EU-GCC Dialogue on Economic Diversification

A Project funded by the European Union

GCC countries - Global Innovation Index 2020 Rankings






A project implemented by
GFA Consulting Group GmbH
Centre for European Policy studies
DMI Associates

Content

- The Global Innovation Index (GII) – Role in policymaking
- Innovation definition and Index methodology
- Framework of the Global Innovation Index 2020
- 2020 GII Pillars ranking comparison across GCC countries
- GII Score and Rank trends
- Bahrain
- Kuwait
- Oman
- Qatar
- Saudi Arabia
- United Arab Emirates
- Key areas where EU can support the GCC economic diversification processes

The Global Innovation Index:

Role in policymaking

- Innovation is widely recognized as a central driver of economic growth and development. The aim of the Global Innovation Index is to provide insightful data on innovation and, in turn, to assist economies in evaluating their innovation performance and making informed innovation policy considerations.
- The GII was created in 2007. The index has an important role in the design of economic policy strategies.
- The GII is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. The 2020 edition of the GII draws on the expertise of its Knowledge Partners: the Confederation of Indian Industry (CII), Dassault Systèmes—The 3DEXPERIENCE Company, and the Brazilian National Confederation of Industry (CNI), as well as an Advisory Board of eminent experts. For the tenth consecutive year, the Joint Research Centre (JRC) of the European Commission audited the GII rankings and associated calculations.

Source: Global Innovation Index https://www.wipo.int/global_innovation_index/en/2020/

Innovation definition and Index methodology

- The GII adopts a **broad notion of innovation**, originally elaborated in the *Oslo Manual* developed by the European Communities and the Organisation for Economic Co-operation and Development (OECD). In its fourth edition, the Oslo Manual 2018 introduces a more general definition of innovation: *An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).* it is important to highlight how these definitions capture the evolution of the way innovation has been perceived and understood over the last two decades.

- Today **innovation capability** is increasingly seen as the ability to exploit new technological combinations; it embraces the notion of incremental innovation and "innovation without research".
- Non-R&D innovative expenditure is an important component of reaping the rewards of technological innovation.

- The **GII 2020 model** includes 131 countries/economies, which represent 93.5% of the world's population and 97.4% of the world's GDP in purchasing power parity current international dollars.

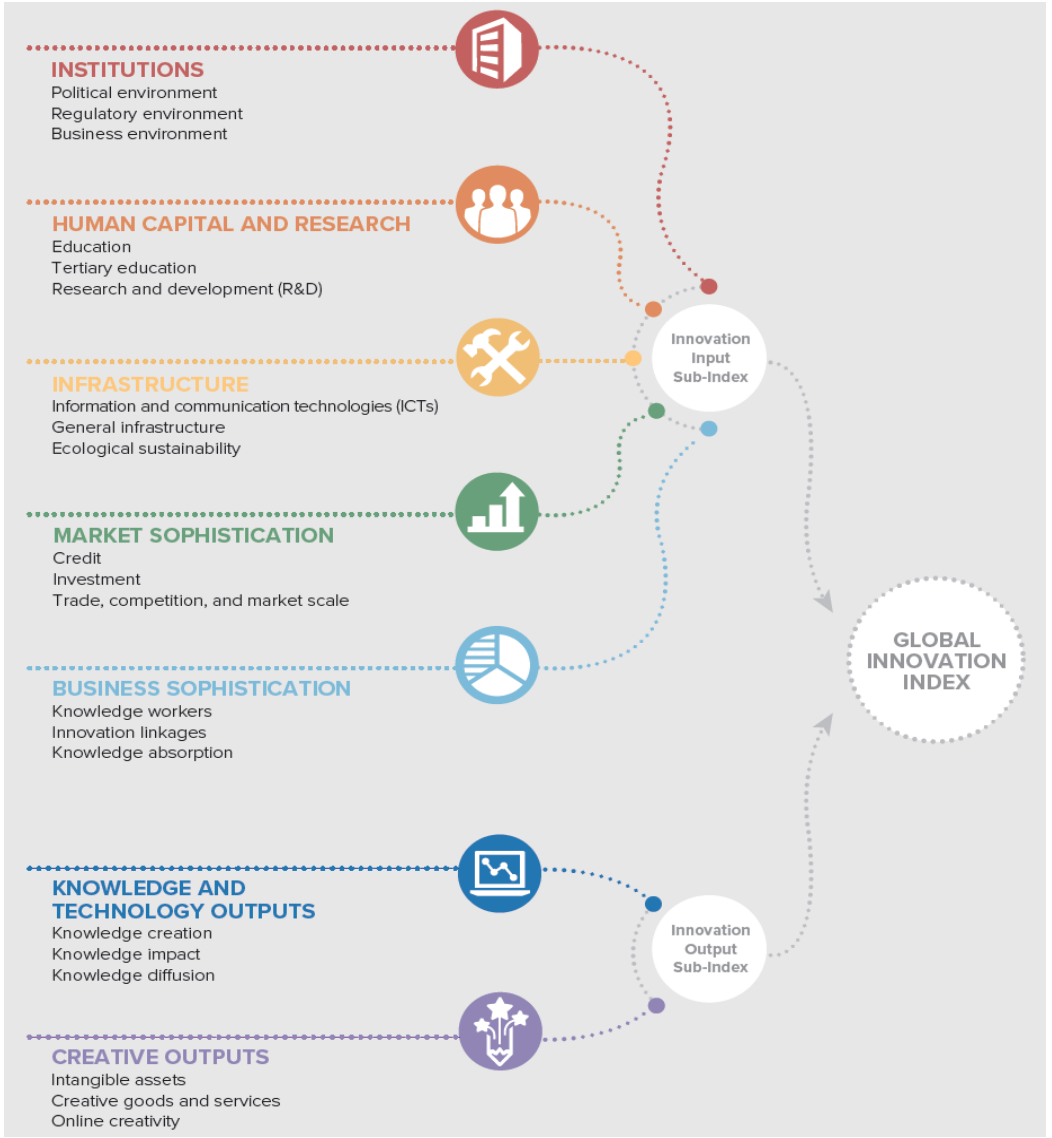
- The 2020 GII includes 80 indicators. Of the 80 indicators, 58 variables are hard data, 18 are composite indicators from third-party data providers, and 4 are survey questions from the World Economic Forum's Executive Opinion Survey (EOS).

Framework of the Global Innovation Index 2020

The GII relies on two sub-indices—the Innovation Input Sub-Index and the Innovation Output Sub-Index—each built around pillars. Three measures are calculated:

1. **Innovation Input** Sub-Index: Five input pillars capture elements of the national economy that enable innovative activities.
2. **Innovation Output** Sub-Index: Innovation outputs are the result of innovative activities within the economy. Although the Output Sub-Index includes only two pillars, it has the same weight in calculating the overall GII scores as the Input Sub-Index.
3. **The overall GII score** is the average of the Input and Output Sub-Indices.

Each pillar is divided into three sub-pillars, and each sub-pillar is composed of individual indicators, totaling 80.



Source: Global Innovation Index Database, Cornell, INSEAD, and WIPO, 2020.

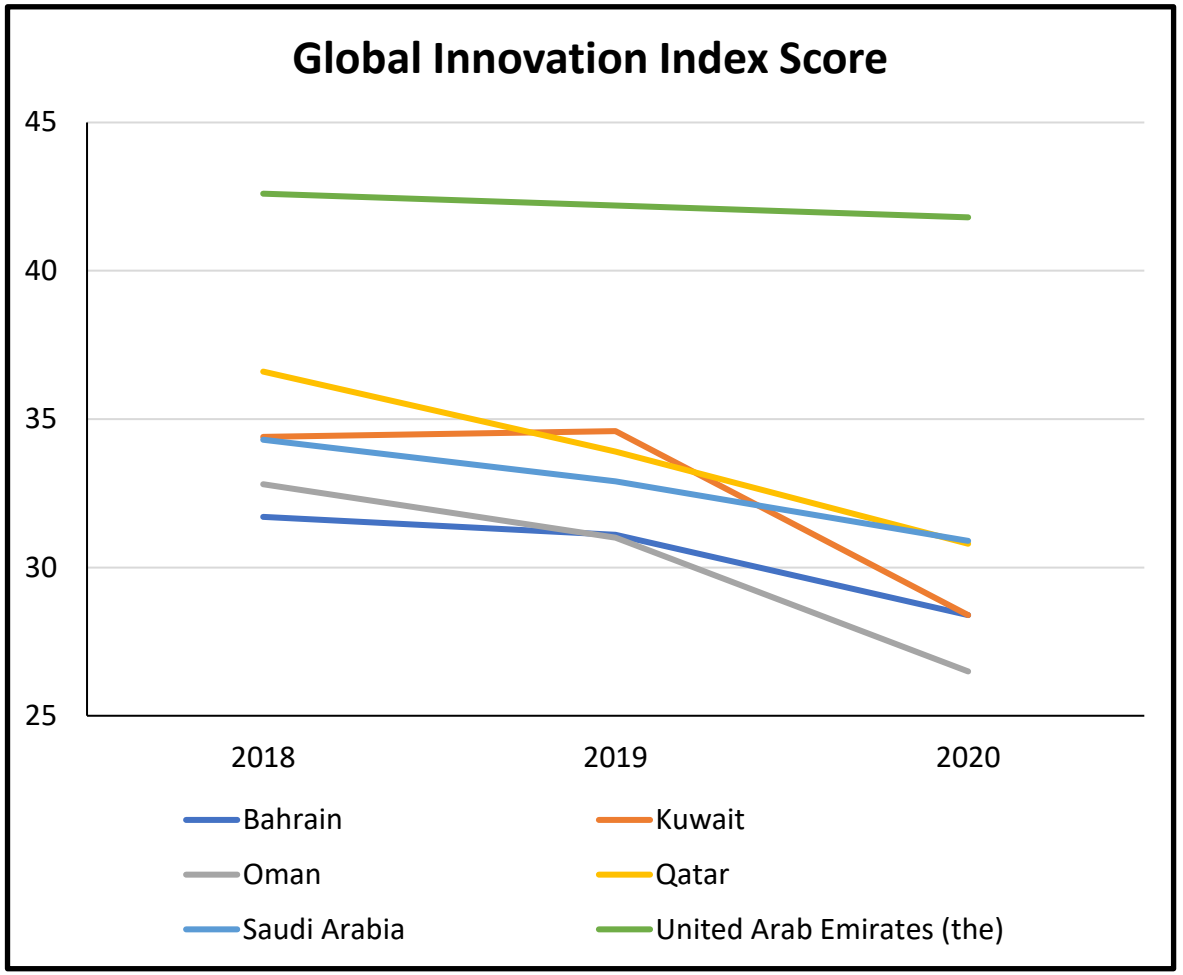
2020 GII Pillars ranking comparison across GCC countries

Highlighted in green are the highest rankings across GCC countries for each pillar.

GII Pillars	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates
Institutions	51	88	70	58	102	28
Human capital and research	84	63	43	83	31	17
Infrastructure	43	55	56	28	57	17
Market sophistication	80	81	104	94	44	30
Business sophistication	86	98	95	77	51	22
Knowledge and technology outputs	86	73	124	85	88	78
Creative outputs	98	88	94	58	69	34

Global Innovation Index Score and Rank trends

GII Score ranges from 0 to 100, where 100 indicates best performer.



GII Rank

Country	2018	2019	2020
United Arab Emirates	38	36	34
Saudi Arabia	61	68	66
Qatar	51	65	70
Kuwait	60	60	78
Bahrain	72	78	79
Oman	69	80	84

Note: The GII methodology is updated every year, with some of the indicators being calculated differently, therefore the comparison is approximate.

Bahrain - 2020 Rank: 79 out of 131 countries

GII Pillars Innovation Inputs	Bahrain
Institutions	**51**
Political environment	60
Regulatory environment	40
Business environment	56
Human capital and research	**84**
Education	82
Tertiary education	64
Research and development (R&D)	87
Infrastructure	**43**
Information and communication technologies (ICTs)	36
General infrastructure	12
Ecological sustainability	85
Market sophistication	**80**
Credit	56
Investment	83
Trade, competition, and market scale	76
Business sophistication	**86**
Knowledge workers	101
Innovation linkages	35
Knowledge absorption	125

GII Pillars Innovation Outputs	Bahrain
Knowledge and technology outputs	**86**
Knowledge creation	123
Knowledge impact	71
Knowledge diffusion	73
Creative outputs	**98**
Intangible assets	102
Creative goods and services	89
Online creativity	77

Bahrain – Strengths in the high-income countries group

Pillar	Sub-pillar	Indicator
Infrastructure	General Infrastructure	Electricity output
Infrastructure	General Infrastructure	Gross capital formation

Kuwait - 2020 Rank: 78 out of 131 countries

GII Pillars Innovation Inputs	Kuwait
Institutions	**88**
Political environment	82
Regulatory environment	97
Business environment	90
Human capital and research	**63**
Education	49
Tertiary education	44
Research and development (R&D)	88
Infrastructure	**55**
Information and communication technologies (ICTs)	51
General infrastructure	35
Ecological sustainability	75
Market sophistication	**81**
Credit	65
Investment	73
Trade, competition, and market scale	83
Business sophistication	**98**
Knowledge workers	102
Innovation linkages	79
Knowledge absorption	84

GII Pillars Innovation Outputs	Kuwait
Knowledge and technology outputs	**73**
Knowledge creation	109
Knowledge impact	83
Knowledge diffusion	46
Creative outputs	**88**
Intangible assets	76
Creative goods and services	101
Online creativity	76

Kuwait – Strengths in the high-income countries group

Pillar	Sub-pillar	Indicator
Human capital and research	Education	Pupil-teacher ratio, secondary
Infrastructure	General Infrastructure	Electricity output

Oman - 2020 Rank: 84 out of 131 countries

GII Pillars Innovation Inputs	Oman
Institutions	**70**
Political environment	52
Regulatory environment	94
Business environment	73
Human capital and research	**43**
Education	24
Tertiary education	12
Research and development (R&D)	80
Infrastructure	**56**
Information and communication technologies (ICTs)	47
General infrastructure	29
Ecological sustainability	97
Market sophistication	**104**
Credit	99
Investment	118
Trade, competition, and market scale	51
Business sophistication	**95**
Knowledge workers	90
Innovation linkages	59
Knowledge absorption	118

GII Pillars Innovation Outputs	Oman
Knowledge and technology outputs	**124**
Knowledge creation	107
Knowledge impact	121
Knowledge diffusion	114
Creative outputs	**94**
Intangible assets	82
Creative goods and services	99
Online creativity	94

Oman - Strengths in the high-income countries group

Pillar	Sub-pillar	Indicator
Human capital and research	Education	Government funding per secondary student
Human capital and research	Tertiary education	Graduates in science and engineering
Infrastructure	General Infrastructure	Gross capital formation

Qatar - 2020 Rank: 70 out of 131 countries

GII Pillars Innovation Inputs	Qatar
Institutions	**58**
Political environment	42
Regulatory environment	63
Business environment	98
Human capital and research	**83**
Education	106
Tertiary education	46
Research and development (R&D)	66
Infrastructure	**28**
Information and communication technologies (ICTs)	46
General infrastructure	2
Ecological sustainability	91
Market sophistication	**94**
Credit	75
Investment	122
Trade, competition, and market scale	54
Business sophistication	**77**
Knowledge workers	119
Innovation linkages	46
Knowledge absorption	51

GII Pillars Innovation Outputs	Qatar
Knowledge and technology outputs	**85**
Knowledge creation	93
Knowledge impact	59
Knowledge diffusion	104
Creative outputs	**58**
Intangible assets	46
Creative goods and services	44
Online creativity	84

Qatar - Strengths in the high-income countries group

Pillar	Sub-pillar	Indicator
Human capital and research	Tertiary education	Tertiary level inbound mobility
Infrastructure	General Infrastructure	
Infrastructure	General Infrastructure	Electricity output
Creative outputs	Creative goods and services	National feature films produced

Note: A blank indicator indicates a high score for the entire sub-pillar.

Saudi Arabia - 2020 Rank: 66 out of 131 countries

GII Pillars Innovation Inputs	Saudi Arabia
Institutions	**102**
Political environment	70
Regulatory environment	86
Business environment	129
Human capital and research	**31**
Education	26
Tertiary education	57
Research and development (R&D)	27
Infrastructure	**57**
Information and communication technologies (ICTs)	41
General infrastructure	39
Ecological sustainability	90
Market sophistication	**44**
Credit	67
Investment	62
Trade, competition, and market scale	26
Business sophistication	**51**
Knowledge workers	58
Innovation linkages	36
Knowledge absorption	69

GII Pillars Innovation Outputs	Saudi Arabia
Knowledge and technology outputs	**88**
Knowledge creation	64
Knowledge impact	87
Knowledge diffusion	119
Creative outputs	**69**
Intangible assets	51
Creative goods and services	86
Online creativity	75

Saudi Arabia – Strengths in the high-income countries group

Pillar	Sub-pillar	Indicator
Market sophistication	Investment	Ease of protecting minority investors
Market sophistication	Trade, competition, and market scale	Domestic market scale

United Arab Emirates - 2020 Rank: 34 out of 131 countries

GII Pillars Innovation Inputs	United Arab Emirates
Institutions	**28**
Political environment	21
Regulatory environment	22
Business environment	61
Human capital and research	**17**
Education	17
Tertiary education	2
Research and development (R&D)	28
Infrastructure	**17**
Information and communication technologies (ICTs)	11
General infrastructure	5
Ecological sustainability	53
Market sophistication	**30**
Credit	27
Investment	45
Trade, competition, and market scale	39
Business sophistication	**22**
Knowledge workers	27
Innovation linkages	26
Knowledge absorption	16

GII Pillars Innovation Outputs	United Arab Emirates
Knowledge and technology outputs	**78**
Knowledge creation	104
Knowledge impact	72
Knowledge diffusion	71
Creative outputs	**34**
Intangible assets	42
Creative goods and services	2
Online creativity	61

United Arab Emirates – Strengths in the high-income countries group

Pillar	Sub-pillar	Indicator
Institutions	Regulatory environment	Cost of redundancy dismissal, salary weeks
Human capital and research	Tertiary education	
Human capital and research	Tertiary education	Tertiary level inbound mobility
Infrastructure	General infrastructure	
Infrastructure	General Infrastructure by itself, and also :	Logistics performance
Market sophistication	Investment	Ease of protecting minority investors
Business sophistication	Knowledge workers	GERD financed by business enterprise
Business sophistication	Innovation linkages	State of cluster development
Business sophistication	Knowledge absorption	Research talent in business enterprise
Creative outputs	Creative goods and services	
Creative outputs	Creative goods and services	Creative goods exports

Note: A blank indicator indicates a high score for the entire sub-pillar.

Key areas where EU can support the GCC economic diversification processes

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates
Human capital and research	Number of graduates in science and engineering, number of researchers	Research and Development, number of researchers	Research and Development, number of researchers	Number of researchers		
Infrastructure	Logistics performance, Ecological sustainability, Environmental performance	Information and communication technologies (ICTs): ICT use, online e-participation, Logistics performance, Ecological sustainability, Environmental performance, ISO 14001 environmental certificates	ICT use, Ecological sustainability, Environmental performance	Information and communication technologies (ICTs) - Online e-participation, Ecological sustainability, Environmental performance	Information and communication technologies (ICTs): ICT use, online e-participation, Logistics performance, Ecological sustainability, Environmental performance, ISO 14001 environmental certificates	
Business sophistication	Knowledge workers - Employment in knowledge-intensive services, University/industry research collaboration, Knowledge absorption - ICT services imports, Research talent in business enterprise	Knowledge workers - Employment in knowledge-intensive services, Knowledge absorption - ICT services imports	Knowledge workers - Employment in knowledge-intensive services, Knowledge absorption - ICT services imports, Research talent in business enterprise	Knowledge workers - Employment in knowledge-intensive services, Research talent in business enterprise	Knowledge workers - Employment in knowledge-intensive services	
Knowledge and technology outputs	: Knowledge creation - Scientific and technical publications, High-tech and medium high-tech manufacturing, high-tech exports	Knowledge creation - Patent applications by origin, international patent applications, Scientific and technical publications, Knowledge impact (ISO 9001 quality certificates), high-tech exports	Knowledge creation – international patent applications, Scientific and technical publications, Knowledge diffusion - High-tech exports	Knowledge creation - Patent applications by origin, international patent applications, Scientific and technical publications, Knowledge impact - ISO 9001 quality certificates, Knowledge diffusion - High-tech exports	Knowledge impact - ISO 9001 quality certificates, Knowledge diffusion - High-tech exports, ICT services exports	Knowledge creation - international patent applications, Utility model applications by origin, Scientific and technical publications, Knowledge impact - ISO 9001 quality certificates, Knowledge diffusion - High-tech exports
Creative outputs	Trademark applications, creative goods and services - cultural and creative services exports	Intangible assets - Trademark applications, ICTs and organizational model creation, Creative goods and services - National feature films produced, Entertainment and media market, Online creativity - number of domains	Intangible assets - Trademark applications, ICTs and organizational model creation, Creative goods and services - National feature films produced, Entertainment and media market, Online creativity – number of domains	Intangible assets - Trademark applications, Online creativity – number of domains	Intangible assets - Trademark applications, ICTs and organizational model creation, Creative goods and services - National feature films produced, Entertainment and media market, Online creativity – number of domains	Trademark applications

Cornell SC Johnson College of Business

INSEAD

WIPO WORLD INTELLECTUAL PROPERTY ORGANIZATION

GLOBAL INNOVATION INDEX 2020

Who Will Finance Innovation?

Report and data available at:

https://www.globalinnovationindex.org/gii-2020-report

CII Confederation of Indian Industry

DASSAULT SYSTEMES

CNI

EU-GCC Dialogue on Economic Diversification

A Project funded by the European Union

Authors:

Douglas Aitkenhead

Team Leader

daitkenhead@eugcc.eu

Daniela Stratulativ

Key Expert – Trade and Foreign Direct Investment

dstratulativ@eugcc.eu

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of the authors and do not necessarily reflect the views of the European Union.