental performance*	44.0	79	7.2.2	National feature films/mn pop. 15-69	n/a	n/a
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	113	7.2.3	Entertainment & Media market/th pop. 15-69	15.4	30
				7.2.4	Printing and other media, % manufacturing	1.2	37
				7.2.5	Creative goods exports, % total trade	0.2	82
<b>MARKET SOPHISTICATION</b>		<b>51.3</b>	<b>44</b>	<b>7.3</b>	<b>Online creativity</b>	<b>12.1</b>	<b>75</b>
<b>4.1</b>	<b>Credit</b>	<b>41.3</b>	<b>67</b>	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	2.7	69
4.1.1	Ease of getting credit*	60.0	74	7.3.2	Country-code TLDs/th pop. 15-69	0.8	93
4.1.2	Domestic credit to private sector, % GDP	54.0	63	7.3.3	Wikipedia edits/mn pop. 15-69	47.3	65
4.1.3	Microfinance gross loans, % GDP	n/a	n/a	7.3.4	Mobile app creation/bn PPP\$ GDP	0.3	77
<b>4.2</b>	<b>Investment</b>	<b>39.6</b>	<b>62</b>				
4.2.1	Ease of protecting minority investors*	86.0	3				
4.2.2	Market capitalization, % GDP	66.1	22				
4.2.3	Venture capital deals/bn PPP\$ GDP	0.0	56				
<b>4.3</b>	<b>Trade, competition, and market scale</b>	<b>73.1</b>	<b>26</b>				
4.3.1	Applied tariff rate, weighted avg., %	4.9	89				
4.3.2	Intensity of local competition†	74.8	29				
4.3.3	Domestic market scale, bn PPP\$	1,898.5	17				

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 either missing or outdated for Saudi Arabia.

### Missing data

Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	n/a	2018	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2016	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.2	Firms offering formal training, %	n/a	2018	World Bank
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2017	UNESCO Institute for Statistics
5.3.1	Intellectual property payments, % total trade	n/a	2018	World Trade Organization
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2018	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
2.3.2	Gross expenditure on R&D, % GDP	2013	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.1.2	Domestic credit to private sector, % GDP	2017	2018	International Monetary Fund
4.3.1	Applied tariff rate, weighted avg., %	2017	2018	World Bank
5.1.1	Knowledge-intensive employment, %	2015	2018	International Labour Organization
5.1.5	Females employed w/advanced degrees, %	2016	2018	International Labour Organization

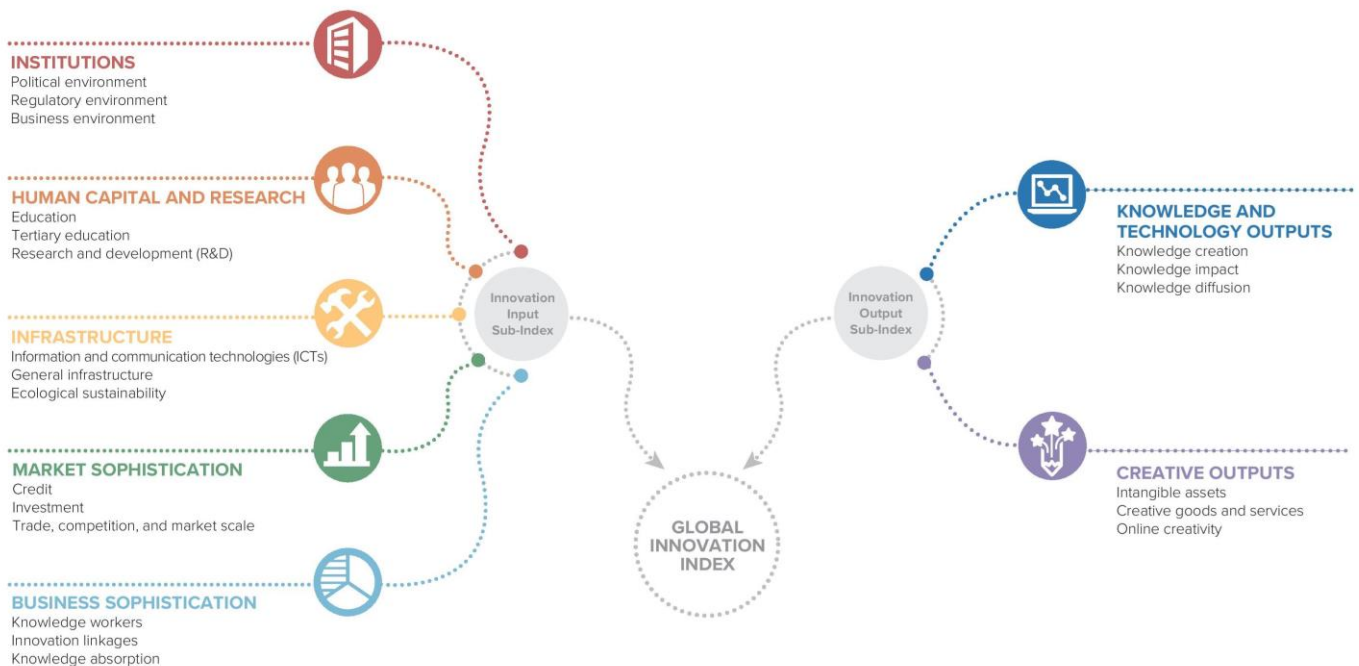


## ABOUT THE GLOBAL INNOVATION INDEX

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 2020, the GII presents its 13<sup>th</sup> edition devoted to the theme *Who Will Finance Innovation?*

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.

### Framework of the Global Innovation Index 2020



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.

