



Global Innovation Index 2021



ANGOLA

132nd Angola ranks 132nd 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 Angola 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 Angola in the GII 2021 is between ranks 130 and 132.

Rankings for Angola (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	132	131	131
2020			
2019			

- Angola performs equally in innovation inputs and outputs in 2021.
- This year Angola ranks 131st in innovation inputs and was not ranked last year.
- As for innovation outputs, Angola ranks 131st.

34th Angola ranks 34th among the 34 lower middle-income group economies.

27th Angola ranks 27th among the 27 economies in Sub-Saharan Africa.

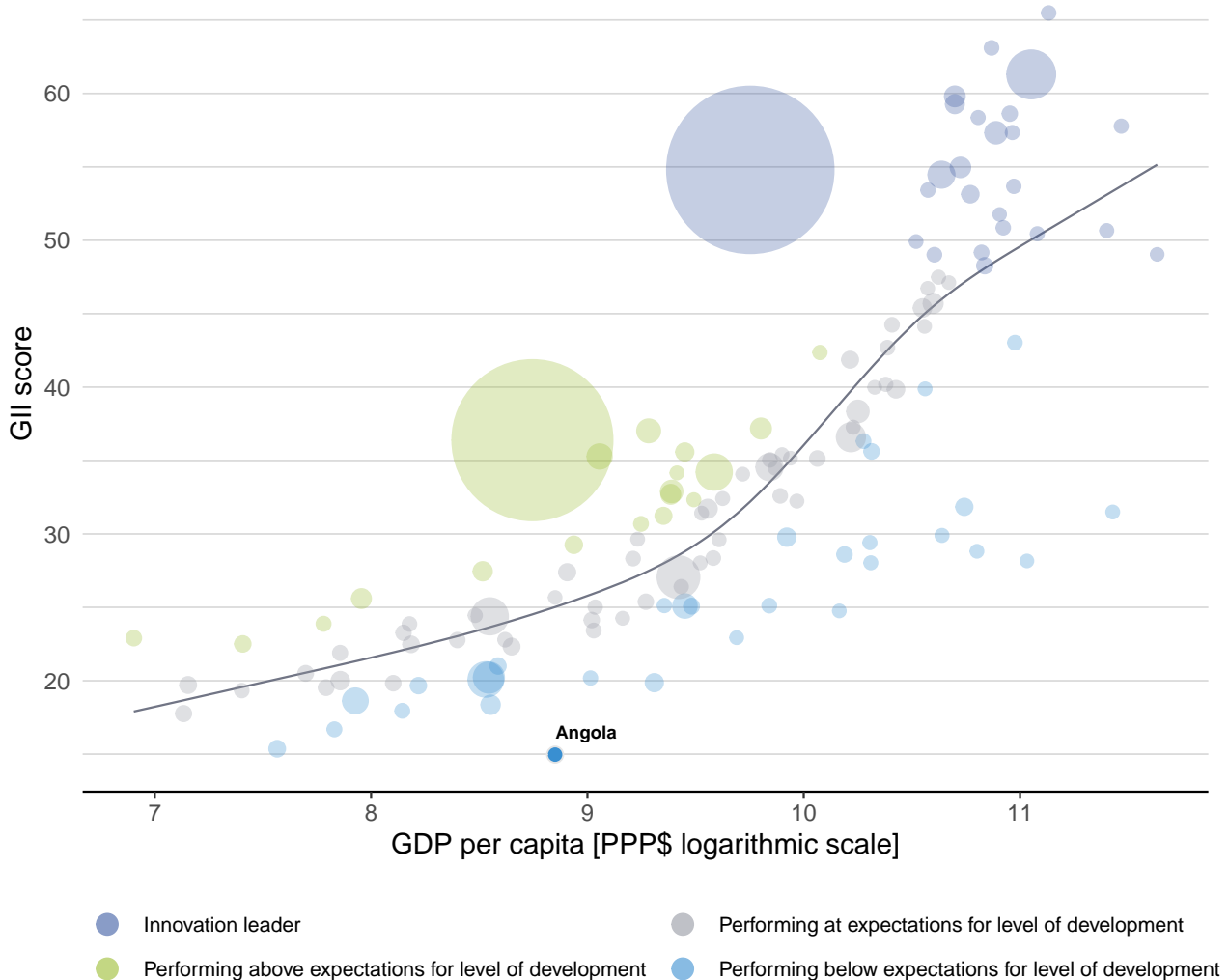


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Angola's performance is below expectations for its level of development.

The positive relationship between innovation and development



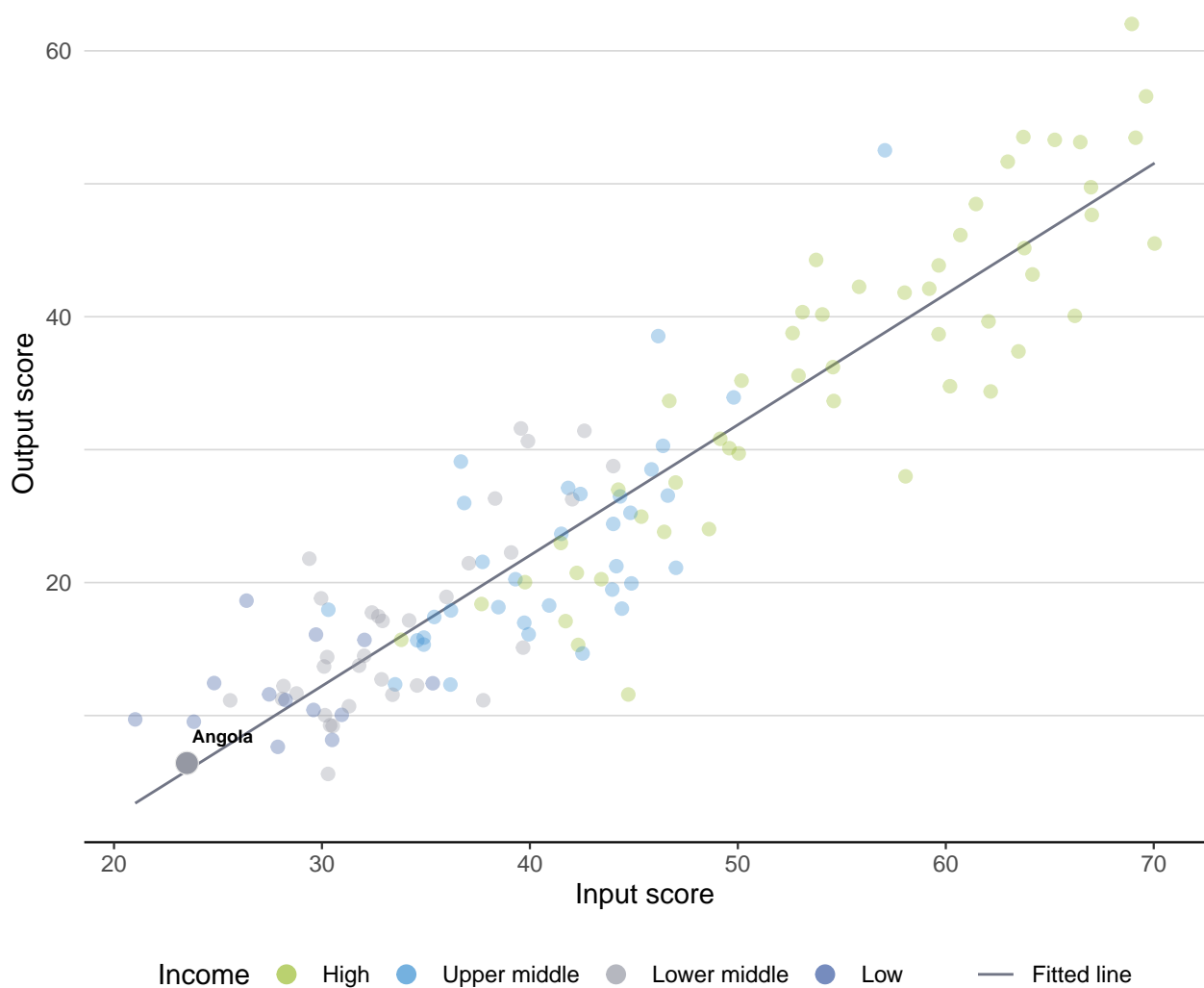


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Angola produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance





BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

The seven GII pillar scores for Angola

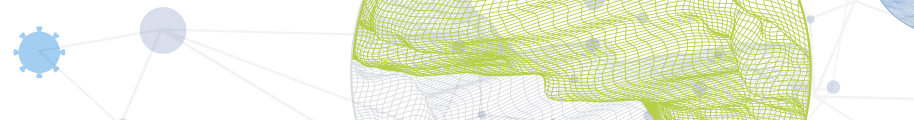


Lower middle-income group economies

Angola performs below the lower middle-income group average in all GII pillars.

Sub-Saharan Africa

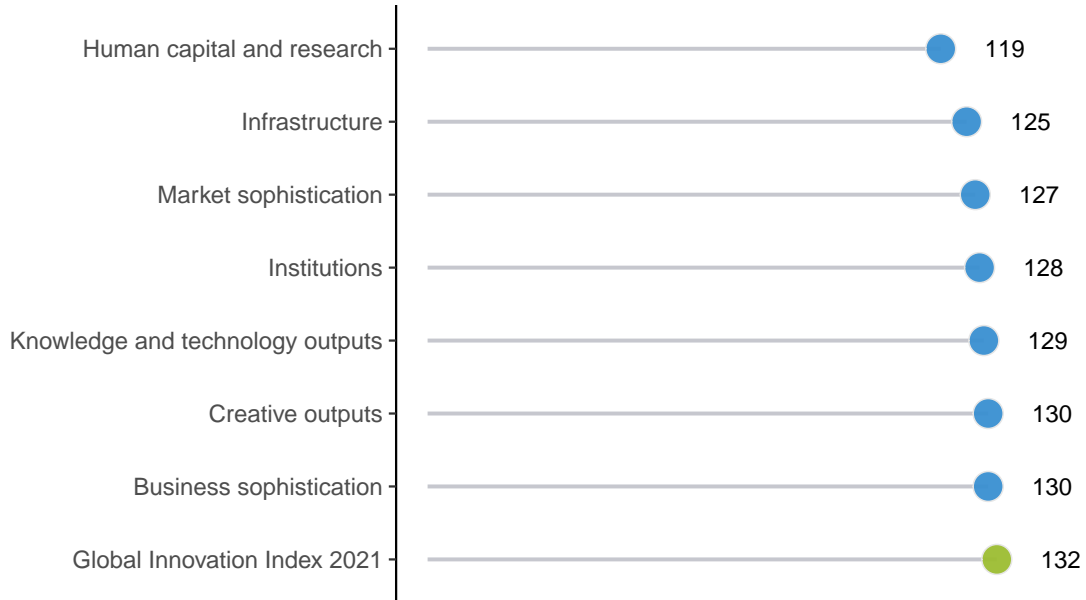
Angola performs below the regional average in all GII pillars.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Angola performs best in Human capital and research and its weakest performance is in Business sophistication and Creative outputs.

The seven GII pillar ranks for Angola



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 Angola in the GII 2021.

Strengths and weaknesses for Angola

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	75	1.3	Business environment	131
2.1.1	Expenditure on education, % GDP	88	1.3.2	Ease of resolving insolvency	129
3.2.3	Gross capital formation, % GDP	74	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
3.3	Ecological sustainability	94	2.3.4	QS university ranking, top 3	74
3.3.1	GDP/unit of energy use	47	3.2.2	Logistics performance	125
4.3.1	Applied tariff rate, weighted avg., %	96	4.1	Credit	131
4.3.3	Domestic market scale, bn PPP\$	62	4.1.1	Ease of getting credit	131
5.1.2	Firms offering formal training, %	66	5.2.1	University-industry R&D collaboration	126
5.3.1	Intellectual property payments, % total trade	62	5.2.5	Patent families/bn PPP\$ GDP	100
6.3.1	Intellectual property receipts, % total trade	83	6.1	Knowledge creation	132
7.2.4	Printing and other media, % manufacturing	10	6.1.2	PCT patents by origin/bn PPP\$ GDP	98
			6.1.4	Scientific and technical articles/bn PPP\$ GDP	131
			7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	132

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
131	131	Lower middle	SSF	32.9	216.6	6,978	n/a

	Score/ Value Rank		Score/ Value Rank
 Institutions	42.2 128	 Business sophistication	13.1 130
1.1 Political environment	36.9 126	5.1 Knowledge workers	15.9 [109]
1.1.1 Political and operational stability*	58.9 100	5.1.1 Knowledge-intensive employment, %	⊙ 11.1 107
1.1.2 Government effectiveness*	25.8 128	5.1.2 Firms offering formal training, %	⊙ 23.5 66 ●
1.2 Regulatory environment	50.0 105	5.1.3 GERD performed by business, % GDP	n/a n/a
1.2.1 Regulatory quality*	20.1 124	5.1.4 GERD financed by business, %	n/a n/a
1.2.2 Rule of law*	18.9 125	5.1.5 Females employed w/advanced degrees, %	⊙ 1.6 108
1.2.3 Cost of redundancy dismissal	17.9 75 ●	5.2 Innovation linkages	11.0 127
1.3 Business environment	39.7 131	5.2.1 University-industry R&D collaboration†	17.4 126
1.3.1 Ease of starting a business*	79.4 111	5.2.2 State of cluster development and depth†	27.1 125
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	⊙ 0.0 106
		5.2.5 Patent families/bn PPP\$ GDP	⊙ 0.0 100
 Human capital and research	12.3 119	5.3 Knowledge absorption	12.5 129
2.1 Education	29.9 [113]	5.3.1 Intellectual property payments, % total trade	0.6 62 ●
2.1.1 Expenditure on education, % GDP	⊙ 3.4 88 ●	5.3.2 High-tech imports, % total trade	⊙ 2.9 125
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a n/a	5.3.3 ICT services imports, % total trade	0.5 103
2.1.3 School life expectancy, years	⊙ 9.6 109	5.3.4 FDI net inflows, % GDP	-5.7 128
2.1.4 PISA scales in reading, maths and science	n/a n/a	5.3.5 Research talent, % in businesses	n/a n/a
2.1.5 Pupil-teacher ratio, secondary	⊙ 26.8 111	 Knowledge and technology outputs	4.7 129
2.2 Tertiary education	6.7 119	6.1 Knowledge creation	0.4 132
2.2.1 Tertiary enrolment, % gross	⊙ 9.3 116	6.1.1 Patents by origin/bn PPP\$ GDP	0.0 127
2.2.2 Graduates in science and engineering, %	⊙ 12.0 103	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0 98
2.2.3 Tertiary inbound mobility, %	n/a n/a	6.1.3 Utility models by origin/bn PPP\$ GDP	⊙ 0.0 71
2.3 Research and development (R&D)	0.1 119	6.1.4 Scientific and technical articles/bn PPP\$ GDP	0.4 131
2.3.1 Researchers, FTE/mn pop.	⊙ 18.8 106	6.1.5 Citable documents H-index	1.3 130
2.3.2 Gross expenditure on R&D, % GDP	⊙ 0.0 113	6.2 Knowledge impact	12.4 [121]
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0 41	6.2.1 Labor productivity growth, %	-4.1 116
2.3.4 QS university ranking, top 3*	0.0 74	6.2.2 New businesses/th pop. 15-64	n/a n/a
		6.2.3 Software spending, % GDP	n/a n/a
 Infrastructure	22.3 125	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	0.4 127
3.1 Information and communication technologies (ICTs)	33.0 121	6.2.5 High-tech manufacturing, %	⊙ 3.4 105
3.1.1 ICT access*	26.1 125	6.3 Knowledge diffusion	1.3 130
3.1.2 ICT use*	12.0 126	6.3.1 Intellectual property receipts, % total trade	0.0 83 ●
3.1.3 Government's online service*	48.8 109	6.3.2 Production and export complexity	4.4 120
3.1.4 E-participation*	45.2 108	6.3.3 High-tech exports, % total trade	⊙ 0.2 108
3.2 General infrastructure	13.0 123	6.3.4 ICT services exports, % total trade	0.1 127
3.2.1 Electricity output, GWh/mn pop.	380.9 113	 Creative outputs	8.1 [130]
3.2.2 Logistics performance*	0.0 125	7.1 Intangible assets	8.1 [131]
3.2.3 Gross capital formation, % GDP	21.5 74 ●	7.1.1 Trademarks by origin/bn PPP\$ GDP	11.7 108
3.3 Ecological sustainability	20.9 94 ●	7.1.2 Global brand value, top 5,000, % GDP	n/a n/a
3.3.1 GDP/unit of energy use	12.2 47 ●	7.1.3 Industrial designs by origin/bn PPP\$ GDP	n/a n/a
3.3.2 Environmental performance*	29.7 121	7.1.4 ICTs and organizational model creation†	n/a n/a
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.1 129	7.2 Creative goods and services	11.4 [75]
		7.2.1 Cultural and creative services exports, % total trade	n/a n/a
 Market sophistication	27.6 127	7.2.2 National feature films/mn pop. 15-69	0.3 103
4.1 Credit	3.5 131	7.2.3 Entertainment and media market/th pop. 15-69	n/a n/a
4.1.1 Ease of getting credit*	5.0 131	7.2.4 Printing and other media, % manufacturing	⊙ 2.3 10
4.1.2 Domestic credit to private sector, % GDP	14.4 120	7.2.5 Creative goods exports, % total trade	⊙ 0.0 127
4.1.3 Microfinance gross loans, % GDP	0.0 72	7.3 Online creativity	5.1 124
4.2 Investment	32.0 [63]	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	0.0 132
4.2.1 Ease of protecting minority investors*	32.0 120	7.3.2 Country-code TLDs/th pop. 15-69	0.0 128
4.2.2 Market capitalization, % GDP	n/a n/a	7.3.3 Wikipedia edits/mn pop. 15-69	19.5 124
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	n/a n/a	7.3.4 Mobile app creation/bn PPP\$ GDP	n/a n/a
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	n/a n/a		
4.3 Trade, diversification, and market scale	47.3 119		
4.3.1 Applied tariff rate, weighted avg., %	6.5 96 ●		
4.3.2 Domestic industry diversification	⊙ 33.3 110		
4.3.3 Domestic market scale, bn PPP\$	216.6 62 ●		

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 Angola.

Missing data for Angola

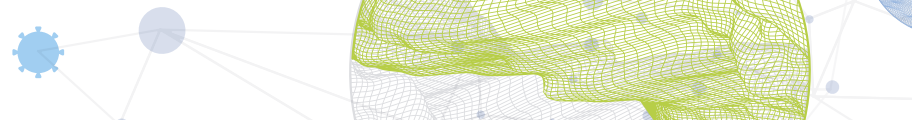
Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.2.3	Tertiary inbound mobility, %	n/a	2018	UNESCO Institute for Statistics
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
4.2.3	Venture capital investors, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
4.2.4	Venture capital recipients, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
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
6.2.2	New businesses/th pop. 15–64	n/a	2018	World Bank
6.2.3	Software spending, % GDP	n/a	2020	IHS Markit
7.1.2	Global brand value, top 5,000, % GDP	n/a	2020	Brand Finance
7.1.3	Industrial designs by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
7.1.4	ICTs and organizational model creation	n/a	2018	World Economic Forum
7.2.1	Cultural and creative services exports, % total trade	n/a	2019	World Trade Organization
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC



Code	Indicator name	Economy year	Model year	Source
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2020	App Annie

Outdated data for Angola

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2010	2017	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2011	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2016	2019	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2016	2018	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2015	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.1	Researchers, FTE/mn pop.	2016	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2016	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.3.2	Domestic industry diversification	2017	2018	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2014	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2010	2019	World Bank
5.1.5	Females employed w/advanced degrees, %	2014	2019	International Labour Organization
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	2019	2020	Refinitiv
5.3.2	High-tech imports, % total trade	2018	2019	United Nations, COMTRADE
6.1.3	Utility models by origin/bn PPP\$ GDP	2018	2019	World Intellectual Property Organization
6.2.5	High-tech manufacturing, %	2017	2018	United Nations Industrial Development Organization
6.3.3	High-tech exports, % total trade	2018	2019	United Nations, COMTRADE



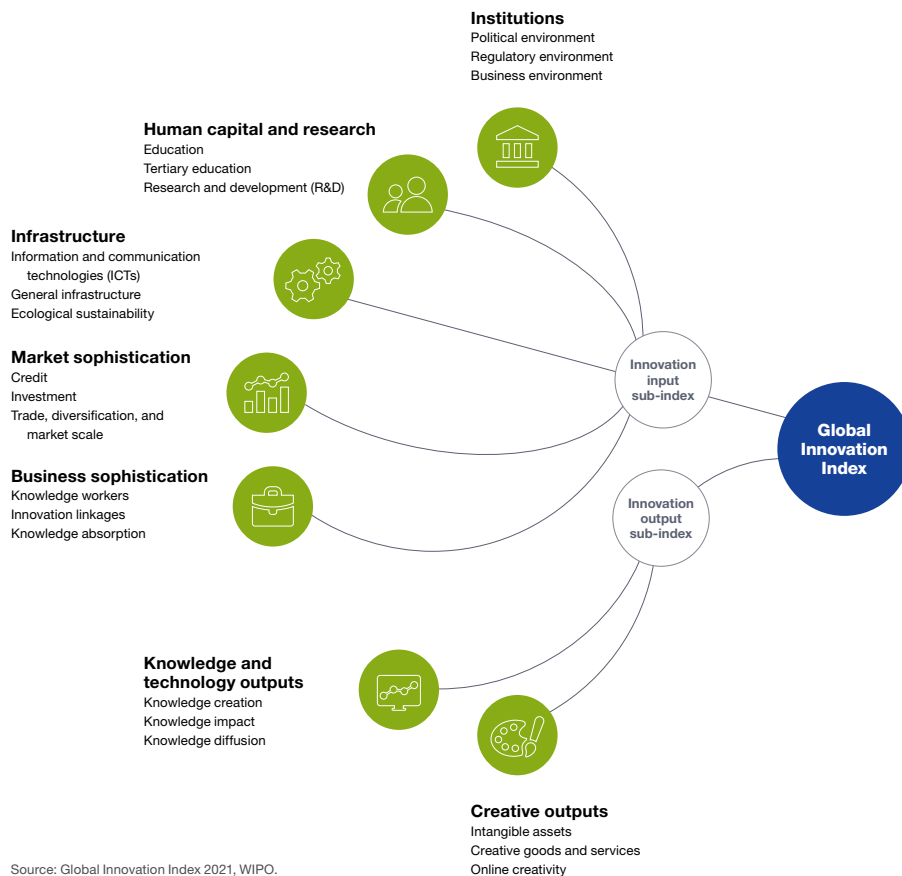
Code	Indicator name	Economy year	Model year	Source
7.2.4	Printing and other media, % manufacturing	2015	2018	United Nations Industrial Development Organization
7.2.5	Creative goods exports, % total trade	2018	2019	United Nations, COMTRADE



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.