Global Innovation Index 2021

MOZAMBIQUE

122nd Mozambique ranks 122nd 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 Mozambique 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 Mozambique in the GII 2021 is between ranks 115 and 128.

Rankings for Mozambique (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	122	122	118
2020	124	122	125
2019	119	118	114

- Mozambique performs better in innovation outputs than innovation inputs in 2021.
- This year Mozambique ranks 122nd in innovation inputs, the same as last year but lower than 2019.
- As for innovation outputs, Mozambique ranks 118th. This position is higher than last year but lower than 2019.

7th Mozambique ranks 7th among the 13 low-income group economies.

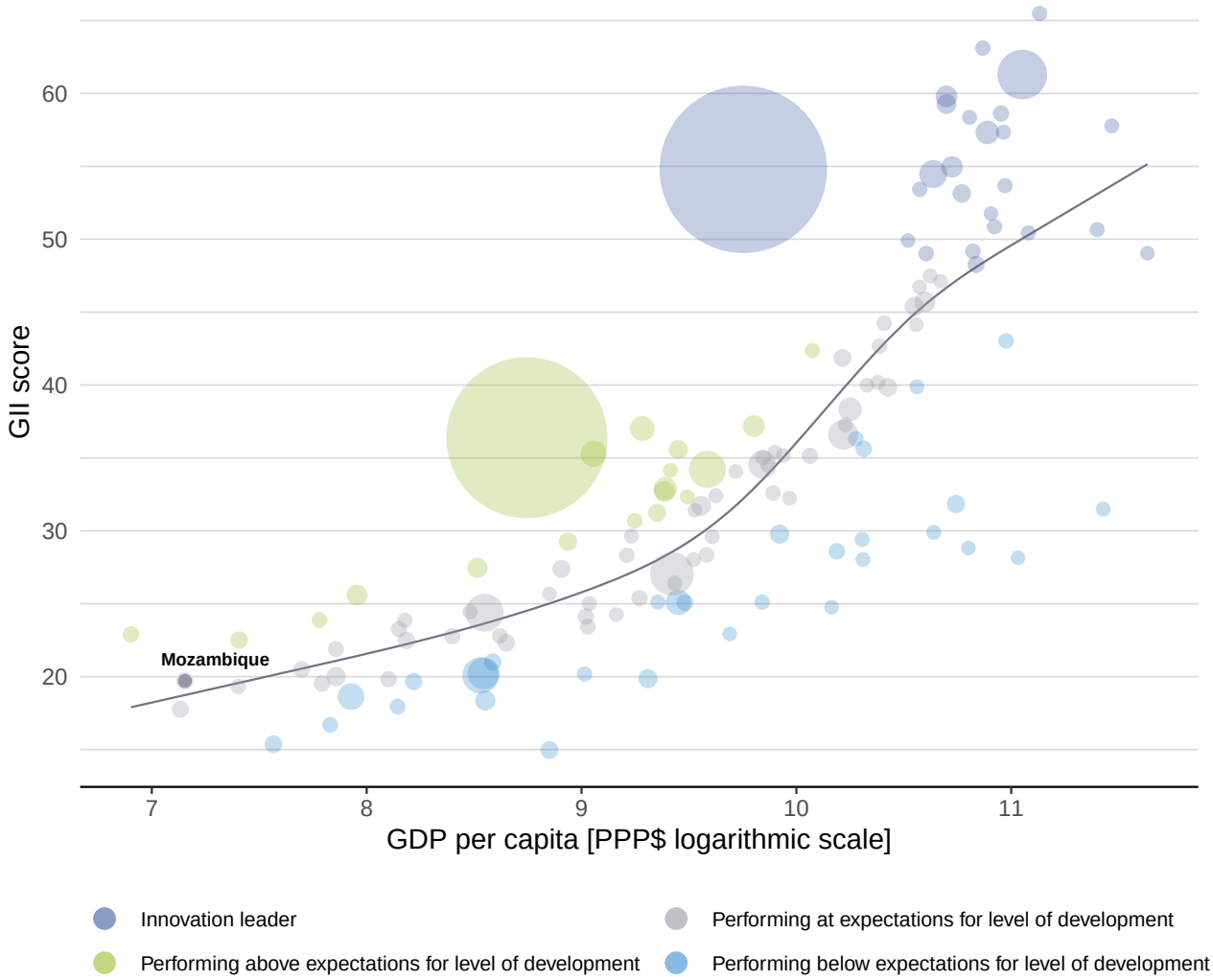
19th Mozambique ranks 19th among the 27 economies in Sub-Saharan Africa.

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, Mozambique's performance is at expectations for its level of development.

The positive relationship between innovation and development

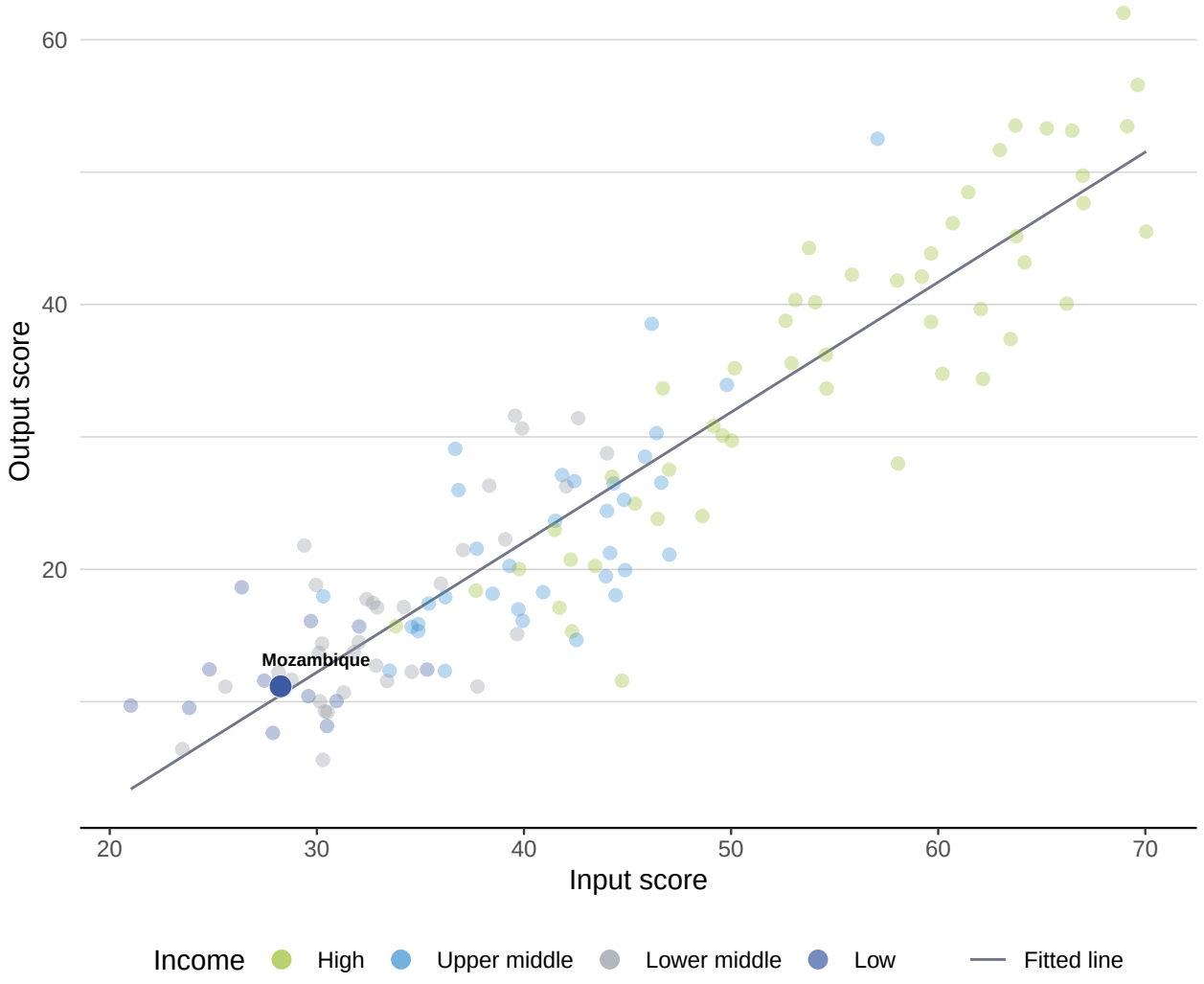


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance



BENCHMARKING AGAINST OTHER LOW-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

The seven GII pillar scores for Mozambique

Low-income group economies

Mozambique performs above the low-income group average in two pillars, namely: Human capital and research; and, Infrastructure.

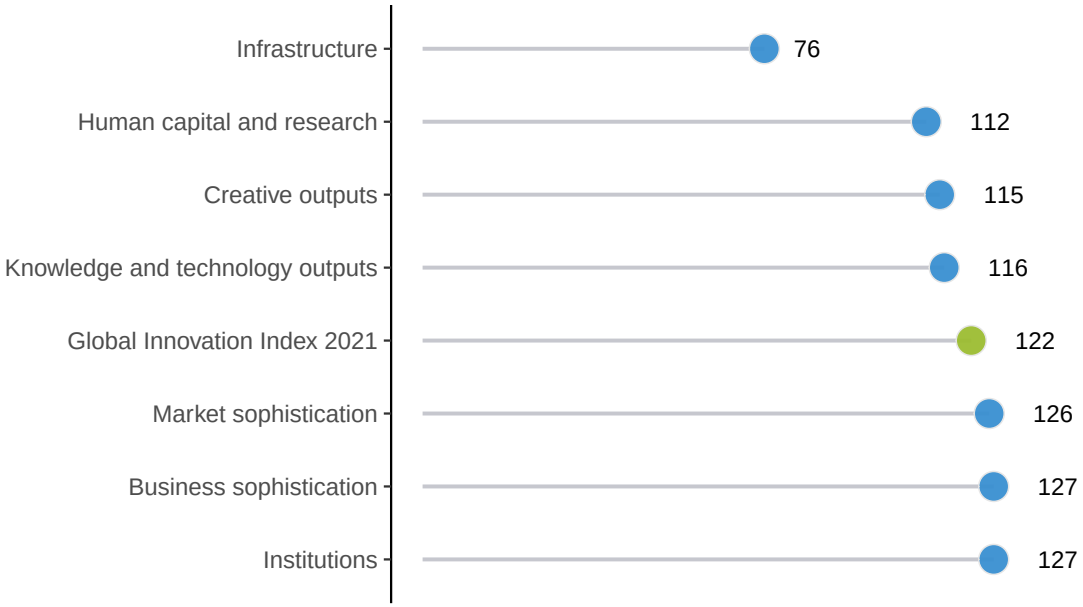
Sub-Saharan Africa

Mozambique performs above the regional average in two pillars, namely: Human capital and research; and, Infrastructure.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Mozambique performs best in Infrastructure and its weakest performance is in Institutions and Business sophistication.

The seven GII pillar ranks for Mozambique



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 Mozambique in the GII 2021.

Strengths and weaknesses for Mozambique

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
2.1	Education	72	2.1.5	Pupil-teacher ratio, secondary	121
2.1.1	Expenditure on education, % GDP	19	2.2	Tertiary education	128
2.1.2	Government funding/pupil, secondary, % GDP/cap	2	2.2.2	Graduates in science and engineering, %	108
3.2	General infrastructure	1	2.3.3	Global corporate R&D investors, top 3, mn US$	41
3.2.3	Gross capital formation, % GDP	1	2.3.4	QS university ranking, top 3	74
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	50	3.3.1	GDP/unit of energy use	121
5.2.3	GERD financed by abroad, % GDP	34	5.1.1	Knowledge-intensive employment, %	121
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	46	5.2.5	Patent families/bn PPP$ GDP	100
5.3.1	Intellectual property payments, % total trade	70	5.3.5	Research talent, % in businesses	86
5.3.4	FDI net inflows, % GDP	5	6.1.2	PCT patents by origin/bn PPP$ GDP	98
6.2.1	Labor productivity growth, %	64	7.1.2	Global brand value, top 5,000, % GDP	80
7.1.1	Trademarks by origin/bn PPP$ GDP	58	7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	129

Mozambique

GII 2021 rank
122

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
118	122	Low	SSF	31.3	40.9	1,279	124

		Score/ Value	Rank	
Institutions		**43.5**	**127**	
1.1	**Political environment**	**40.0**	**120**	
1.1.1	Political and operational stability*	55.4	112	
1.1.2	Government effectiveness*	32.4	120	
1.2	**Regulatory environment**	**31.9**	**126**	◇
1.2.1	Regulatory quality*	24.6	115	
1.2.2	Rule of law*	19.8	122	
1.2.3	Cost of redundancy dismissal	37.5	126	◇
1.3	**Business environment**	**58.5**	**108**	
1.3.1	Ease of starting a business*	69.3	127	◇
1.3.2	Ease of resolving insolvency*	47.8	78	
Human capital and research		**17.3**	**112**	
2.1	**Education**	**48.0**	**72**	● ◆
2.1.1	Expenditure on education, % GDP	5.5	19	● ◆
2.1.2	Government funding/pupil, secondary, % GDP/cap ⏲	40.1	2	● ◆
2.1.3	School life expectancy, years ⏲	10.0	108	
2.1.4	PISA scales in reading, maths and science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary ⏲	36.5	121	○
2.2	**Tertiary education**	**2.2**	**128**	○ ◇
2.2.1	Tertiary enrolment, % gross	7.3	119	
2.2.2	Graduates in science and engineering, %	9.6	108	○ ◇
2.2.3	Tertiary inbound mobility, %	0.4	103	
2.3	**Research and development (R&D)**	**1.6**	**99**	
2.3.1	Researchers, FTE/mn pop. ⏲	43.0	96	
2.3.2	Gross expenditure on R&D, % GDP ⏲	0.3	78	
2.3.3	Global corporate R&D investors, top 3, mn US$	0.0	41	○ ◇
2.3.4	QS university ranking, top 3*	0.0	74	○ ◇
Infrastructure		**38.9**	**76**	◆
3.1	**Information and communication technologies (ICTs)**	**35.4**	**119**	
3.1.1	ICT access*	24.7	128	
3.1.2	ICT use*	12.9	125	
3.1.3	Government's online service*	51.8	102	
3.1.4	E-participation*	52.4	97	
3.2	**General infrastructure**	**67.3**	**1**	● ◆
3.2.1	Electricity output, GWh/mn pop.	564.8	106	
3.2.2	Logistics performance*	n/a	n/a	
3.2.3	Gross capital formation, % GDP	66.0	1	● ◆
3.3	**Ecological sustainability**	**13.9**	**128**	
3.3.1	GDP/unit of energy use	3.9	121	○
3.3.2	Environmental performance*	33.9	106	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.5	84	◆
Market sophistication		**27.8**	**126**	◇
4.1	**Credit**	**13.4**	**126**	
4.1.1	Ease of getting credit*	25.0	126	
4.1.2	Domestic credit to private sector, % GDP	21.7	111	
4.1.3	Microfinance gross loans, % GDP	0.2	53	
4.2	**Investment**	**20.3**	**[113]**	
4.2.1	Ease of protecting minority investors*	32.0	120	
4.2.2	Market capitalization, % GDP	n/a	n/a	
4.2.3	Venture capital investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	0.0	50	●
4.3	**Trade, diversification, and market scale**	**49.6**	**116**	
4.3.1	Applied tariff rate, weighted avg., % ⏲	4.2	76	◆
4.3.2	Domestic industry diversification	n/a	n/a	
4.3.3	Domestic market scale, bn PPP$	40.9	109	

		Score/ Value	Rank	
Business sophistication		**13.8**	**127**	
5.1	**Knowledge workers**	**6.4**	**128**	
5.1.1	Knowledge-intensive employment, % ⏲	3.9	121	○ ◇
5.1.2	Firms offering formal training, % ⏲	20.7	76	
5.1.3	GERD performed by business, % GDP	n/a	n/a	
5.1.4	GERD financed by business, % ⏲	0.5	97	
5.1.5	Females employed w/advanced degrees, % ⏲	0.7	117	
5.2	**Innovation linkages**	**18.0**	**83**	
5.2.1	University-industry R&D collaboration† ⏲	34.0	97	
5.2.2	State of cluster development and depth† ⏲	35.0	115	
5.2.3	GERD financed by abroad, % GDP ⏲	0.1	34	●
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	46	●
5.2.5	Patent families/bn PPP$ GDP	0.0	100	○ ◇
5.3	**Knowledge absorption**	**16.9**	**106**	
5.3.1	Intellectual property payments, % total trade	0.5	70	●
5.3.2	High-tech imports, % total trade ⏲	4.3	114	
5.3.3	ICT services imports, % total trade	0.9	85	
5.3.4	FDI net inflows, % GDP	16.6	5	● ◆
5.3.5	Research talent, % in businesses ⏲	0.3	86	○
Knowledge and technology outputs		**10.3**	**116**	
6.1	**Knowledge creation**	**6.0**	**101**	
6.1.1	Patents by origin/bn PPP$ GDP	0.6	77	◆
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	98	○ ◇
6.1.3	Utility models by origin/bn PPP$ GDP	0.0	67	
6.1.4	Scientific and technical articles/bn PPP$ GDP	11.4	75	
6.1.5	Citable documents H-index	5.4	101	
6.2	**Knowledge impact**	**21.1**	**[98]**	
6.2.1	Labor productivity growth, %	0.0	64	●
6.2.2	New businesses/th pop. 15–64	n/a	n/a	
6.2.3	Software spending, % GDP	0.0	111	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	1.5	99	◆
6.2.5	High-tech manufacturing, %	n/a	n/a	
6.3	**Knowledge diffusion**	**3.8**	**124**	◇
6.3.1	Intellectual property receipts, % total trade ⏲	0.0	101	
6.3.2	Production and export complexity	15.0	114	
6.3.3	High-tech exports, % total trade ⏲	0.3	99	
6.3.4	ICT services exports, % total trade	0.3	108	
Creative outputs		**12.0**	**115**	
7.1	**Intangible assets**	**20.3**	**99**	
7.1.1	Trademarks by origin/bn PPP$ GDP	40.8	58	●
7.1.2	Global brand value, top 5,000, % GDP	0.0	80	○ ◇
7.1.3	Industrial designs by origin/bn PPP$ GDP	1.0	71	
7.1.4	ICTs and organizational model creation†	35.8	120	
7.2	**Creative goods and services**	**2.3**	**[116]**	
7.2.1	Cultural and creative services exports, % total trade	n/a	n/a	
7.2.2	National feature films/mn pop. 15–69	2.0	66	
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	n/a	n/a	
7.2.5	Creative goods exports, % total trade ⏲	0.0	125	
7.3	**Online creativity**	**5.2**	**123**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	0.0	129	○
7.3.2	Country-code TLDs/th pop. 15–69	0.2	109	
7.3.3	Wikipedia edits/mn pop. 15–69	19.7	122	
7.3.4	Mobile app creation/bn PPP$ GDP	n/a	n/a	

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 Mozambique.

Missing data for Mozambique

Code	Indicator name	Economy year	Model year	Source
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (PISA)
3.2.2	Logistics performance	n/a	2018	World Bank
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
4.3.2	Domestic industry diversification	n/a	2018	United Nations Industrial Development Organization
5.1.3	GERD performed by business, % GDP	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
6.2.5	High-tech manufacturing, %	n/a	2018	United Nations Industrial Development Organization
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
7.2.4	Printing and other media, % manufacturing	n/a	2018	United Nations Industrial Development Organization
7.3.4	Mobile app creation/bn PPP$ GDP	n/a	2020	App Annie

Outdated data for Mozambique

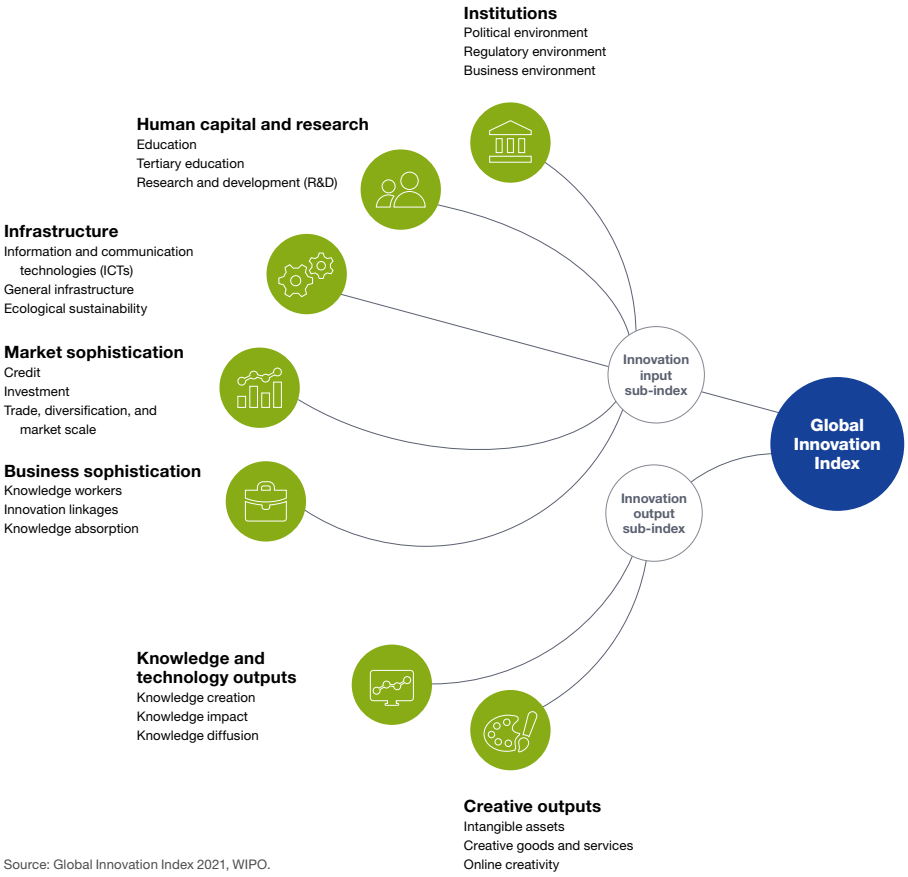
Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2013	2017	UNESCO Institute for Statistics

Code	Indicator name	Economy year	Model year	Source
2.1.3	School life expectancy, years	2017	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2015	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2015	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.3.1	Applied tariff rate, weighted avg., %	2018	2019	World Bank
5.1.1	Knowledge-intensive employment, %	2015	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2018	2019	World Bank
5.1.4	GERD financed by business, %	2015	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.5	Females employed w/advanced degrees, %	2015	2019	International Labour Organization
5.2.1	University-industry R&D collaboration	2019	2020	World Economic Forum
5.2.2	State of cluster development and depth	2019	2020	World Economic Forum
5.2.3	GERD financed by abroad, % GDP	2015	2018	UNESCO Institute for Statistics
5.3.2	High-tech imports, % total trade	2018	2019	United Nations, COMTRADE
5.3.5	Research talent, % in businesses	2015	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.3.1	Intellectual property receipts, % total trade	2012	2019	World Trade Organization
6.3.3	High-tech exports, % total trade	2018	2019	United Nations, COMTRADE
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.



Source: Global Innovation Index 2021, WIPO.

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.