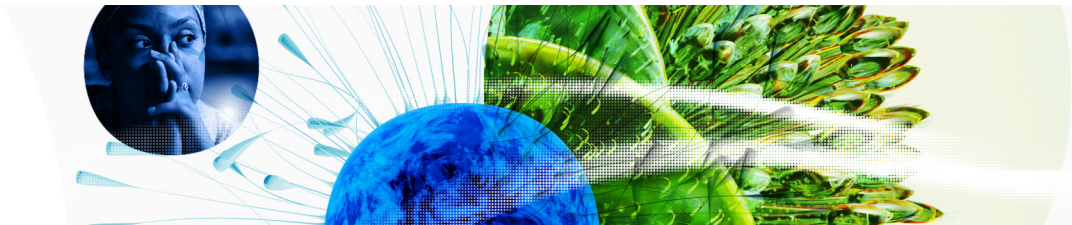


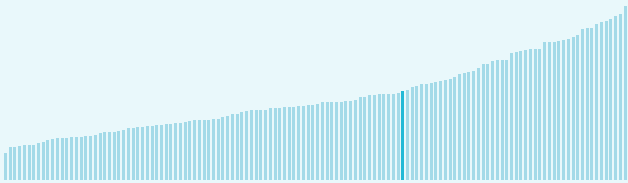
# Global Innovation Index 2023



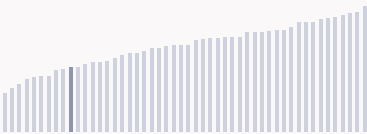
The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities**. Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation**.

## Saudi Arabia ranking in the Global Innovation Index 2023

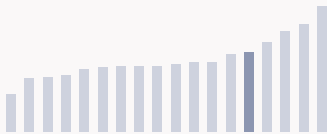
> Saudi Arabia ranks **48th** among the 132 economies featured in the GII 2023.



> Saudi Arabia ranks **41st** among the 50 high-income group economies.



> Saudi Arabia ranks **5th** among the 18 economies in Northern Africa and Western Asia.



### > Saudi Arabia GII Ranking (2020-2023)

The table shows the rankings of Saudi Arabia over the past four years. 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 2023 is between ranks 47 and 54.

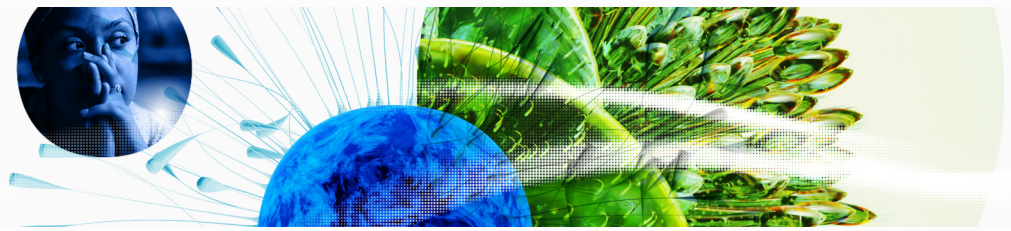
	GII Position	Innovation Inputs	Innovation Outputs
2020	66th	50th	77th
2021	66th	59th	72nd
2022	51st	37th	65th
2023	48th	37th	67th

Saudi Arabia performs worse in innovation outputs than innovation inputs in 2023.

This year Saudi Arabia ranks 37th in innovation inputs. This position is the same as last year.

Saudi Arabia ranks 67th in innovation outputs. This position is lower than last year.

# Global Innovation Index 2023



## → Expected vs. observed innovation performance

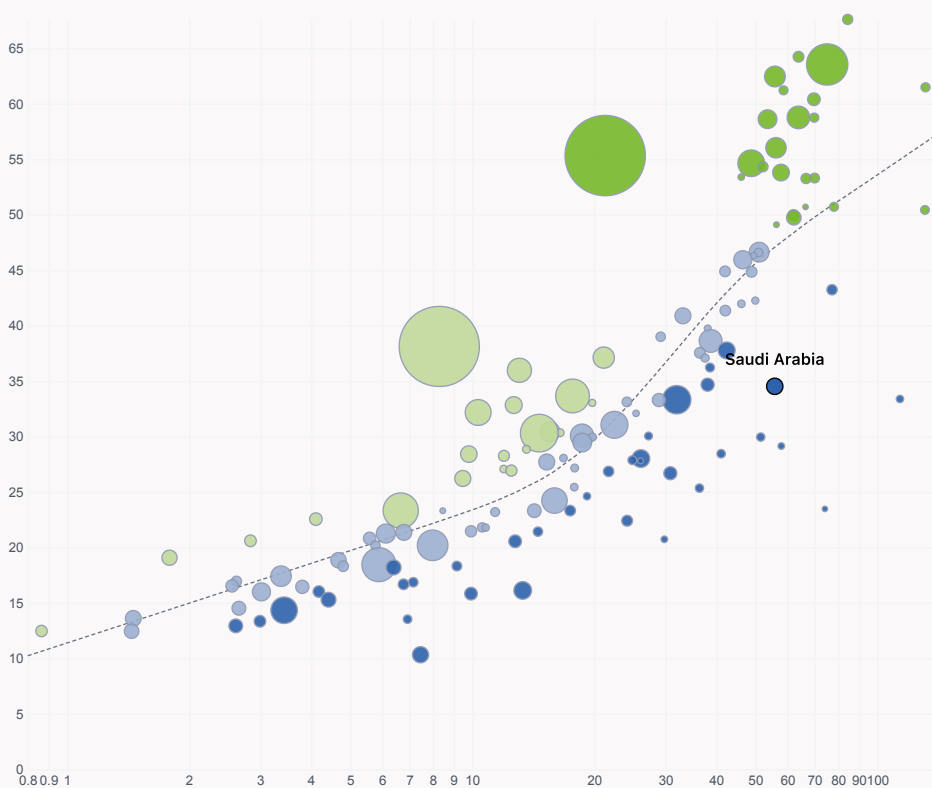
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.



> Relative to GDP, Saudi Arabia's performance is below expectations for its level of development.

## > Innovation overperformers relative to their economic development

↑ GII Score



- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



→ GDP per capita, PPP logarithmic scale (thousands of \$)

# Global Innovation Index 2023



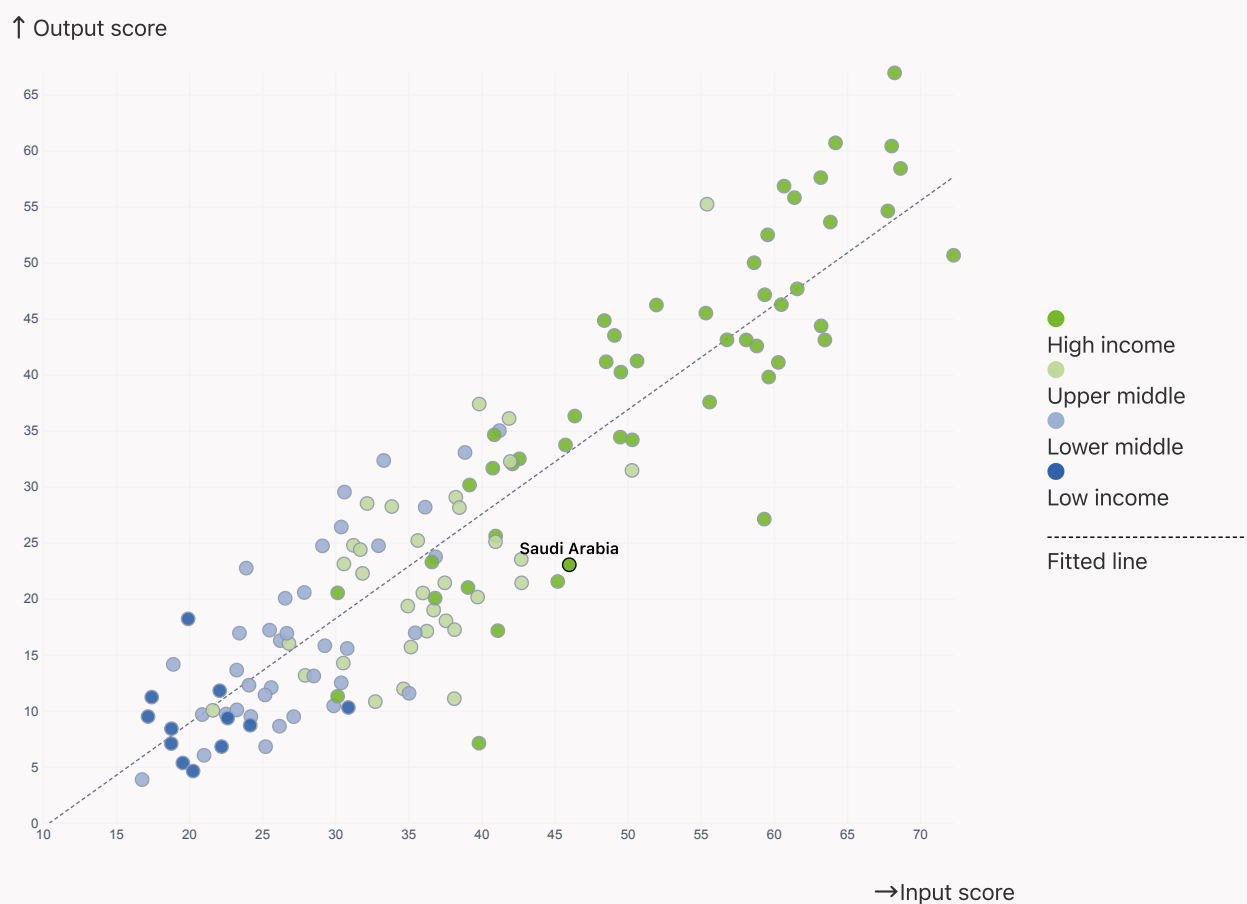
## → Effectively translating innovation investments into innovation outputs

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.

### > Relationship between innovation inputs and outputs



# Global Innovation Index 2023



## → Overview of Saudi Arabia's rankings in the seven areas of the GII in 2023

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Saudi Arabia are those that rank above the GII (shown in blue) and the weakest are those that rank below.

Highest rankings →

- 28th Market sophistication
- 35th Human capital and research
- 45th 2 pillars \*
- 48th 1 pillar and the [Global Innovation Index](#) \*\*

← Lowest rankings

- 66th Creative outputs
- 68th Knowledge and technology outputs

\* Institutions, Business sophistication

\*\* Infrastructure

### > Highest rankings



Saudi Arabia ranks highest in Market sophistication (28th), Human capital and research (35th), Institutions, Business sophistication (45th) and Infrastructure (48th).

### > Lowest rankings



Saudi Arabia ranks lowest in Knowledge and technology outputs (68th), Creative outputs (66th) and Infrastructure, GII Index (48th).



The full WIPO Intellectual Property Statistics profile for Saudi Arabia can be found on [this link](#).

# Global Innovation Index 2023



## → Benchmark of Saudi Arabia against other country groupings for each of the seven areas of the GII Index

The charts show the relative position of Saudi Arabia (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

### > High-Income economies

Saudi Arabia performs below the high-income group average in Knowledge and technology outputs, Creative outputs, Business sophistication, Human capital and research, Infrastructure, Institutions.



### > Northern Africa And Western Asia

Saudi Arabia performs above the regional average in Business sophistication, Market sophistication, Human capital and research, Infrastructure, Institutions.



### Knowledge and technology outputs

Top 10 | Score: 58.96

High income | Score: 38.62

NAWA | Score: 24.01

Saudi Arabia | Score: 21.95

### Creative outputs

Top 10 | 56.09

High income | 40.27

NAWA | 24.51

Saudi Arabia | 24.07

### Business sophistication

Top 10 | 64.39

High income | 46.38

Saudi Arabia | 34.42

NAWA | 29.44

### Market sophistication

Top 10 | 61.93

Saudi Arabia | 47.54

High income | 46.42

NAWA | 36.12

### Human capital and research

Top 10 | 60.28

High income | 46.30

Saudi Arabia | 40.56

NAWA | 32.72

### Infrastructure

Top 10 | 62.83

High income | 55.85

Saudi Arabia | 48.35

NAWA | 41.60

### Institutions

Top 10 | 79.85

High income | 68.16

Saudi Arabia | 59.20

NAWA | 53.39



# Global Innovation Index 2023



## → Innovation strengths and weaknesses in Saudi Arabia

The table below gives an overview of the indicator strengths and weaknesses of Saudi Arabia in the GII 2023.



> Saudi Arabia's main innovation strengths are **Market capitalization, % GDP (rank 4)**, **ICT access (rank 7)** and **State of cluster development (rank 8)**.

### Strengths

Rank	Code	Indicator name	Rank	Code	Indicator name
4	4.2.1	Market capitalization, % GDP	126	6.2.1	Labor productivity growth, %
7	3.1.1	ICT access	111	5.3.3	ICT services imports, % total trade
8	5.2.2	State of cluster development	103	1.2.3	Cost of redundancy dismissal
10	3.1.2	ICT use	103	7.1.2	Trademarks by origin/bn PPP\$ GDP
11	1.3.2	Entrepreneurship policies and culture	102	3.3.1	GDP/unit of energy use
13	3.2.1	Electricity output, GWh/mn pop.	101	7.3.3	GitHub commits/mn pop. 15-69
16	1.3.1	Policies for doing business	97	7.2.1	Cultural and creative services exports, % total trade
16	2.3.3	Global corporate R&D investors, top 3, mn US\$	80	4.2.3	VC recipients, deals/bn PPP\$ GDP
17	4.3.3	Domestic market scale, bn PPP\$	71	2.1.4	PISA scales in reading, maths and science
20	2.3.4	QS university ranking, top 3	48	6.2.2	Unicorn valuation, % GDP

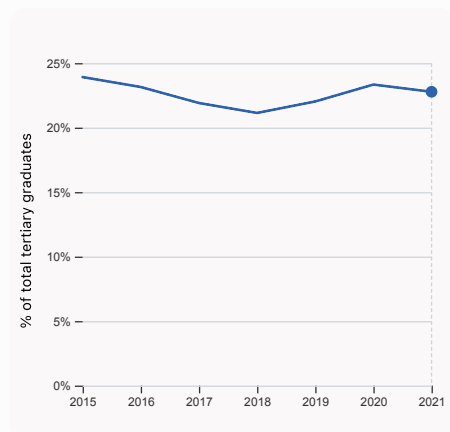
# Global Innovation Index 2023



## → Saudi Arabia's innovation system

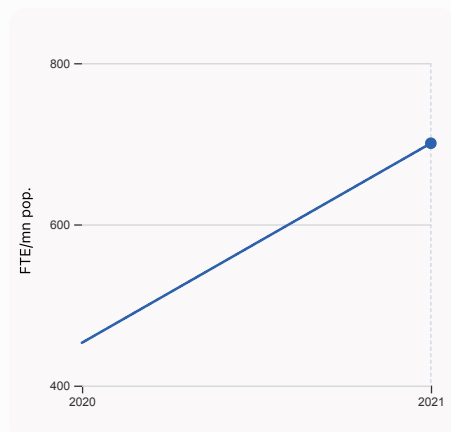
As far as practicable, the plots below present unscaled indicator data.

### > Innovation inputs in Saudi Arabia



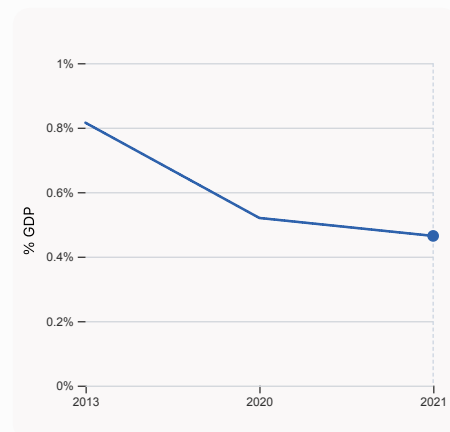
#### 2.2.2 Graduates in science and engineering, %

was equal to 22.78% of total tertiary graduates in 2021, down by 0.56 percentage points from the year prior – and equivalent to an indicator rank of 56.



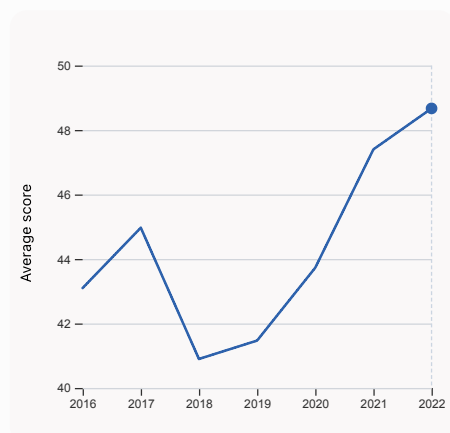
#### 2.3.1 Researchers, FTE/mn pop.

was equal to 700.64 FTE/mn pop. in 2021, up by 54.62% from the year prior – and equivalent to an indicator rank of 62.



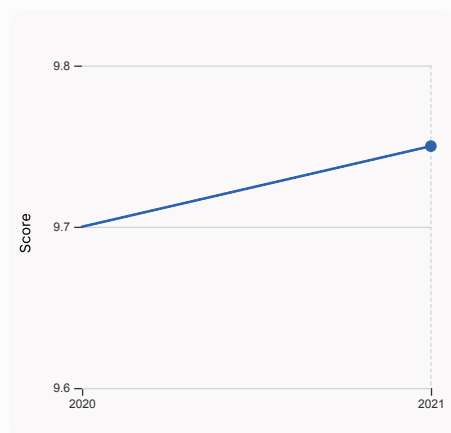
#### 2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.464% GDP in 2021, down by 0.056 percentage points from the year prior – and equivalent to an indicator rank of 63.



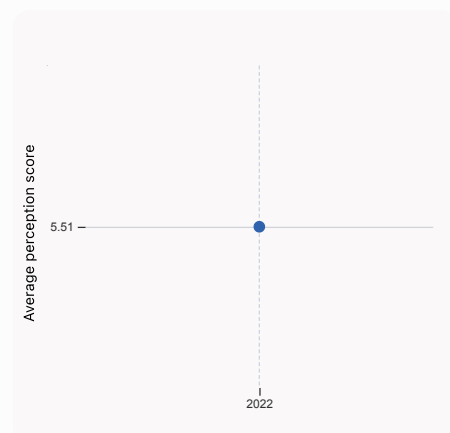
#### 2.3.4 QS university ranking, top 3

was equal to an average score of 48.67 for the top 3 universities in 2022, up by 2.68% from the year prior – and equivalent to an indicator rank of 20.



#### 3.1.1 ICT access

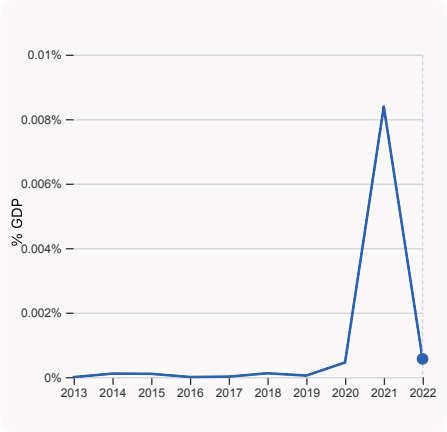
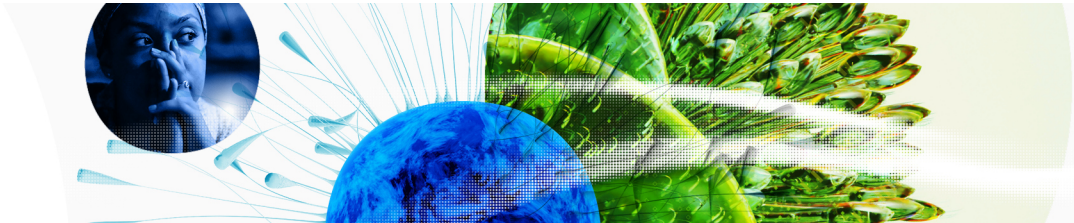
was equal to a score of 9.75 in 2021, up by 0.52% from the year prior – and equivalent to an indicator rank of 7.



#### 4.1.1 Finance for startups and scaleups

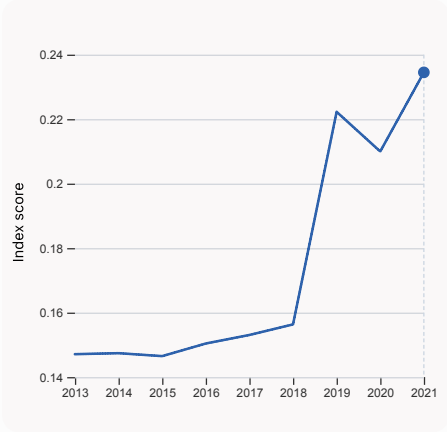
was equal to an average perception score of 5.51 in 2022, equivalent to an indicator rank of 18.

# Global Innovation Index 2023



## 4.2.4 VC received, value, % GDP

was equal to 0.00057% GDP in 2022, down by 0.0078 percentage points from the year prior – and equivalent to an indicator rank of 22.



## 4.3.2 Domestic industry diversification

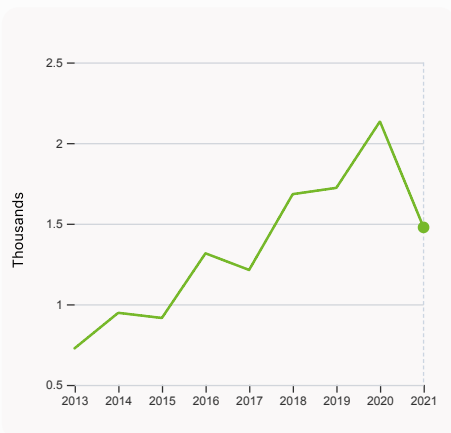
was equal to an index score of 0.235 in 2021, up by 11.68% from the year prior – and equivalent to an indicator rank of 81.



# Global Innovation Index 2023

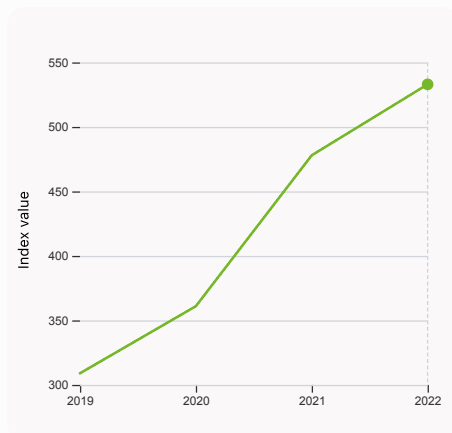


## > Innovation outputs in Saudi Arabia



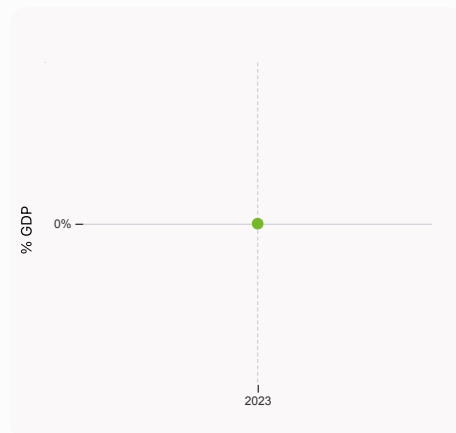
### 6.1.1 Patents by origin

was equal to 1.48 Thousands in 2021, down by 30.79% from the year prior – and equivalent to an indicator rank of 64.



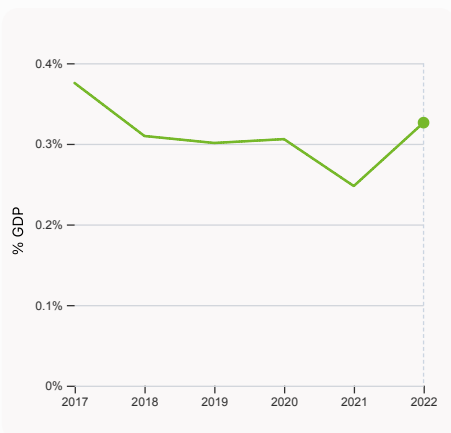
### 6.1.5 Citable documents H-index

was equal to an index value of 533 in 2022, up by 11.51% from the year prior – and equivalent to an indicator rank of 37.



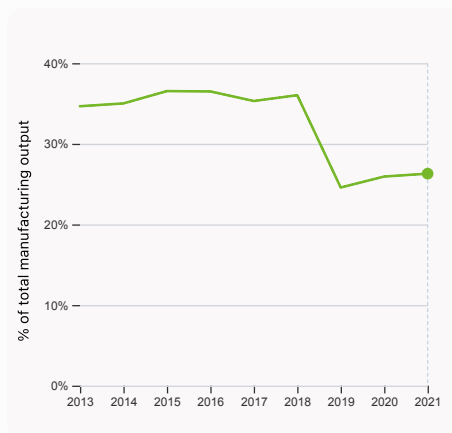
### 6.2.2 Unicorn valuation, % GDP

was equal to 0 % GDP in 2023 – and equivalent to an indicator rank of 48.



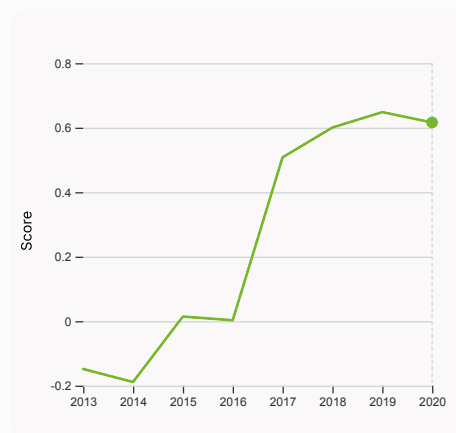
### 6.2.3 Software spending, % GDP

was equal to 0.326% GDP in 2022, up by 0.079 percentage points from the year prior – and equivalent to an indicator rank of 35.



### 6.2.4 High-tech manufacturing, %

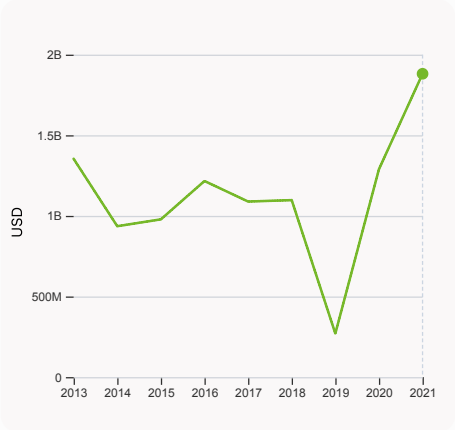
was equal to 26.3% of total manufacturing output in 2021, up by 0.36 percentage points from the year prior – and equivalent to an indicator rank of 47.



### 6.3.2 Production and export complexity

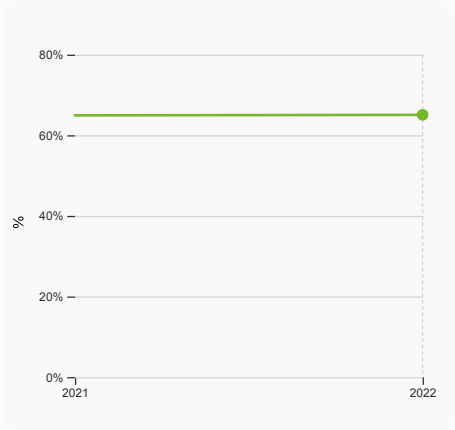
was equal to a score of 0.616 in 2020, down by 4.94% from the year prior – and equivalent to an indicator rank of 42.

# Global Innovation Index 2023



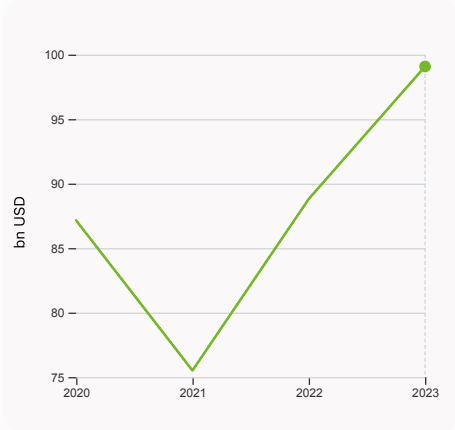
### 6.3.3 High-tech exports

was equal to 1,881,353,088 USD in 2021, up by 45.91% from the year prior – and equivalent to an indicator rank of 76.



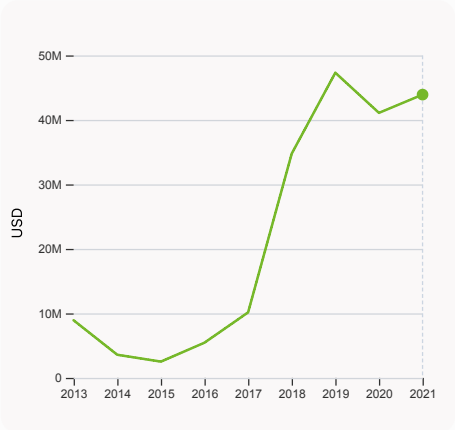
### 7.1.1 Intangible asset intensity, top 15, %

was equal to 65.06% in 2022, up by 0.11 percentage points from the year prior – and equivalent to an indicator rank of 27.



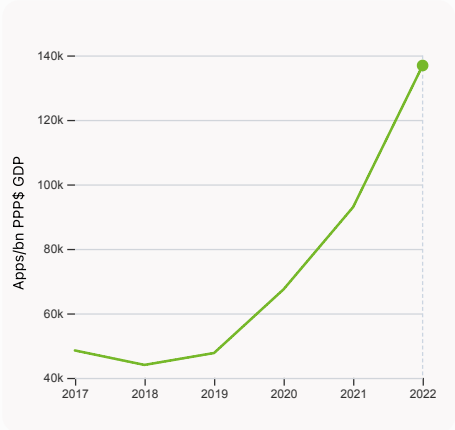
### 7.1.3 Global brand value, top 5,000

was equal to 99.084 bn USD in 2023, up by 11.57% from the year prior – and equivalent to an indicator rank of 18.



### 7.2.1 Cultural and creative services exports

was equal to 43,922,000 USD in 2021, up by 6.88% from the year prior – and equivalent to an indicator rank of 97.



### 7.3.4 Mobile app creation/bn PPP\$ GDP

was equal to 136,871.43 Apps/bn PPP\$ GDP in 2022, up by 47.26% from the year prior – and equivalent to an indicator rank of 68.

# Global Innovation Index 2023



## → Saudi Arabia's innovation top performers

### > 2.3.4 QS university ranking of Saudi Arabia's top universities

Rank	University	Score
106	KING ABDUL AZIZ UNIVERSITY (KAU)	57.80
160	KING FAHD UNIVERSITY OF PETROLEUM & MINERALS (KFUPM)	48.80
237	KING SAUD UNIVERSITY (KSU)	39.40

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2023>).

Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100]. Ranks can represent a single value "x", a tie "x=" or a range "x-y".

### > 7.1.1 Top 15 intangible-asset intensive companies in Saudi Arabia

Rank	Firm	Intensity, %
1	SAUDI ARABIAN OIL CO	85.90
2	AL RAJHI BANK	73.91
3	SAUDI ARABIAN MINING CO	65.38

Source: Brand Finance (<https://brandirectory.com/reports/gift-2022>).

Note: Brand Finance only provides within economy ranks.

### > 7.1.3 Top 5,000 companies in Saudi Arabia with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	ARAMCO	Oil & Gas	45,227.2
2	STC	Telecoms	12,337.7
3	AL-RAJHI BANK	Banking	5,657.9

Source: Brand Finance (<https://brandirectory.com>).

Note: Rank corresponds to within economy ranks.

# Global Innovation Index 2023



GII 2023 rank

48

## Saudi Arabia

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
67	37	High	NAWA	36.4	2,018.3	55,802.3
Score / Value Rank						
Score / Value Rank						
Institutions						
1.1 Institutional environment						
1.1.1 Operational stability for businesses*						
1.1.2 Government effectiveness*						
1.2 Regulatory environment						
1.2.1 Regulatory quality*						
1.2.2 Rule of law*						
1.2.3 Cost of redundancy dismissal						
1.3 Business environment						
1.3.1 Policies for doing business*						
1.3.2 Entrepreneurship policies and culture*						
Human capital and research						
2.1 Education						
2.1.1 Expenditure on education, % GDP						
2.1.2 Government funding/pupil, secondary, % GDP/cap						
2.1.3 School life expectancy, years						
2.1.4 PISA scales in reading, maths and science						
2.1.5 Pupil-teacher ratio, secondary						
2.2 Tertiary education						
2.2.1 Tertiary enrolment, % gross						
2.2.2 Graduates in science and engineering, %						
2.2.3 Tertiary inbound mobility, %						
2.3 Research and development (R&D)						
2.3.1 Researchers, FTE/mn pop.						
2.3.2 Gross expenditure on R&D, % GDP						
2.3.3 Global corporate R&D investors, top 3, mn US\$						
2.3.4 QS university ranking, top 3*						
Infrastructure						
3.1 Information and communication technologies (ICTs)						
3.1.1 ICT access*						
3.1.2 ICT use*						
3.1.3 Government's online service*						
3.1.4 E-participation*						
3.2 General infrastructure						
3.2.1 Electricity output, GWh/mn pop.						
3.2.2 Logistics performance*						
3.2.3 Gross capital formation, % GDP						
3.3 Ecological sustainability						
3.3.1 GDP/unit of energy use						
3.3.2 Environmental performance*						
3.3.3 ISO 14001 environment/bn PPP\$ GDP						
Market sophistication						
4.1 Credit						
4.1.1 Finance for startups and scaleups*						
4.1.2 Domestic credit to private sector, % GDP						
4.1.3 Loans from microfinance institutions, % GDP						
4.2 Investment						
4.2.1 Market capitalization, % GDP						
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP						
4.2.3 VC recipients, deals/bn PPP\$ GDP						
4.2.4 VC received, value, % GDP						
4.3 Trade, diversification, and market scale						
4.3.1 Applied tariff rate, weighted avg., %						
4.3.2 Domestic industry diversification						
4.3.3 Domestic market scale, bn PPP\$						
Business sophistication						
5.1 Knowledge workers						
5.1.1 Knowledge-intensive employment, %						
5.1.2 Firms offering formal training, %						
5.1.3 GERD performed by business, % GDP						
5.1.4 GERD financed by business, %						
5.1.5 Females employed w/advanced degrees, %						
5.2 Innovation linkages						
5.2.1 University-industry R&D collaboration*						
5.2.2 State of cluster development*						
5.2.3 GERD financed by abroad, % GDP						
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP						
5.2.5 Patent families/bn PPP\$ GDP						
5.3 Knowledge absorption						
5.3.1 Intellectual property payments, % total trade						
5.3.2 High-tech imports, % total trade						
5.3.3 ICT services imports, % total trade						
5.3.4 FDI net inflows, % GDP						
5.3.5 Research talent, % in businesses						
Knowledge and technology outputs						
6.1 Knowledge creation						
6.1.1 Patents by origin/bn PPP\$ GDP						
6.1.2 PCT patents by origin/bn PPP\$ GDP						
6.1.3 Utility models by origin/bn PPP\$ GDP						
6.1.4 Scientific and technical articles/bn PPP\$ GDP						
6.1.5 Citable documents H-index						
6.2 Knowledge impact						
6.2.1 Labor productivity growth, %						
6.2.2 Unicorn valuation, % GDP						
6.2.3 Software spending, % GDP						
6.2.4 High-tech manufacturing, %						
6.3 Knowledge diffusion						
6.3.1 Intellectual property receipts, % total trade						
6.3.2 Production and export complexity						
6.3.3 High-tech exports, % total trade						
6.3.4 ICT services exports, % total trade						
6.3.5 ISO 9001 quality/bn PPP\$ GDP						
Creative outputs						
7.1 Intangible assets						
7.1.1 Intangible asset intensity, top 15, %						
7.1.2 Trademarks by origin/bn PPP\$ GDP						
7.1.3 Global brand value, top 5,000						
7.1.4 Industrial designs by origin/bn PPP\$ GDP						
7.2 Creative goods and services						
7.2.1 Cultural and creative services exports, % total trade						
7.2.2 National feature films/mn pop. 15-69						
7.2.3 Entertainment and media market/th pop. 15-69						
7.2.4 Creative goods exports, % total trade						
7.3 Online creativity						
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69						
7.3.2 Country-code TLDs/th pop. 15-69						
7.3.3 GitHub commits/mn pop. 15-69						
7.3.4 Mobile app creation/bn PPP\$ GDP						

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 appendices for details, including the year of the data, at <https://www.wipo.int/gii-ranking>. 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 indicators that are either missing or outdated for Saudi Arabia.



> Saudi Arabia has missing data for fourteen indicators and outdated data for two indicators.

## > Missing data for Saudi Arabia

Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	n/a	2021	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2019	UNESCO Institute for Statistics
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	International Monetary Fund, Financial Access Survey (FAS)
5.1.1	Knowledge-intensive employment, %	n/a	2022	International Labour Organization
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
5.1.3	GERD performed by business, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	n/a	2022	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.1	Intellectual property payments, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization; International Monetary Fund
6.3.1	Intellectual property receipts, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development
7.2.2	National feature films/mn pop. 15-69	n/a	2021	OMDIA; United Nations, World Population Prospects



# Global Innovation Index 2023



> Outdated data for Saudi Arabia

Code	Indicator name	Economy Year	Model Year	Source
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
4.1.2	Domestic credit to private sector, % GDP	2017	2020	International Monetary Fund; World Bank and OECD GDP estimates.



# Global Innovation Index 2023



## → 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.