Global Innovation Index 2021

ECUADOR

91st Ecuador ranks 91st 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 Ecuador 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 Ecuador in the GII 2021 is between ranks 89 and 97.

Rankings for Ecuador (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	91	92	94
2020	99	96	97
2019	99	98	98

- Ecuador performs better in innovation inputs than innovation outputs in 2021.
- This year Ecuador ranks 92nd in innovation inputs, higher than both 2020 and 2019.
- As for innovation outputs, Ecuador ranks 94th. This position is higher than both 2020 and 2019.

29th Ecuador ranks 29th among the 34 upper middle-income group economies.

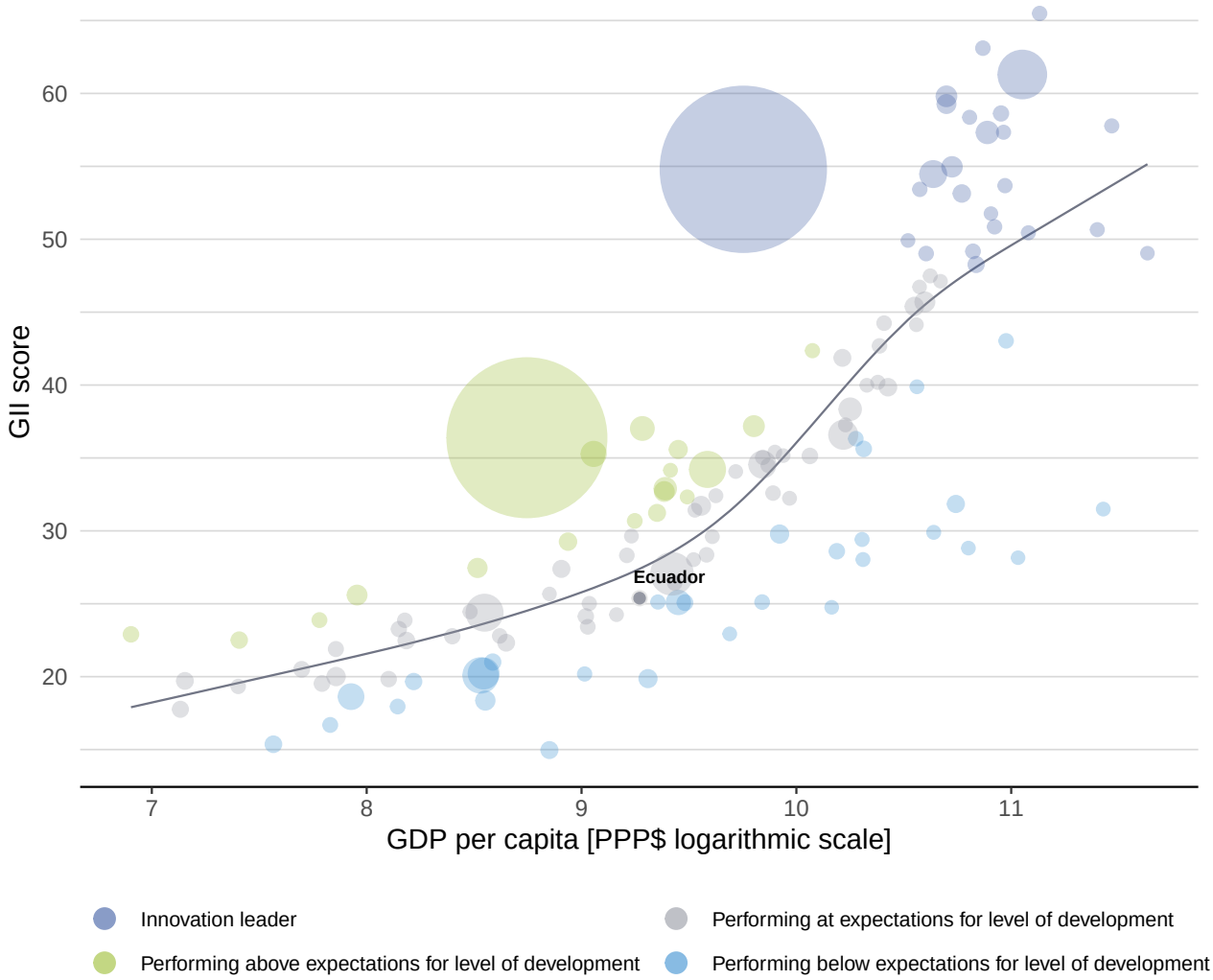
12th Ecuador ranks 12th among the 18 economies in Latin America and the Caribbean.

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

The positive relationship between innovation and development

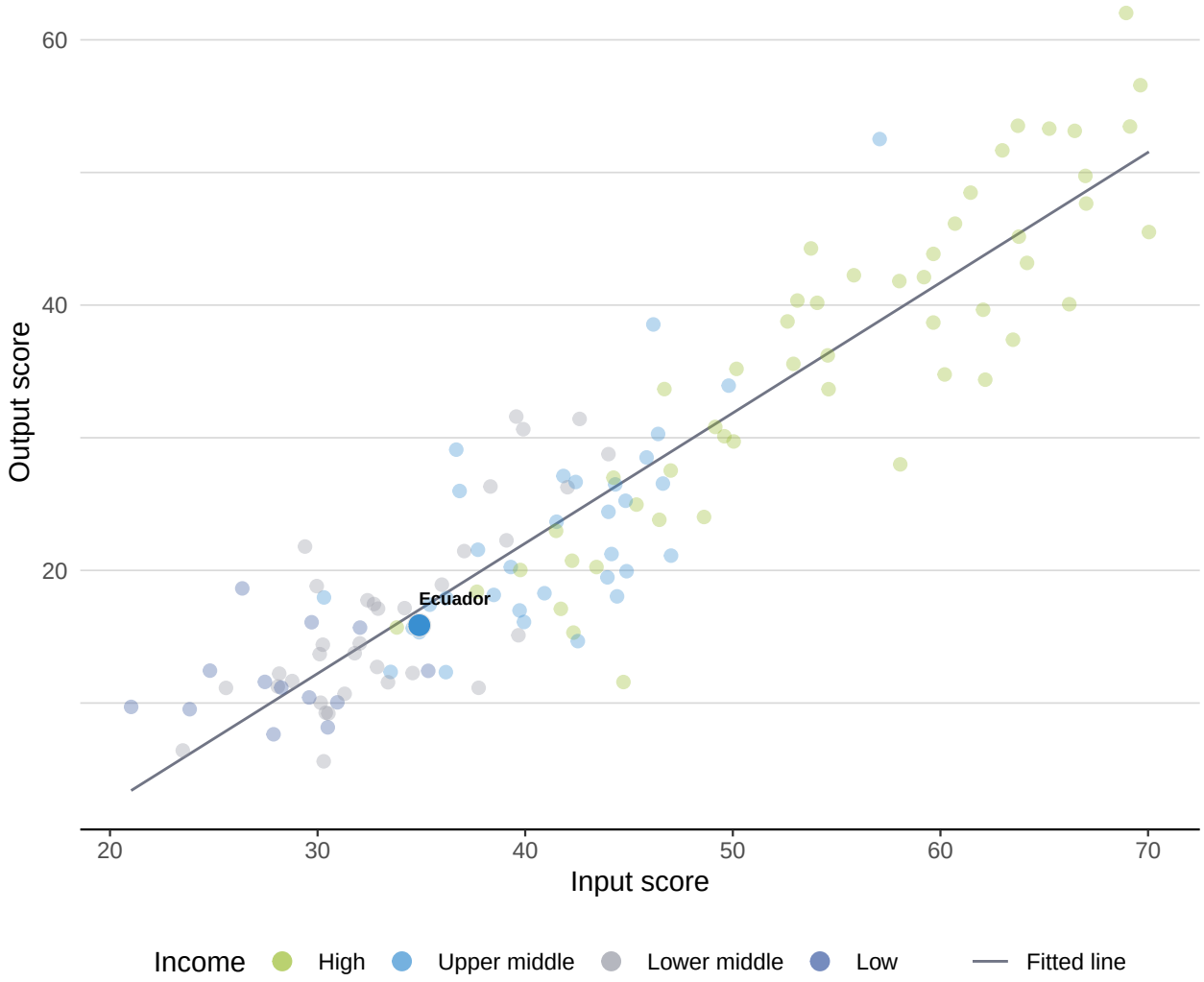


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Ecuador produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND LATIN AMERICA AND THE CARIBBEAN

The seven GII pillar scores for Ecuador

Upper middle-income group economies

Ecuador performs above the upper middle-income group average in Market sophistication.

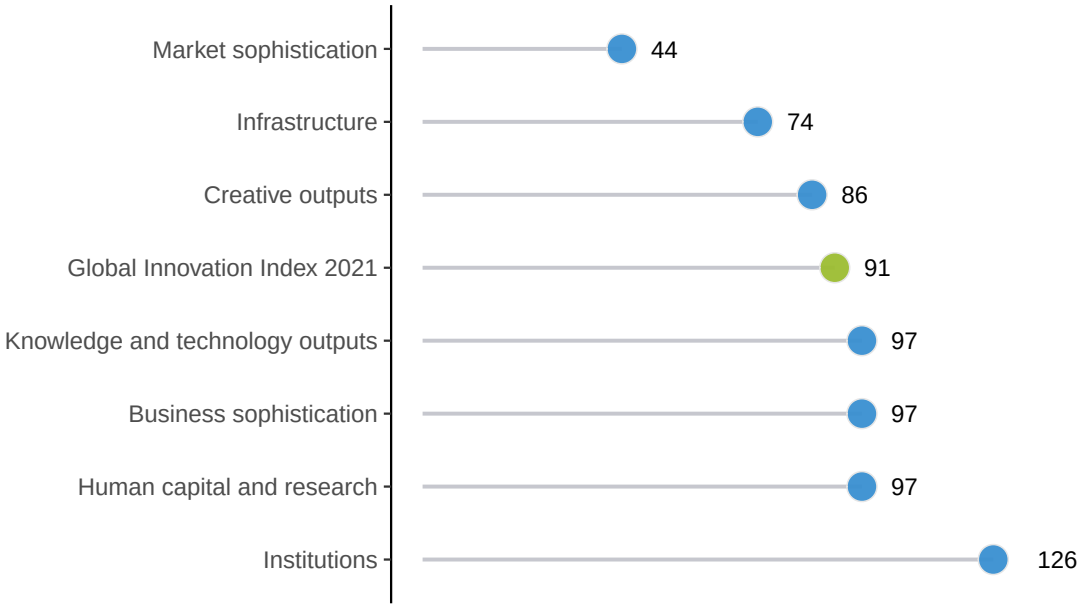
Latin America and the Caribbean

Ecuador performs above the regional average in two pillars, namely: Infrastructure; and, Market sophistication.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Ecuador performs best in Market sophistication and its weakest performance is in Institutions.

The seven GII pillar ranks for Ecuador



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 Ecuador in the GII 2021.

Strengths and weaknesses for Ecuador

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
2.1.1	Expenditure on education, % GDP	39	1.2.3	Cost of redudancy dismissal	122
2.3.4	QS university ranking, top 3	62	1.3	Business environment	128
3.1.3	Government's online service	40	1.3.1	Ease of starting a business	128
3.1.4	E-participation	49	1.3.2	Ease of resolving insolvency	126
3.3	Ecological sustainability	57	2.1.2	Government funding/pupil, secondary, % GDP/cap	100
3.3.1	GDP/unit of energy use	38	2.2.2	Graduates in science and engineering, %	110
3.3.2	Environmental performance	54	2.3.3	Global corporate R&D investors, top 3, mn US$	41
4.1	Credit	52	5.1.4	GERD financed by business, %	99
4.1.3	Microfinance gross loans, % GDP	1	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	121
5.1.2	Firms offering formal training, %	2	7.1.2	Global brand value, top 5,000, % GDP	80
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	52	7.2.1	Cultural and creative services exports, % total trade	109
7.1.1	Trademarks by origin/bn PPP$ GDP	36			

Ecuador

GII 2021 rank

91

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
94	**92**	**Upper middle**	**LCN**	**17.6**	**185.9**	**10,617**	**99**

		Score/ Value	Rank	
Institutions		**44.1**	**126**	○ ◇
1.1	**Political environment**	**45.1**	**103**	◇
1.1.1	Political and operational stability*	51.8	119	◇
1.1.2	Government effectiveness*	41.8	94	◇
1.2	**Regulatory environment**	**39.8**	**121**	◇
1.2.1	Regulatory quality*	22.0	119	◇
1.2.2	Rule of law*	31.5	101	
1.2.3	Cost of redundancy dismissal	31.8	122	○ ◇
1.3	**Business environment**	**47.3**	**128**	○ ◇
1.3.1	Ease of starting a business*	69.1	128	○ ◇
1.3.2	Ease of resolving insolvency*	25.5	126	○ ◇
Human capital and research		**20.5**	**97**	◇
2.1	**Education**	**41.6**	**89**	
2.1.1	Expenditure on education, % GDP	5.0	39	●
2.1.2	Government funding/pupil, secondary, % GDP/cap	6.7	100	○ ◇
2.1.3	School life expectancy, years	14.8	56	
2.1.4	PISA scales in reading, maths and science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary	20.6	97	
2.2	**Tertiary education**	**13.6**	**106**	◇
2.2.1	Tertiary enrolment, % gross	47.6	66	
2.2.2	Graduates in science and engineering, %	9.4	110	○ ◇
2.2.3	Tertiary inbound mobility, %	0.8	93	
2.3	**Research and development (R&D)**	**6.4**	**73**	
2.3.1	Researchers, FTE/mn pop.	399.5	72	
2.3.2	Gross expenditure on R&D, % GDP	0.4	70	
2.3.3	Global corporate R&D investors, top 3, mn US$	0.0	41	○ ◇
2.3.4	QS university ranking, top 3*	12.4	62	●
Infrastructure		**39.6**	**74**	
3.1	**Information and communication technologies (ICTs)**	**63.7**	**73**	
3.1.1	ICT access*	51.3	90	
3.1.2	ICT use*	42.6	97	◇
3.1.3	Government's online service*	81.2	40	●
3.1.4	E-participation*	79.8	49	●
3.2	**General infrastructure**	**24.8**	**85**	
3.2.1	Electricity output, GWh/mn pop.	1,859.1	83	
3.2.2	Logistics performance*	38.8	61	
3.2.3	Gross capital formation, % GDP	22.4	63	
3.3	**Ecological sustainability**	**30.3**	**57**	●
3.3.1	GDP/unit of energy use	13.0	38	●
3.3.2	Environmental performance*	51.0	54	●
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.8	72	
Market sophistication		**50.3**	**44**	●
4.1	**Credit**	**44.5**	**52**	●
4.1.1	Ease of getting credit*	45.0	101	◇
4.1.2	Domestic credit to private sector, % GDP	42.8	78	
4.1.3	Microfinance gross loans, % GDP	6.1	1	● ◆
4.2	**Investment**	**44.0**	**[26]**	
4.2.1	Ease of protecting minority investors*	44.0	98	◇
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	n/a	n/a	
4.3	**Trade, diversification, and market scale**	**62.6**	**85**	
4.3.1	Applied tariff rate, weighted avg., %	8.1	104	
4.3.2	Domestic industry diversification	77.5	85	
4.3.3	Domestic market scale, bn PPP$	185.9	66	

		Score/ Value	Rank	
Business sophistication		**19.9**	**97**	
5.1	**Knowledge workers**	**28.5**	**78**	
5.1.1	Knowledge-intensive employment, %	13.9	95	◇
5.1.2	Firms offering formal training, %	73.7	2	● ◆
5.1.3	GERD performed by business, % GDP	0.2	55	
5.1.4	GERD financed by business, %	0.1	99	○ ◇
5.1.5	Females employed w/advanced degrees, %	8.7	76	
5.2	**Innovation linkages**	**13.0**	**118**	◇
5.2.1	University-industry R&D collaboration†	31.3	108	◇
5.2.2	State of cluster development and depth†	39.7	102	
5.2.3	GERD financed by abroad, % GDP	0.0	77	
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	121	○
5.2.5	Patent families/bn PPP$ GDP	0.0	84	
5.3	**Knowledge absorption**	**18.2**	**101**	
5.3.1	Intellectual property payments, % total trade	0.5	67	
5.3.2	High-tech imports, % total trade	6.4	90	
5.3.3	ICT services imports, % total trade	0.4	112	◇
5.3.4	FDI net inflows, % GDP	0.9	108	
5.3.5	Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs		**13.2**	**97**	
6.1	**Knowledge creation**	**7.6**	**91**	
6.1.1	Patents by origin/bn PPP$ GDP	0.1	107	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	89	
6.1.3	Utility models by origin/bn PPP$ GDP	0.2	44	
6.1.4	Scientific and technical articles/bn PPP$ GDP	11.6	72	
6.1.5	Citable documents H-index	9.3	81	
6.2	**Knowledge impact**	**27.2**	**75**	
6.2.1	Labor productivity growth, %	0.2	62	
6.2.2	New businesses/th pop. 15–64	n/a	n/a	
6.2.3	Software spending, % GDP	0.2	64	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	5.6	52	●
6.2.5	High-tech manufacturing, %	13.3	82	
6.3	**Knowledge diffusion**	**4.8**	**121**	◇
6.3.1	Intellectual property receipts, % total trade	0.0	73	
6.3.2	Production and export complexity	21.4	109	◇
6.3.3	High-tech exports, % total trade	0.3	104	
6.3.4	ICT services exports, % total trade	0.2	117	
Creative outputs		**18.5**	**86**	
7.1	**Intangible assets**	**29.4**	**74**	
7.1.1	Trademarks by origin/bn PPP$ GDP	59.6	36	●
7.1.2	Global brand value, top 5,000, % GDP	0.0	80	○ ◇
7.1.3	Industrial designs by origin/bn PPP$ GDP	0.4	91	
7.1.4	ICTs and organizational model creation†	52.9	66	
7.2	**Creative goods and services**	**4.6**	**108**	
7.2.1	Cultural and creative services exports, % total trade	0.0	109	○
7.2.2	National feature films/mn pop. 15–69	2.1	64	
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	0.9	62	
7.2.5	Creative goods exports, % total trade	0.0	114	
7.3	**Online creativity**	**10.7**	**90**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	1.9	78	
7.3.2	Country-code TLDs/th pop. 15–69	1.1	84	
7.3.3	Wikipedia edits/mn pop. 15–69	40.9	83	
7.3.4	Mobile app creation/bn PPP$ GDP	0.2	86	

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 Ecuador.

Missing data for Ecuador

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)
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
5.3.5	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
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC

Outdated data for Ecuador

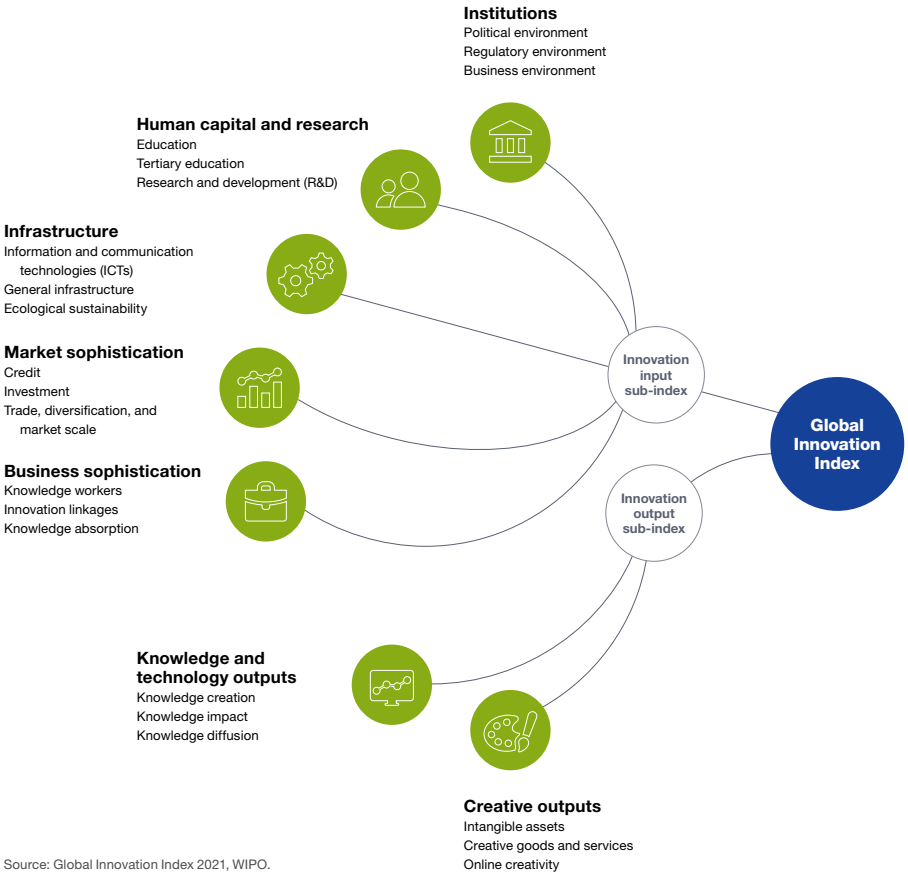
Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2015	2017	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2018	2019	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2015	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.2	Firms offering formal training, %	2017	2019	World Bank

Code	Indicator name	Economy year	Model year	Source
5.1.3	GERD performed by business, % GDP	2014	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
5.2.3	GERD financed by abroad, % GDP	2014	2018	UNESCO Institute for Statistics
7.2.2	National feature films/mn pop. 15–69	2015	2017	UNESCO Institute for Statistics

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.