Global Innovation Index 2021

MONGOLIA

58th Mongolia ranks 58th 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 Mongolia 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 Mongolia in the GII 2021 is between ranks 55 and 62.

Rankings for Mongolia (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	58	65	55
2020	58	65	54
2019	53	73	44

- Mongolia performs better in innovation outputs than innovation inputs in 2021.
- This year Mongolia ranks 65th in innovation inputs, the same as last year but higher than 2019.
- As for innovation outputs, Mongolia ranks 55th. This position is lower than both 2020 and 2019.

5th Mongolia ranks 5th among the 34 lower middle-income group economies.

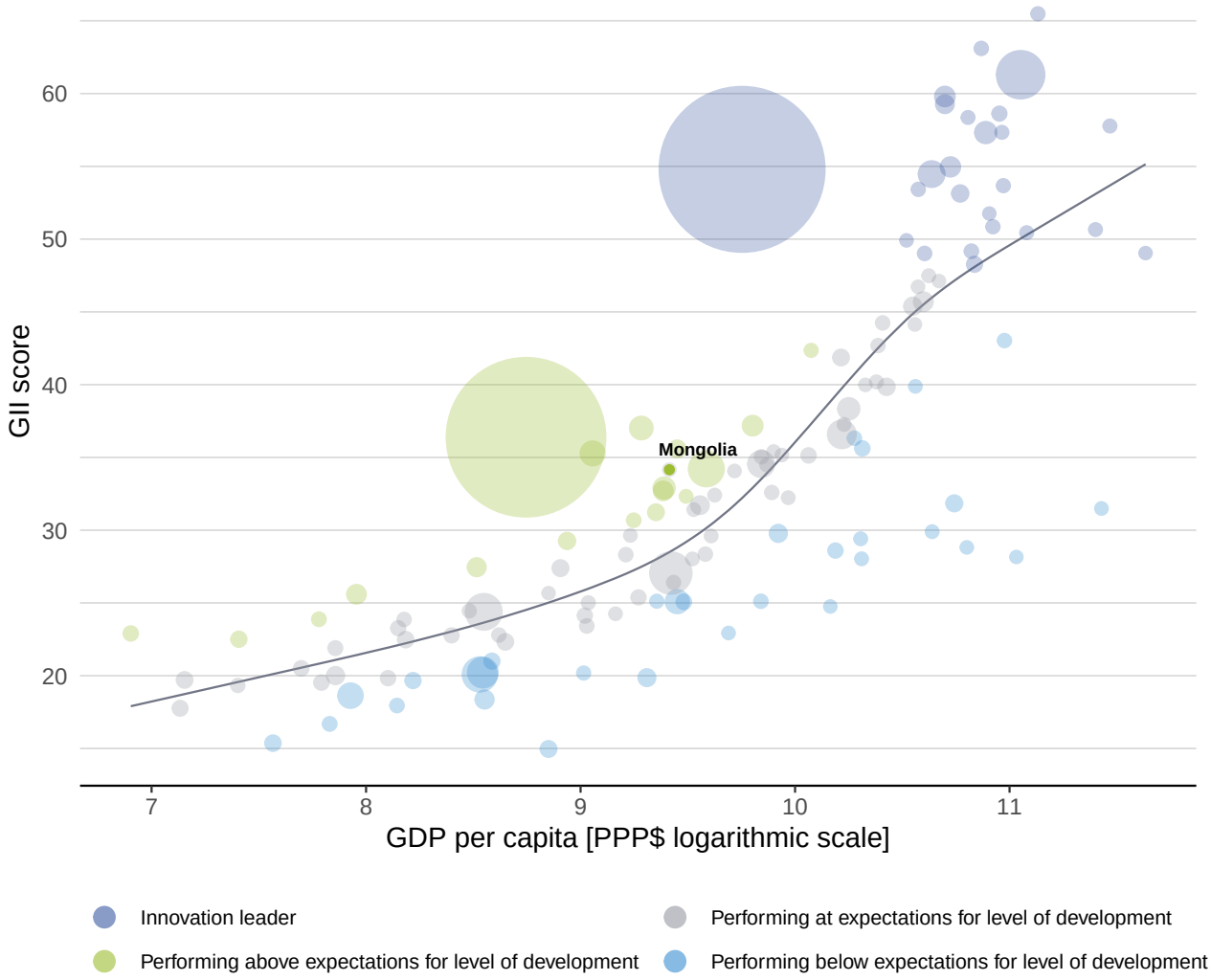
12th Mongolia ranks 12th among the 17 economies in South East Asia, East Asia, and Oceania.

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, Mongolia's performance is above expectations for its level of development.

The positive relationship between innovation and development

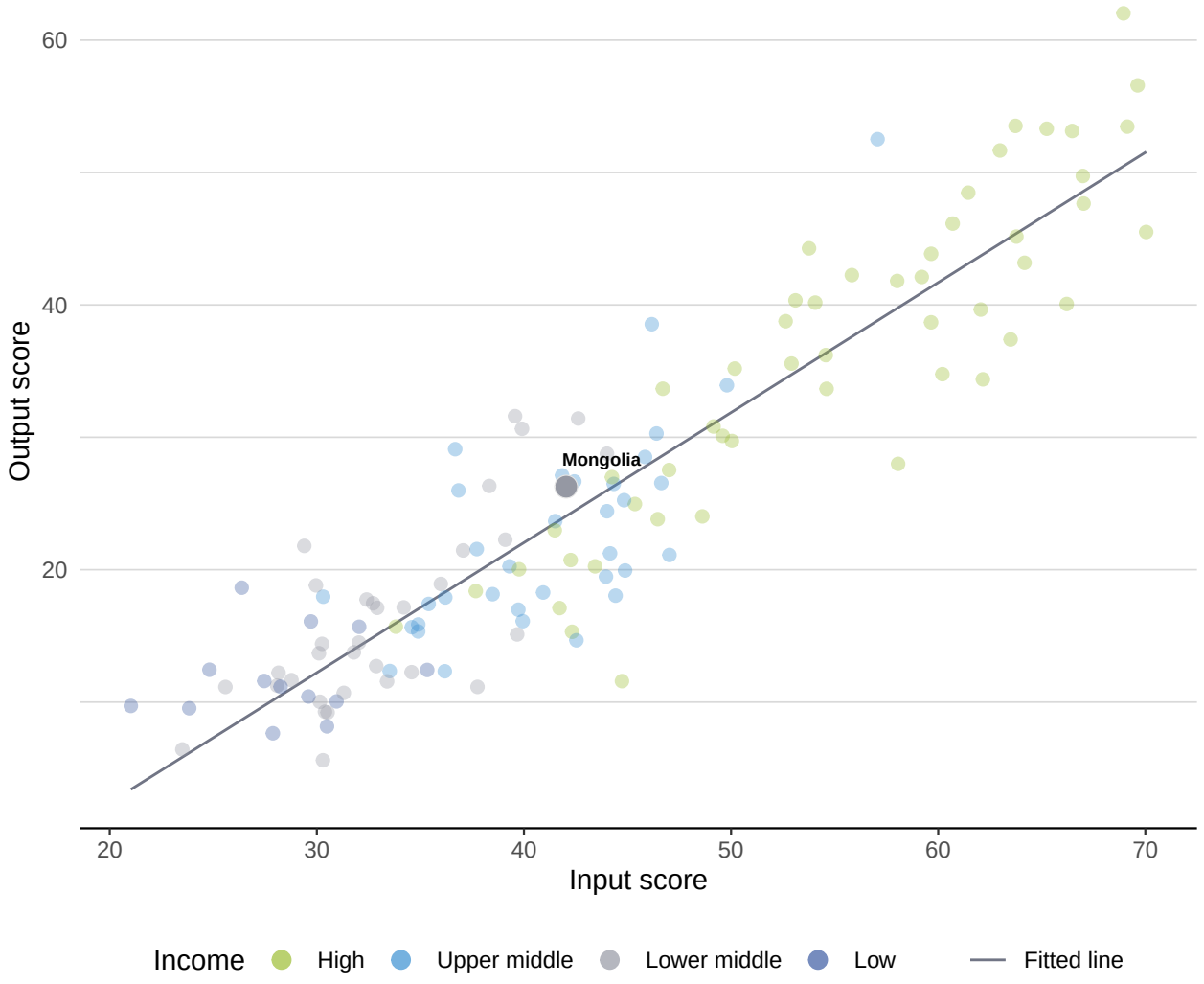


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Mongolia 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 SOUTH EAST ASIA, EAST ASIA, AND OCEANIA

The seven GII pillar scores for Mongolia

Lower middle-income group economies

Mongolia performs above the lower middle-income group average in six pillars, namely: Institutions; Human capital and research; Infrastructure; Market sophistication; Business sophistication; and, Creative outputs.

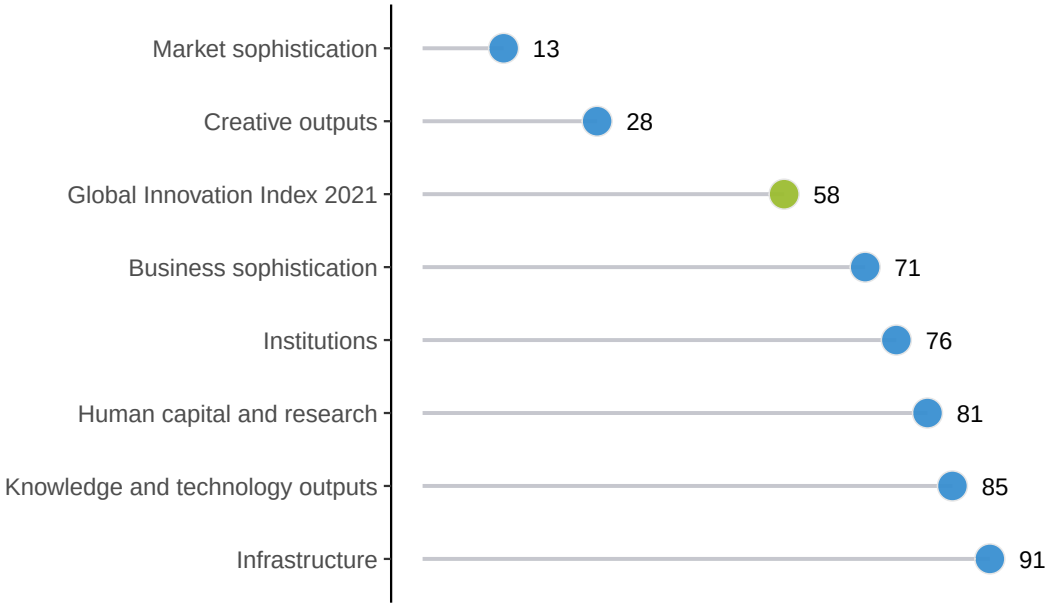
South East Asia, East Asia, and Oceania

Mongolia performs above the regional average in two pillars, namely: Market sophistication; and, Creative outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Mongolia performs best in Market sophistication and its weakest performance is in Infrastructure.

The seven GII pillar ranks for Mongolia



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 Mongolia in the GII 2021.

Strengths and weaknesses for Mongolia

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redudancy dismissal	18	1.3.2	Ease of resolving insolvency	120
3.2.3	Gross capital formation, % GDP	14	2.3.2	Gross expenditure on R&D, % GDP	104
4.1	Credit	15	2.3.3	Global corporate R&D investors, top 3, mn US$	41
4.1.3	Microfinance gross loans, % GDP	1	2.3.4	QS university ranking, top 3	74
5.1.2	Firms offering formal training, %	4	3.2.2	Logistics performance	116
5.1.5	Females employed w/advanced degrees, %	18	5.1.3	GERD performed by business, % GDP	87
5.3.4	FDI net inflows, % GDP	6	5.2	Innovation linkages	123
6.1.3	Utility models by origin/bn PPP$ GDP	1	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	114
7.1	Intangible assets	11	6.1.2	PCT patents by origin/bn PPP$ GDP	98
7.1.1	Trademarks by origin/bn PPP$ GDP	1	6.2	Knowledge impact	124
7.1.3	Industrial designs by origin/bn PPP$ GDP	1	6.2.5	High-tech manufacturing, %	99
7.2.2	National feature films/mn pop. 15–69	3	7.1.2	Global brand value, top 5,000, % GDP	80

Mongolia

GII 2021 rank **58**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
55	65	Lower middle	SEAO	3.3	41.1	12,259	58

		Score/ Value	Rank	
Institutions		**61.2**	**76**	◆
1.1	**Political environment**	**55.3**	**76**	◆
1.1.1	Political and operational stability*	73.2	44	◆
1.1.2	Government effectiveness*	46.3	87	
1.2	**Regulatory environment**	**70.1**	**48**	◆
1.2.1	Regulatory quality*	43.2	73	◆
1.2.2	Rule of law*	39.7	76	
1.2.3	Cost of redundancy dismissal	8.7	18	● ◆
1.3	**Business environment**	**58.4**	**110**	
1.3.1	Ease of starting a business*	86.7	78	
1.3.2	Ease of resolving insolvency*	30.1	120	○
Human capital and research		**27.7**	**81**	
2.1	**Education**	**45.4**	**79**	
2.1.1	Expenditure on education, % GDP	4.1	66	
2.1.2	Government funding/pupil, secondary, % GDP/cap ◴	15.4	73	
2.1.3	School life expectancy, years ◴	14.6	61	◆
2.1.4	PISA scales in reading, maths and science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary	13.3	57	
2.2	**Tertiary education**	**37.0**	**50**	◆
2.2.1	Tertiary enrolment, % gross	65.6	40	◆
2.2.2	Graduates in science and engineering, %	25.3	37	
2.2.3	Tertiary inbound mobility, %	1.1	87	
2.3	**Research and development (R&D)**	**0.6**	**109**	
2.3.1	Researchers, FTE/mn pop.	n/a	n/a	
2.3.2	Gross expenditure on R&D, % GDP ◴	0.1	104	○
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		**33.7**	**91**	
3.1	**Information and communication technologies (ICTs)**	**55.8**	**89**	
3.1.1	ICT access*	54.2	86	
3.1.2	ICT use*	55.2	72	◆
3.1.3	Government's online service*	52.9	98	
3.1.4	E-participation*	60.7	85	
3.2	**General infrastructure**	**28.6**	**67**	
3.2.1	Electricity output, GWh/mn pop.	2,061.5	79	
3.2.2	Logistics performance*	15.2	116	○
3.2.3	Gross capital formation, % GDP	33.8	14	●
3.3	**Ecological sustainability**	**16.6**	**118**	
3.3.1	GDP/unit of energy use	7.2	100	
3.3.2	Environmental performance*	32.2	114	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.3	95	
Market sophistication		**63.4**	**13**	● ◆
4.1	**Credit**	**59.6**	**15**	● ◆
4.1.1	Ease of getting credit*	80.0	23	
4.1.2	Domestic credit to private sector, % GDP	49.6	72	
4.1.3	Microfinance gross loans, % GDP	12.9	1	● ◆
4.2	**Investment**	**74.0**	**[8]**	
4.2.1	Ease of protecting minority investors*	74.0	24	◆
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**	**56.5**	**105**	
4.3.1	Applied tariff rate, weighted avg., %	5.3	88	
4.3.2	Domestic industry diversification	70.1	98	
4.3.3	Domestic market scale, bn PPP$	41.1	108	

		Score/ Value	Rank	
Business sophistication		**24.2**	**71**	
5.1	**Knowledge workers**	**37.3**	**50**	◆
5.1.1	Knowledge-intensive employment, %	26.2	57	◆
5.1.2	Firms offering formal training, %	66.2	4	● ◆
5.1.3	GERD performed by business, % GDP ◴	0.0	87	○
5.1.4	GERD financed by business, %	8.1	79	
5.1.5	Females employed w/advanced degrees, %	23.4	18	● ◆
5.2	**Innovation linkages**	**12.4**	**123**	○
5.2.1	University-industry R&D collaboration†	33.3	98	
5.2.2	State of cluster development and depth†	36.1	111	
5.2.3	GERD financed by abroad, % GDP	0.0	85	
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	114	○
5.2.5	Patent families/bn PPP$ GDP	0.0	75	
5.3	**Knowledge absorption**	**22.8**	**76**	
5.3.1	Intellectual property payments, % total trade	0.2	88	
5.3.2	High-tech imports, % total trade	5.2	108	
5.3.3	ICT services imports, % total trade	1.2	62	
5.3.4	FDI net inflows, % GDP	15.1	6	● ◆
5.3.5	Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs		**15.0**	**85**	
6.1	**Knowledge creation**	**30.5**	**33**	◆
6.1.1	Patents by origin/bn PPP$ GDP	2.0	37	◆
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	98	○ ◇
6.1.3	Utility models by origin/bn PPP$ GDP	5.4	1	● ◆
6.1.4	Scientific and technical articles/bn PPP$ GDP	11.5	74	
6.1.5	Citable documents H-index	4.8	108	
6.2	**Knowledge impact**	**8.7**	**124**	○ ◇
6.2.1	Labor productivity growth, %	n/a	n/a	
6.2.2	New businesses/th pop. 15–64	5.5	29	◆
6.2.3	Software spending, % GDP	0.1	80	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	1.5	97	
6.2.5	High-tech manufacturing, %	5.0	99	○
6.3	**Knowledge diffusion**	**5.9**	**114**	
6.3.1	Intellectual property receipts, % total trade	0.0	85	
6.3.2	Production and export complexity	23.6	104	
6.3.3	High-tech exports, % total trade	0.5	92	
6.3.4	ICT services exports, % total trade	0.5	101	
Creative outputs		**37.5**	**28**	◆
7.1	**Intangible assets**	**55.1**	**11**	● ◆
7.1.1	Trademarks by origin/bn PPP$ GDP	261.5	1	● ◆
7.1.2	Global brand value, top 5,000, % GDP	0.0	80	○ ◇
7.1.3	Industrial designs by origin/bn PPP$ GDP	20.7	1	● ◆
7.1.4	ICTs and organizational model creation†	42.8	102	
7.2	**Creative goods and services**	**27.3**	**[31]**	
7.2.1	Cultural and creative services exports, % total trade	n/a	n/a	
7.2.2	National feature films/mn pop. 15–69	26.1	3	● ◆
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	1.1	42	
7.2.5	Creative goods exports, % total trade ◴	0.0	115	
7.3	**Online creativity**	**12.6**	**82**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	0.6	102	
7.3.2	Country-code TLDs/th pop. 15–69	2.3	67	◆
7.3.3	Wikipedia edits/mn pop. 15–69	47.6	70	◆
7.3.4	Mobile app creation/bn PPP$ GDP	0.1	90	

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 Mongolia.

Missing data for Mongolia

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)
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
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
6.2.1	Labor productivity growth, %	n/a	2020	The Conference Board
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

Outdated data for Mongolia

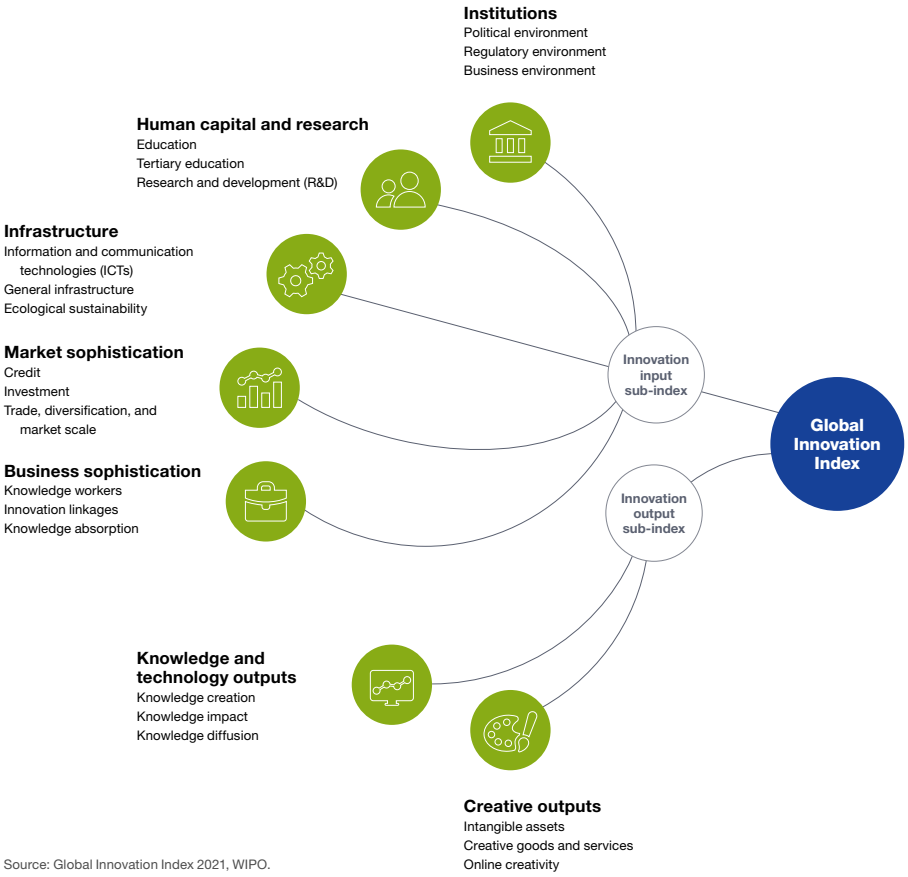
Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2010	2017	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2010	2018	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators

Code	Indicator name	Economy year	Model year	Source
5.1.3	GERD performed by business, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
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.