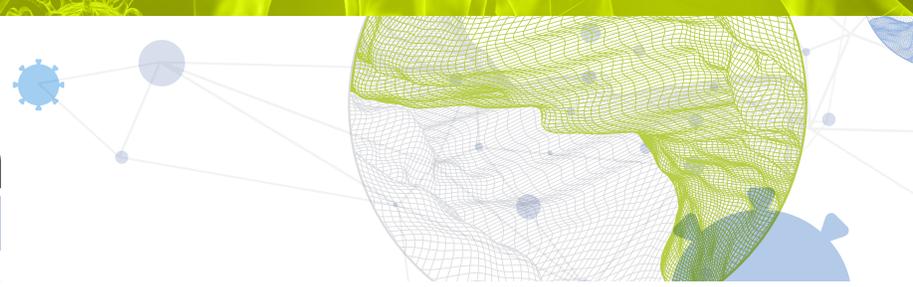




Global Innovation Index 2021



UNITED ARAB EMIRATES

33rd

The United Arab Emirates ranks 33rd 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 the United Arab Emirates 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 the United Arab Emirates in the GII 2021 is between ranks 33 and 36.

Rankings for the United Arab Emirates (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	33	23	47
2020	34	22	55
2019	36	24	58

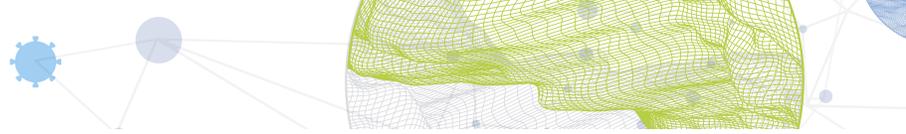
- The United Arab Emirates performs better in innovation inputs than innovation outputs in 2021.
- This year the United Arab Emirates ranks 23rd in innovation inputs, lower than last year but higher than 2019.
- As for innovation outputs, The United Arab Emirates ranks 47th. This position is higher than both 2020 and 2019.

32nd

The United Arab Emirates ranks 32nd among the 51 high-income group economies.

3rd

The United Arab Emirates ranks 3rd among the 19 economies in Northern Africa and Western Asia.

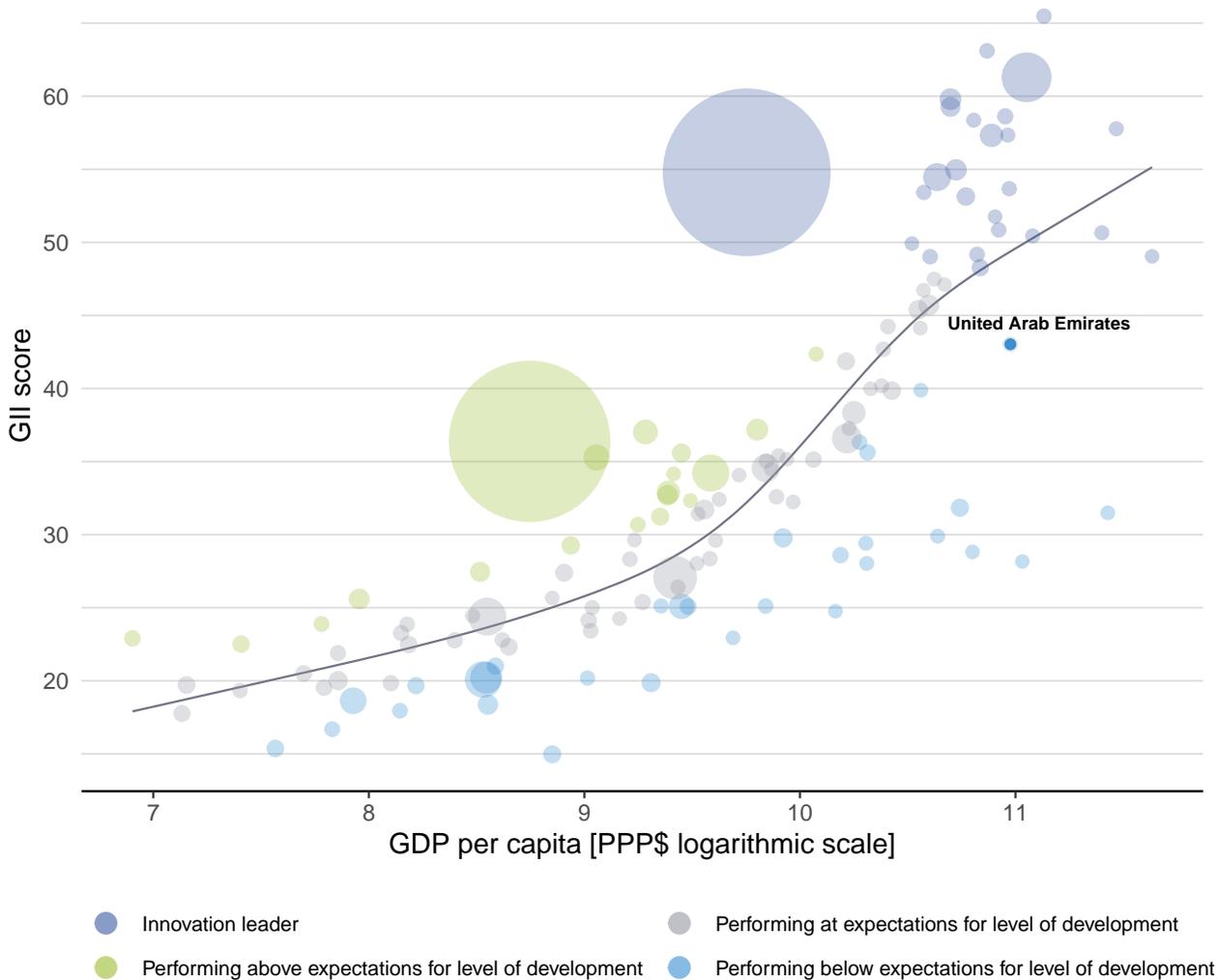


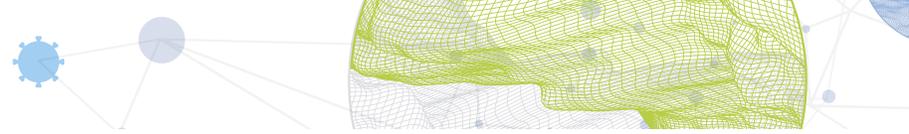
EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, the United Arab Emirates's performance is below expectations for its level of development.

The positive relationship between innovation and development



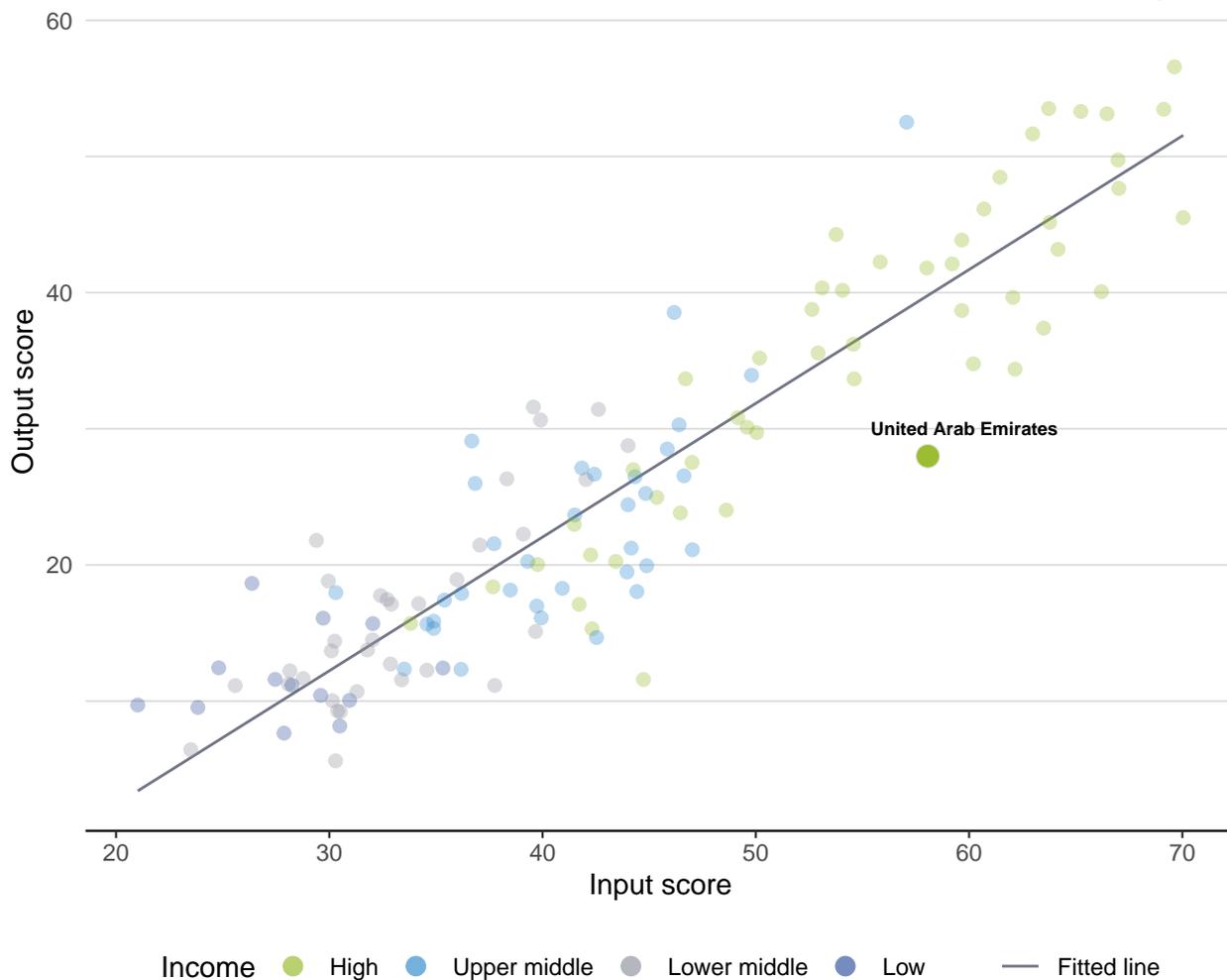


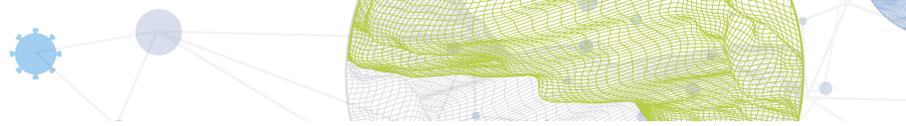
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

The United Arab Emirates produces less innovation outputs relative to its level of innovation investments.

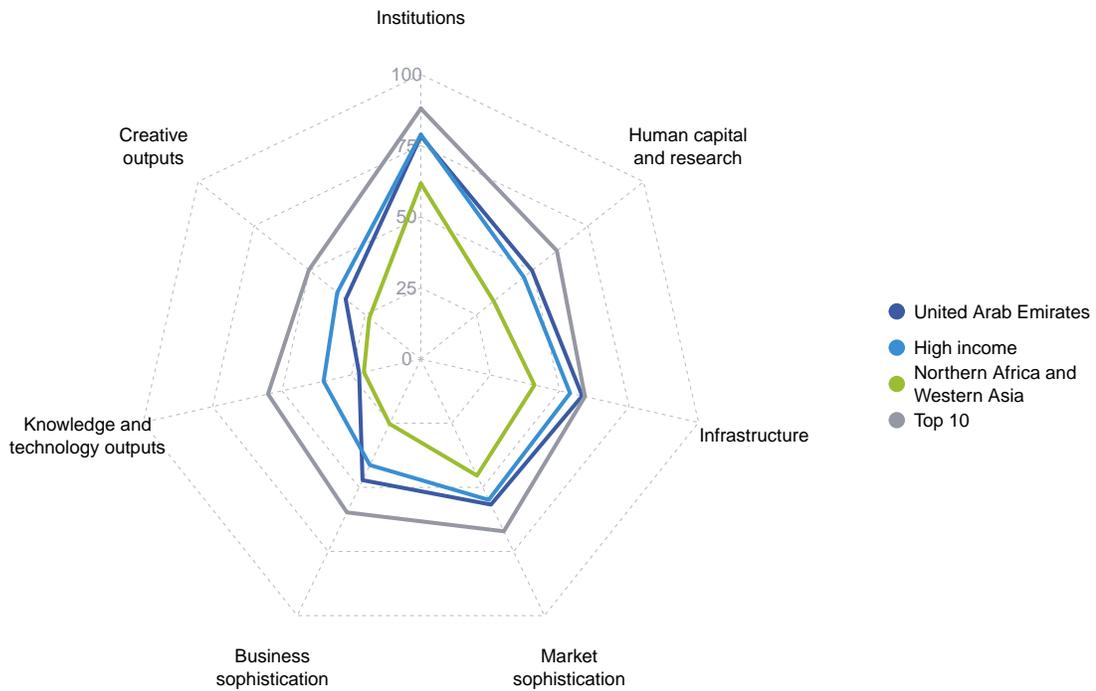
Innovation input to output performance





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

The seven GII pillar scores for the United Arab Emirates

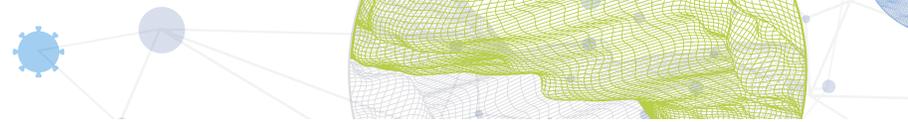


High-income group economies

The United Arab Emirates performs above the high-income group average in four pillars, namely: Human capital and research; Infrastructure; Market sophistication; and, Business sophistication.

Northern Africa and Western Asia

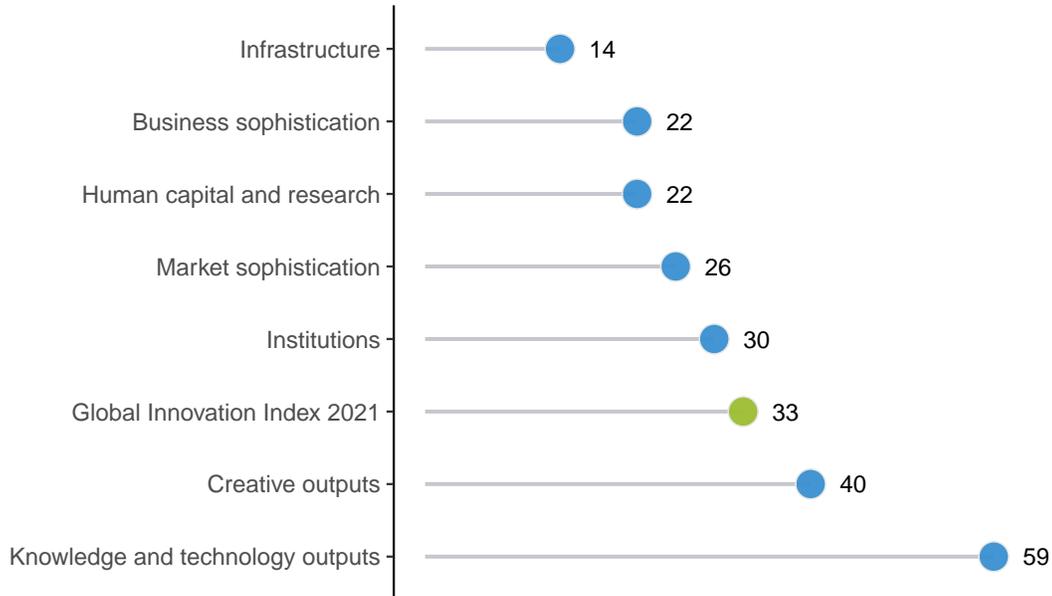
The United Arab Emirates performs above the regional average in all GII pillars.



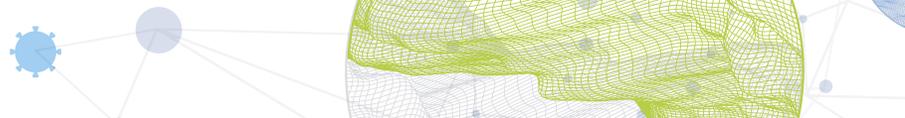
OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

The United Arab Emirates performs best in Infrastructure and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for the United Arab Emirates



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 the United Arab Emirates in the GII 2021.

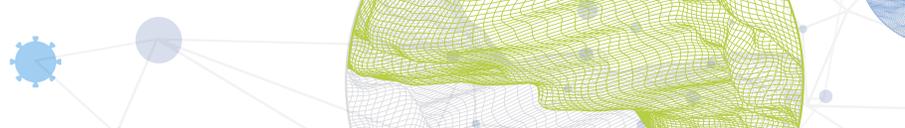
Strengths and weaknesses for the United Arab Emirates

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	1	2.1.1	Expenditure on education, % GDP	94
2.2	Tertiary education	3	2.1.4	PISA scales in reading, maths and science	47
2.2.3	Tertiary inbound mobility, %	1	5.1.5	Females employed w/advanced degrees, %	77
3.1	Information and communication technologies (ICTs)	12	5.3.3	ICT services imports, % total trade	75
3.1.1	ICT access	13	6.1	Knowledge creation	105
3.1.2	ICT use	12	6.1.1	Patents by origin/bn PPP\$ GDP	105
3.2	General infrastructure	7	6.1.3	Utility models by origin/bn PPP\$ GDP	75
3.2.1	Electricity output, GWh/mn pop.	8	6.1.4	Scientific and technical articles/bn PPP\$ GDP	97
3.2.2	Logistics performance	11	6.2.1	Labor productivity growth, %	80
5.1.4	GERD financed by business, %	5	7.1.1	Trademarks by origin/bn PPP\$ GDP	115
5.2.2	State of cluster development and depth	9	7.1.3	Industrial designs by origin/bn PPP\$ GDP	111
5.3.5	Research talent, % in businesses	2			
7.2	Creative goods and services	2			
7.2.5	Creative goods exports, % total trade	6			

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
47	23	High	NAWA	9.9	647.6	58,466	34

	Score/ Value	Rank		Score/ Value	Rank
 Institutions	78.4	30	 Business sophistication	47.2	22
1.1 Political environment	78.6	24	5.1 Knowledge workers	51.4	26
1.1.1 Political and operational stability*	73.2	44	5.1.1 Knowledge-intensive employment, %	36.0	37
1.1.2 Government effectiveness*	81.2	20	5.1.2 Firms offering formal training, %	n/a	n/a
1.2 Regulatory environment	84.5	21	5.1.3 GERD performed by business, % GDP	⊙ 0.8	29
1.2.1 Regulatory quality*	69.1	36	5.1.4 GERD financed by business, %	⊙ 74.3	5 ●◆
1.2.2 Rule of law*	68.9	33	5.1.5 Females employed w/advanced degrees, %	⊙ 8.6	77 ○◇
1.2.3 Cost of redundancy dismissal	8.0	1 ●◆	5.2 Innovation linkages	42.5	21
1.3 Business environment	72.0	61	5.2.1 University-industry R&D collaboration†	62.1	19
1.3.1 Ease of starting a business*	94.8	16	5.2.2 State of cluster development and depth†	68.5	9 ●◆
1.3.2 Ease of resolving insolvency*	49.3	72	5.2.3 GERD financed by abroad, % GDP	n/a	n/a
 Human capital and research	49.9	22	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.2	15
2.1 Education	52.0	61	5.2.5 Patent families/bn PPP\$ GDP	0.1	59
2.1.1 Expenditure on education, % GDP	3.1	94 ○◇	5.3 Knowledge absorption	47.7	16
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a	5.3.1 Intellectual property payments, % total trade	0.8	54
2.1.3 School life expectancy, years	15.7	43	5.3.2 High-tech imports, % total trade	13.0	17
2.1.4 PISA scales in reading, maths and science	433.5	47 ○◇	5.3.3 ICT services imports, % total trade	1.0	75 ○
2.1.5 Pupil-teacher ratio, secondary	10.5	33	5.3.4 FDI net inflows, % GDP	2.8	57
2.2 Tertiary education	59.2	3 ●◆	5.3.5 Research talent, % in businesses	⊙ 77.9	2 ●◆
2.2.1 Tertiary enrolment, % gross	52.6	60	 Knowledge and technology outputs	22.2	59
2.2.2 Graduates in science and engineering, %	31.0	15 ◆	6.1 Knowledge creation	5.9	105 ○◇
2.2.3 Tertiary inbound mobility, %	⊙ 48.6	1 ●◆	6.1.1 Patents by origin/bn PPP\$ GDP	0.1	105 ○
2.3 Research and development (R&D)	38.6	28	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.1	60
2.3.1 Researchers, FTE/mn pop.	⊙ 2,378.9	36	6.1.3 Utility models by origin/bn PPP\$ GDP	0.0	75 ○
2.3.2 Gross expenditure on R&D, % GDP	⊙ 1.3	29	6.1.4 Scientific and technical articles/bn PPP\$ GDP	7.7	97 ○◇
2.3.3 Global corporate R&D investors, top 3, mn US\$	64.9	19	6.1.5 Citable documents H-index	12.8	60
2.3.4 QS university ranking, top 3*	35.8	33	6.2 Knowledge impact	29.5	65
 Infrastructure	58.1	14 ●	6.2.1 Labor productivity growth, %	-0.8	80 ○
3.1 Information and communication technologies (ICTs)	88.8	12 ●	6.2.2 New businesses/th pop. 15-64	3.0	48
3.1.1 ICT access*	87.3	13 ●	6.2.3 Software spending, % GDP	0.3	40
3.1.2 ICT use*	83.7	12 ●	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	5.6	51
3.1.3 Government's online service*	90.0	15	6.2.5 High-tech manufacturing, %	26.3	46
3.1.4 E-participation*	94.0	16	6.3 Knowledge diffusion	31.3	32
3.2 General infrastructure	52.9	7 ●◆	6.3.1 Intellectual property receipts, % total trade	1.1	19
3.2.1 Electricity output, GWh/mn pop.	14,120.8	8 ●	6.3.2 Production and export complexity	43.6	62 ◇
3.2.2 Logistics performance*	88.6	11 ●◆	6.3.3 High-tech exports, % total trade	9.4	17
3.2.3 Gross capital formation, % GDP	27.7	30	6.3.4 ICT services exports, % total trade	2.0	58
3.3 Ecological sustainability	32.7	51	 Creative outputs	33.8	40
3.3.1 GDP/unit of energy use	10.1	66	7.1 Intangible assets	33.1	55
3.3.2 Environmental performance*	55.6	40	7.1.1 Trademarks by origin/bn PPP\$ GDP	8.1	115 ○◇
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	2.8	32	7.1.2 Global brand value, top 5,000, % GDP	133.4	14
 Market sophistication	56.7	26	7.1.3 Industrial designs by origin/bn PPP\$ GDP	0.1	111 ○
4.1 Credit	50.6	28	7.1.4 ICTs and organizational model creation†	67.3	24
4.1.1 Ease of getting credit*	70.0	44	7.2 Creative goods and services	50.5	2 ●◆
4.1.2 Domestic credit to private sector, % GDP	77.6	39	7.2.1 Cultural and creative services exports, % total trade	n/a	n/a
4.1.3 Microfinance gross loans, % GDP	n/a	n/a	7.2.2 National feature films/mn pop. 15-69	10.6	18
4.2 Investment	41.1	34	7.2.3 Entertainment and media market/th pop. 15-69	25.9	25
4.2.1 Ease of protecting minority investors*	80.0	13 ◆	7.2.4 Printing and other media, % manufacturing	1.4	30
4.2.2 Market capitalization, % GDP	58.0	29	7.2.5 Creative goods exports, % total trade	7.2	6 ●◆
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	0.1	20	7.3 Online creativity	18.4	64 ◇
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	0.1	18	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	10.6	38
4.3 Trade, diversification, and market scale	78.4	34	7.3.2 Country-code TLDs/th pop. 15-69	7.8	44
4.3.1 Applied tariff rate, weighted avg., %	3.9	73	7.3.3 Wikipedia edits/mn pop. 15-69	46.4	71 ◇
4.3.2 Domestic industry diversification	92.9	43	7.3.4 Mobile app creation/bn PPP\$ GDP	9.1	50
4.3.3 Domestic market scale, bn PPP\$	647.7	33			

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

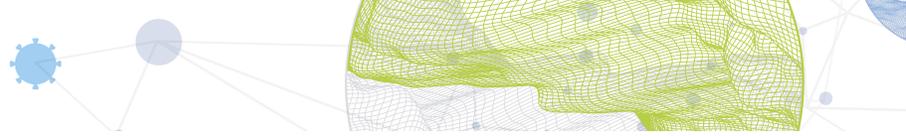
The following tables list data that are either missing or outdated for the United Arab Emirates.

Missing data for the United Arab Emirates

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.2	Firms offering formal training, %	n/a	2019	World Bank
5.2.3	GERD financed by abroad, % GDP	n/a	2018	UNESCO Institute for Statistics
7.2.1	Cultural and creative services exports, % total trade	n/a	2019	World Trade Organization

Outdated data for the United Arab Emirates

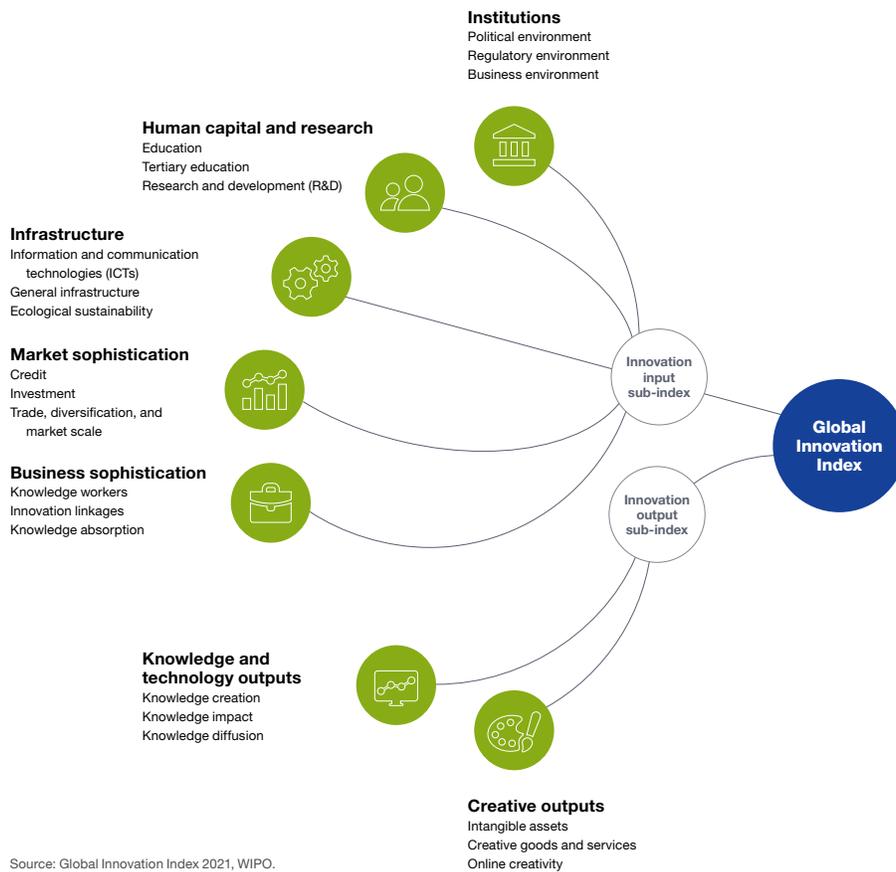
Code	Indicator name	Economy year	Model year	Source
2.2.3	Tertiary inbound mobility, %	2016	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.3	GERD performed by business, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	2014	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.5	Females employed w/advanced degrees, %	2018	2019	International Labour Organization
5.3.5	Research talent, % in businesses	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators



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.