



# Global Innovation Index 2021



## SAUDI ARABIA

**66th**

Saudi Arabia ranks 66th among the 132 economies featured in the GII 2021.

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 2021 is between ranks 64 and 69.

### Rankings for Saudi Arabia (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	66	59	72
2020	66	50	77
2019	68	49	85

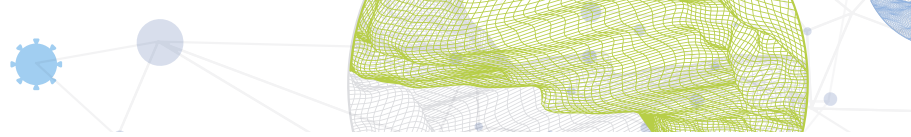
- Saudi Arabia performs better in innovation inputs than innovation outputs in 2021.
- This year Saudi Arabia ranks 59th in innovation inputs, lower than both 2020 and 2019.
- As for innovation outputs, Saudi Arabia ranks 72nd. This position is higher than both 2020 and 2019.

**44th**

Saudi Arabia ranks 44th among the 51 high-income group economies.

**6th**

Saudi Arabia ranks 6th among the 19 economies in Northern Africa and Western Asia.

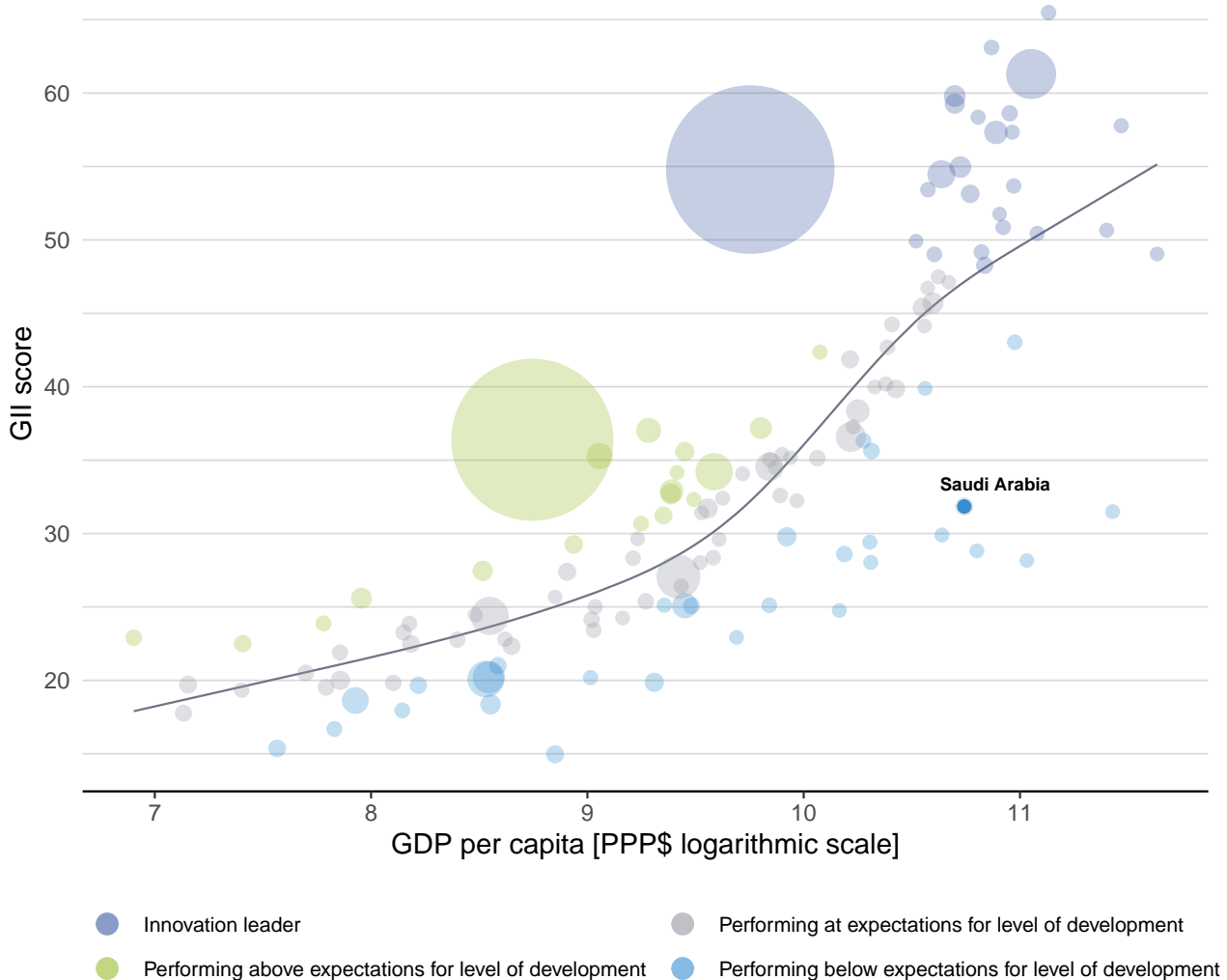


## EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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



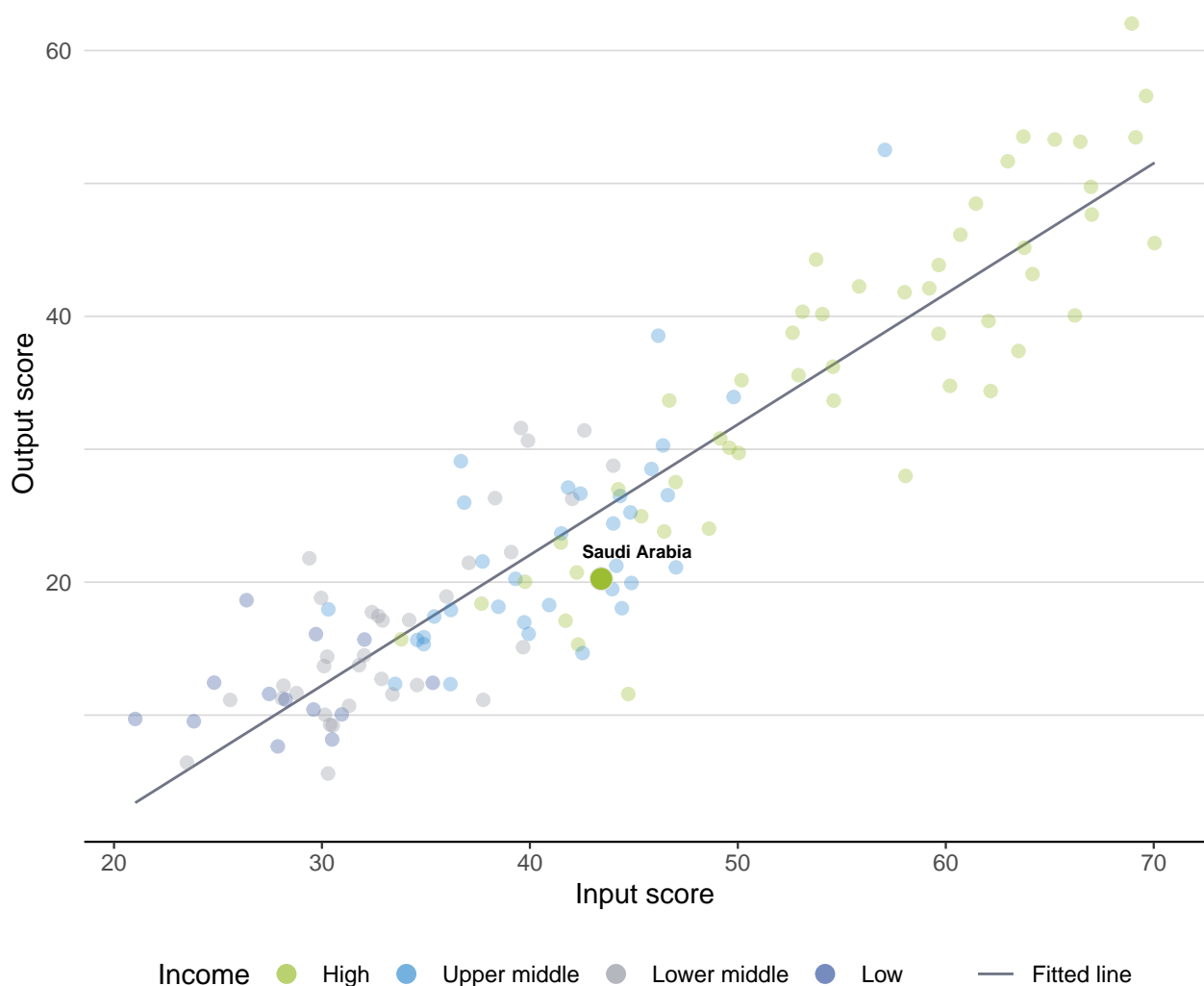


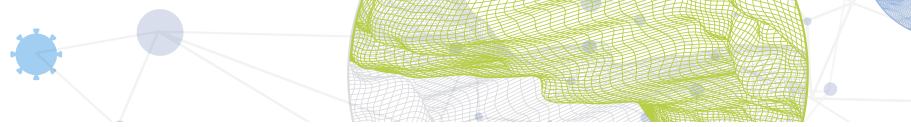
## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

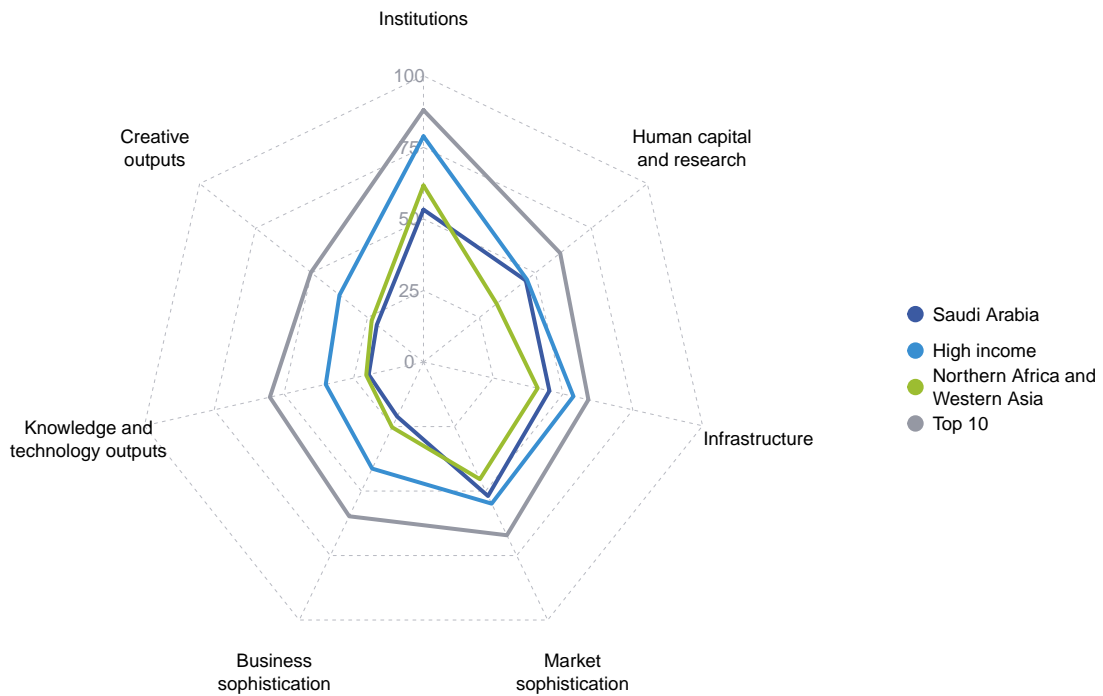
### Innovation input to output performance





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

## The seven GII pillar scores for Saudi Arabia



### High-income group economies

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

### Northern Africa and Western Asia

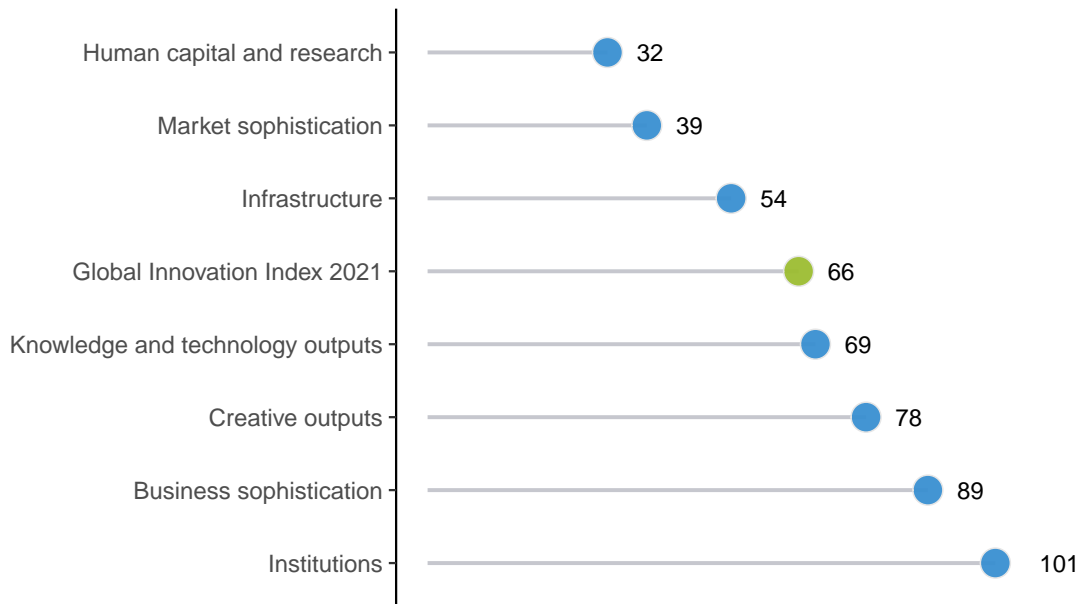
Saudi Arabia performs above the regional average in three pillars, namely: Human capital and research; Infrastructure; and, Market sophistication.



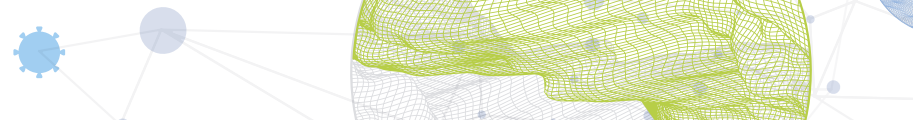
## OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

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

### The seven GII pillar ranks for Saudi Arabia



Note: The highest possible ranking in each pillar is one.



## INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Saudi Arabia in the GII 2021.

### Strengths and weaknesses for Saudi Arabia

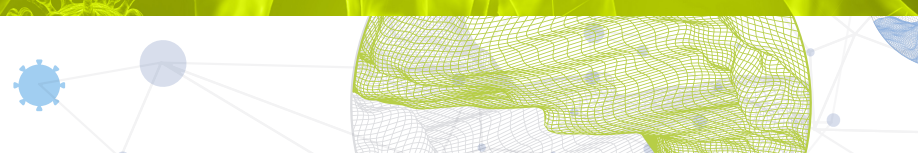
Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.2.1	Tertiary enrolment, % gross	29	1.1.1	Political and operational stability	119
2.3	Research and development (R&D)	26	1.3	Business environment	129
2.3.3	Global corporate R&D investors, top 3, mn US\$	22	1.3.2	Ease of resolving insolvency	129
2.3.4	QS university ranking, top 3	24	2.1.4	PISA scales in reading, maths and science	71
3.1.1	ICT access	28	4.2.4	Venture capital recipients, deals/bn PPP\$ GDP	80
3.2.1	Electricity output, GWh/mn pop.	12	5.3.1	Intellectual property payments, % total trade	122
4.2.1	Ease of protecting minority investors	3	5.3.4	FDI net inflows, % GDP	119
4.2.2	Market capitalization, % GDP	6	6.2.1	Labor productivity growth, %	101
4.3	Trade, diversification, and market scale	29	6.3.3	High-tech exports, % total trade	118
4.3.3	Domestic market scale, bn PPP\$	17	7.1.3	Industrial designs by origin/bn PPP\$ GDP	101
5.2.2	State of cluster development and depth	8	7.2.1	Cultural and creative services exports, % total trade	100
7.1.2	Global brand value, top 5,000, % GDP	19			

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
72	59	High	NAWA	34.8	1,608.6	46,273	66

	Score/Value	Rank		Score/Value	Rank
<b>Institutions</b>	53.3	101	<b>Business sophistication</b>	21.1	89
<b>1.1 Political environment</b>	55.6	73	<b>5.1 Knowledge workers</b>	16.6	[108]
1.1.1 Political and operational stability*	51.8	119	5.1.1 Knowledge-intensive employment, %	n/a	n/a
1.1.2 Government effectiveness*	57.5	54	5.1.2 Firms offering formal training, %	n/a	n/a
<b>1.2 Regulatory environment</b>	57.6	87	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	41.7	75	5.1.4 GERD financed by business, %	n/a	n/a
1.2.2 Rule of law*	51.2	55	5.1.5 Females employed w/advanced degrees, %	5.5	93
1.2.3 Cost of redundancy dismissal	23.7	102	<b>5.2 Innovation linkages</b>	30.5	34
<b>1.3 Business environment</b>	46.6	129	5.2.1 University-industry R&D collaboration†	52.9	35
1.3.1 Ease of starting a business*	93.1	36	5.2.2 State of cluster development and depth†	68.5	8
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 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	70
			5.2.5 Patent families/bn PPP\$ GDP	0.3	36
<b>Human capital and research</b>	45.7	32	<b>5.3 Knowledge absorption</b>	16.3	110
<b>2.1 Education</b>	59.6	[30]	5.3.1 Intellectual property payments, % total trade	0.0	122
2.1.1 Expenditure on education, % GDP	n/a	n/a	5.3.2 High-tech imports, % total trade	7.1	77
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a	5.3.3 ICT services imports, % total trade	0.7	89
2.1.3 School life expectancy, years	16.0	36	5.3.4 FDI net inflows, % GDP	0.4	119
2.1.4 PISA scales in reading, maths and science	386.2	71	5.3.5 Research talent, % in businesses	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	13.6	61	<b>Knowledge and technology outputs</b>	19.6	69
<b>2.2 Tertiary education</b>	36.6	51	<b>6.1 Knowledge creation</b>	17.1	60
2.2.1 Tertiary enrolment, % gross	70.9	29	6.1.1 Patents by origin/bn PPP\$ GDP	1.0	64
2.2.2 Graduates in science and engineering, %	22.0	61	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.6	32
2.2.3 Tertiary inbound mobility, %	4.4	54	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
<b>2.3 Research and development (R&amp;D)</b>	40.9	26	6.1.4 Scientific and technical articles/bn PPP\$ GDP	15.9	53
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.5 Citable documents H-index	22.7	38
2.3.2 Gross expenditure on R&D, % GDP	0.8	47	<b>6.2 Knowledge impact</b>	27.5	72
2.3.3 Global corporate R&D investors, top 3, mn US\$	62.7	22	6.2.1 Labor productivity growth, %	-2.0	101
2.3.4 QS university ranking, top 3*	43.7	24	6.2.2 New businesses/th pop. 15-64	0.5	99
<b>Infrastructure</b>	45.1	54	6.2.3 Software spending, % GDP	0.3	37
<b>3.1 Information and communication technologies (ICTs)</b>	74.5	48	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	1.3	102
3.1.1 ICT access*	81.5	28	6.2.5 High-tech manufacturing, %	35.6	33
3.1.2 ICT use*	76.3	34	<b>6.3 Knowledge diffusion</b>	14.3	72
3.1.3 Government's online service*	68.8	71	6.3.1 Intellectual property receipts, % total trade	n/a	n/a
3.1.4 E-participation*	71.4	66	6.3.2 Production and export complexity	59.4	36
<b>3.2 General infrastructure</b>	39.1	32	6.3.3 High-tech exports, % total trade	0.1	118
3.2.1 Electricity output, GWh/mn pop.	11,221.2	12	6.3.4 ICT services exports, % total trade	0.7	92
3.2.2 Logistics performance*	44.8	54	<b>Creative outputs</b>	20.9	78
3.2.3 Gross capital formation, % GDP	27.6	31	<b>7.1 Intangible assets</b>	30.9	63
<b>3.3 Ecological sustainability</b>	21.7	90	7.1.1 Trademarks by origin/bn PPP\$ GDP	14.0	104
3.3.1 GDP/unit of energy use	8.3	88	7.1.2 Global brand value, top 5,000, % GDP	110.9	19
3.3.2 Environmental performance*	44.0	79	7.1.3 Industrial designs by origin/bn PPP\$ GDP	0.2	101
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.3	96	7.1.4 ICTs and organizational model creation†	61.5	40
<b>Market sophistication</b>	51.9	39	<b>7.2 Creative goods and services</b>	8.3	86
<b>4.1 Credit</b>	40.5	67	7.2.1 Cultural and creative services exports, % total trade	0.0	100
4.1.1 Ease of getting credit*	60.0	74	7.2.2 National feature films/mn pop. 15-69	n/a	n/a
4.1.2 Domestic credit to private sector, % GDP	54.0	62	7.2.3 Entertainment and media market/th pop. 15-69	15.9	29
4.1.3 Microfinance gross loans, % GDP	n/a	n/a	7.2.4 Printing and other media, % manufacturing	1.2	40
<b>4.2 Investment</b>	35.7	46	7.2.5 Creative goods exports, % total trade	0.2	81
4.2.1 Ease of protecting minority investors*	86.0	3	<b>7.3 Online creativity</b>	13.3	79
4.2.2 Market capitalization, % GDP	144.1	6	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	2.7	69
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	0.0	49	7.3.2 Country-code TLDs/th pop. 15-69	0.8	92
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	0.0	80	7.3.3 Wikipedia edits/mn pop. 15-69	49.4	66
<b>4.3 Trade, diversification, and market scale</b>	79.6	29	7.3.4 Mobile app creation/bn PPP\$ GDP	0.5	80
4.3.1 Applied tariff rate, weighted avg., %	4.8	83			
4.3.2 Domestic industry diversification	89.5	53			
4.3.3 Domestic market scale, bn PPP\$	1,608.6	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 IV 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 for Saudi Arabia

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	n/a	2017	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.1	Knowledge-intensive employment, %	n/a	2019	International Labour Organization
5.1.2	Firms offering formal training, %	n/a	2019	World Bank
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2018	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2019	World Trade Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics





## Outdated data for Saudi Arabia

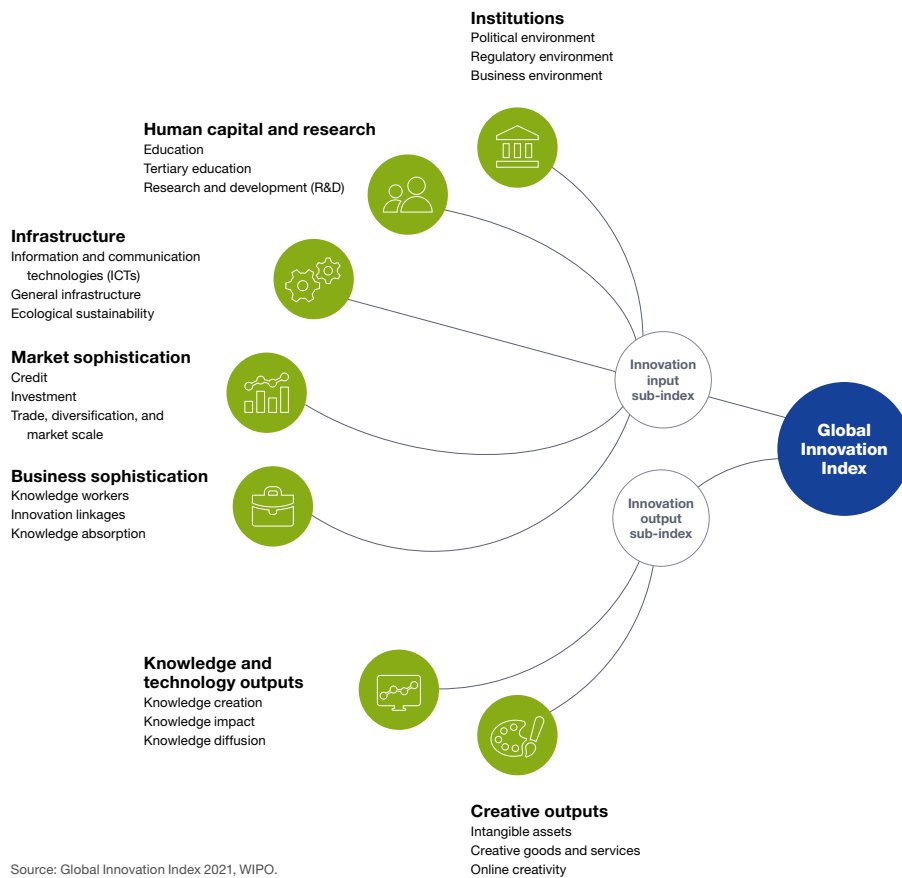
Code	Indicator name	Economy year	Model year	Source
2.3.2	Gross expenditure on R&D, % GDP	2013	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.2	Domestic credit to private sector, % GDP	2017	2019	International Monetary Fund
4.3.1	Applied tariff rate, weighted avg., %	2017	2019	World Bank
5.1.5	Females employed w/advanced degrees, %	2016	2019	International Labour Organization
5.3.1	Intellectual property payments, % total trade	2014	2019	World Trade Organization
7.2.5	Creative goods exports, % total trade	2018	2019	United Nations, COMTRADE



## ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.

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.



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.