GLOBAL INNOVATION INDEX 2020

MONGOLIA

58th Mongolia ranks 58th among the 131 economies featured in the GII 2020.

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 2020 is between ranks 42 and 61.

Rankings of Mongolia (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	58	65	54
2019	53	73	44
2018	53	66	47

- Mongolia performs better in innovation outputs than innovation inputs in 2020.
- This year Mongolia ranks 65th in innovation inputs, higher than last year and higher compared to 2018.
- As for innovation outputs, Mongolia ranks 54th. This position is lower than last year and lower compared to 2018.

5th Mongolia ranks 5th among the 29 lower middle-income group economies.

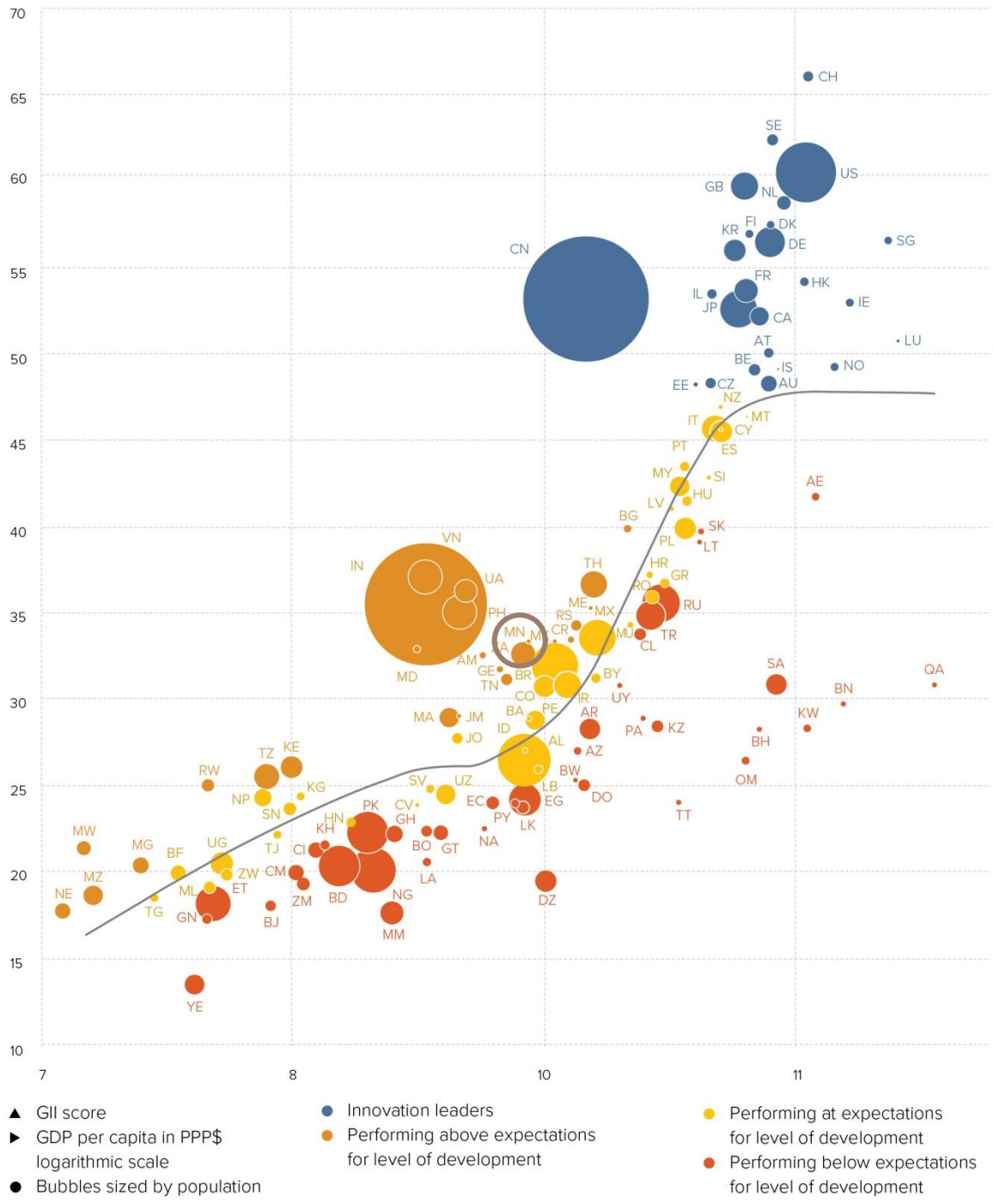
12th Mongolia ranks 12th among the 17 economies in South East Asia, East Asia, and Oceania.

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

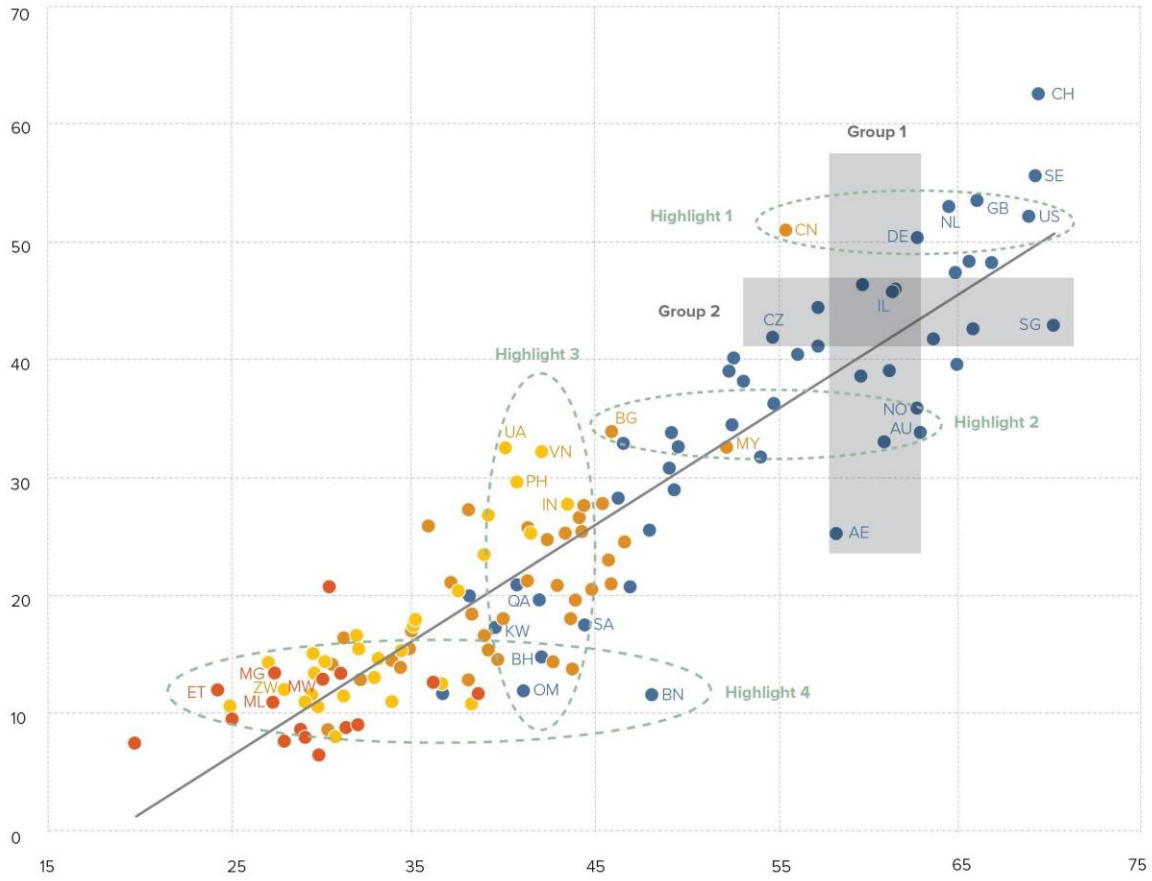


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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, 2020



▲ Output score
► Input score

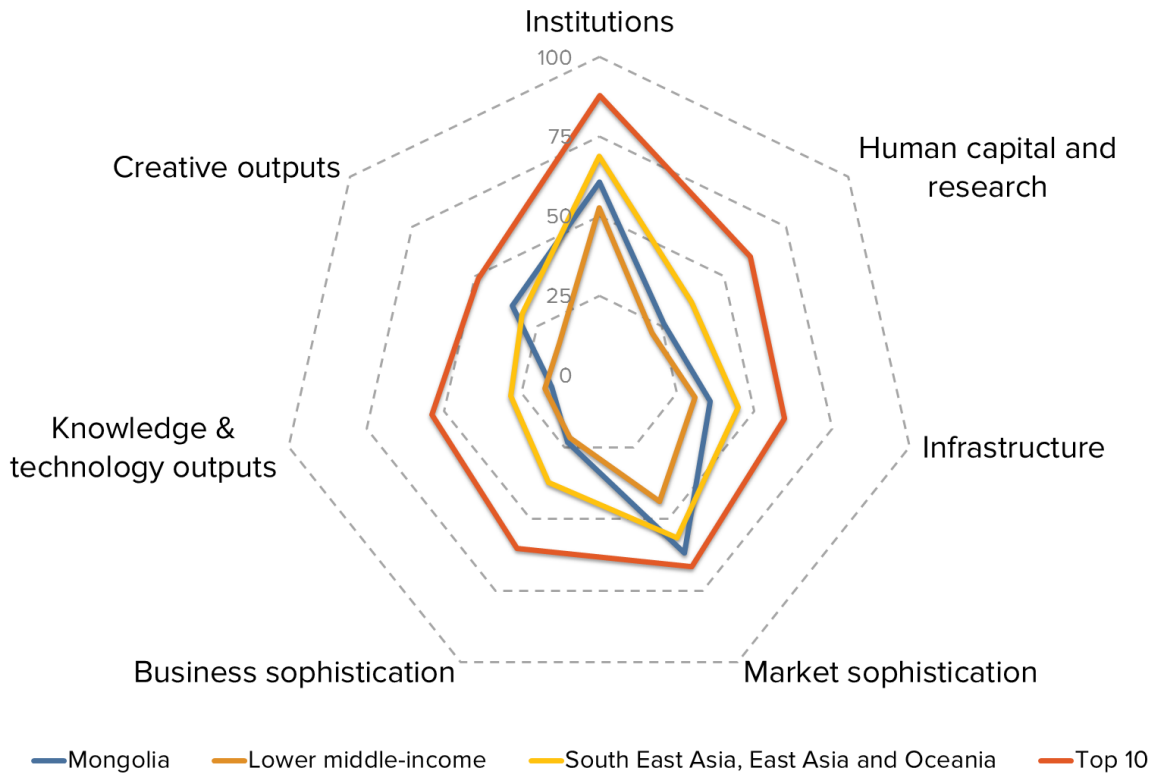
● High income group
● Upper middle-income group
● Lower middle-income group
● Low income group

— Fitted values

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

BENCHMARKING MONGOLIA AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND SOUTH EAST ASIA, EAST ASIA, AND OCEANIA

Mongolia's scores in the seven GII pillars



Lower middle-income group economies

Mongolia has high scores in six out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Market sophistication, Business sophistication and Creative outputs, which are above average for the lower middle-income group.

Conversely, Mongolia scores below average for its income group in one GII pillar: Knowledge & technology outputs.

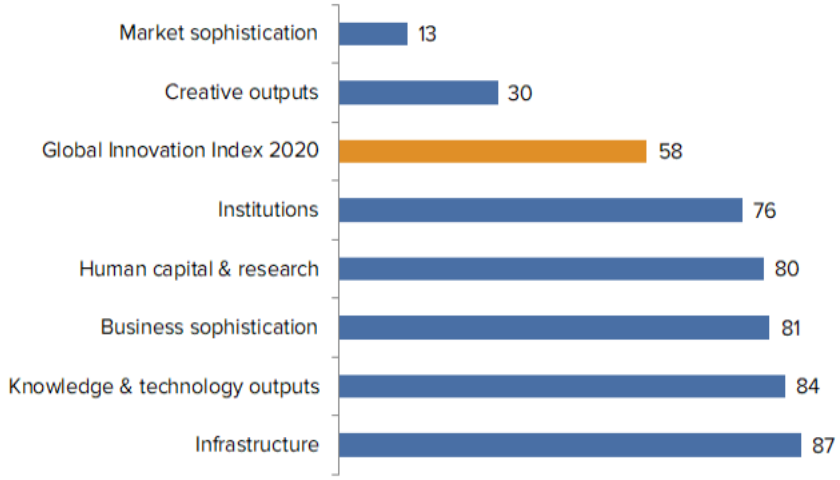
South East Asia, East Asia, and Oceania

Compared to other economies in South East Asia, East Asia, and Oceania, Mongolia performs:

- above average in two out of the seven GII pillars: Market sophistication and Creative outputs; and
- below average in five out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Business sophistication and Knowledge & technology outputs.

OVERVIEW OF MONGOLIA RANKINGS IN THE SEVEN GII AREAS

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



*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Mongolia in the GII 2020.

Strengths

Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal, salary weeks	18
3.2.3	Gross capital formation, % GDP	7
4	Market sophistication	13
4.1	Credit	18
4.1.3	Microfinance gross loans, % GDP	2
4.2.1	Ease of protecting minority investors*	24
5.1.2	Firms offering formal training, %	4
5.1.5	Females employed w/advanced degrees, %	17
6.1.3	Utility models by origin/bn PPP$ GDP	1
7.1	Intangible assets	12
7.1.1	Trademarks by origin/bn PPP$ GDP	3
7.1.3	Industrial designs by origin/bn PPP$ GDP	4
7.2.2	National feature films/mn pop. 15–69	3

Weaknesses

Code	Indicator name	Rank
1.3.2	Ease of resolving insolvency*	120
2.3.2	Gross expenditure on R&D, % GDP	105
2.3.3	Global R&D companies, top 3, mn US$	42
2.3.4	QS university ranking, average score top 3*	77
3.2.2	Logistics performance*	116
5.2.2	State of cluster development†	115
5.3.4	FDI net inflows, % GDP	130
6.1.2	PCT patents by origin/bn PPP$ GDP	100
6.2	Knowledge impact	122
6.2.5	High- and medium-high-tech manufacturing, %	101
6.3	Knowledge diffusion	124
7.1.2	Global brand value, top 5000, % GDP	80

STRENGTHS

GII strengths for Mongolia are found in six of the seven GII pillars.

- Institutions (76): exhibits strengths in the indicator Cost of redundancy dismissal (18).
- Infrastructure (87): demonstrates strengths in the indicator Gross capital formation (7).
- Market sophistication (13): displays strengths in the sub-pillar Credit (18) and in the indicators Microfinance gross loans (2) and Ease of protecting minority investors (24).
- Business sophistication (81): shows strengths in the indicators Firms offering formal training (4) and Females employed w/advanced degrees (17).
- Knowledge & technology outputs (84): reveals strengths in the indicator Utility models by origin (1).
- Creative outputs (30): displays strengths in the sub-pillar Intangible assets (12) and in the indicators Trademarks by origin (3), Industrial designs by origin (4) and National feature films (3).

WEAKNESSES

GII weaknesses for Mongolia are found in six of the seven GII pillars.

- Institutions (76): exhibits weaknesses in the indicator Ease of resolving insolvency (120).
- Human capital & research (80): reveals weaknesses in the indicators Gross expenditure on R&D (105), Global R&D companies (42) and QS university ranking (77).
- Infrastructure (87): displays weaknesses in the indicator Logistics performance (116).
- Business sophistication (81): demonstrates weaknesses in the indicators State of cluster development (115) and FDI net inflows (130).
- Knowledge & technology outputs (84): shows weaknesses in the sub-pillars Knowledge impact (122) and Knowledge diffusion (124) and in the indicators PCT patents by origin (100) and High- and medium-high-tech manufacturing (101).
- Creative outputs (30): reveals weaknesses in the indicator Global brand value (80).

MONGOLIA

GII 2020 rank

58

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2019 rank
54	65	Lower middle	SEAO	3.2	47.2	12,492.2	53

		Score/Value	Rank	
INSTITUTIONS		**61.0**	**76**	◆
1.1	**Political environment**	**55.0**	**74**	
1.1.1	Political and operational stability*	75.0	44	◆
1.1.2	Government effectiveness*	44.9	83	
1.2	**Regulatory environment**	**69.5**	**49**	◆
1.2.1	Regulatory quality*	41.0	70	◆
1.2.2	Rule of law*	39.7	77	
1.2.3	Cost of redundancy dismissal, salary weeks	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 & RESEARCH		**26.0**	**80**	
2.1	**Education**	**40.0**	**79**	
2.1.1	Expenditure on education, % GDP ⊙	4.1	69	
2.1.2	Government funding/pupil, secondary, % GDP/cap ⊙	15.4	75	
2.1.3	School life expectancy, years ⊙	14.6	60	◆
2.1.4	PISA scales in reading, maths, & science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary ⊙	14.5	71	
2.2	**Tertiary education**	**37.2**	**56**	◆
2.2.1	Tertiary enrolment, % gross	65.6	38	◆
2.2.2	Graduates in science & engineering, %	25.3	34	
2.2.3	Tertiary inbound mobility, %	1.1	87	
2.3	**Research & development (R&D)**	**0.6**	**110**	
2.3.1	Researchers, FTE/mn pop	n/a	n/a	
2.3.2	Gross expenditure on R&D, % GDP	0.1	105	○
2.3.3	Global R&D companies, avg. exp. top 3, mn $US	0.0	42	○ ◇
2.3.4	QS university ranking, average score top 3*	0.0	77	○ ◇
INFRASTRUCTURE		**35.6**	**87**	
3.1	**Information & communication technologies (ICTs)**	**59.0**	**81**	
3.1.1	ICT access*	53.7	84	
3.1.2	ICT use*	49.0	78	◆
3.1.3	Government's online service*	59.7	92	
3.1.4	E-participation*	73.6	64	
3.2	**General infrastructure**	**30.9**	**47**	◆
3.2.1	Electricity output, kWh/mn pop	1,956.9	78	◆
3.2.2	Logistics performance*	14.2	116	○
3.2.3	Gross capital formation, % GDP	43.2	7	● ◆
3.3	**Ecological sustainability**	**17.0**	**116**	
3.3.1	GDP/unit of energy use	6.9	90	
3.3.2	Environmental performance*	32.2	114	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.2	109	
MARKET SOPHISTICATION		**61.6**	**13**	● ◆
4.1	**Credit**	**58.2**	**18**	● ◆
4.1.1	Ease of getting credit*	80.0	23	
4.1.2	Domestic credit to private sector, % GDP	56.2	60	
4.1.3	Microfinance gross loans, % GDP	13.0	2	● ◆
4.2	**Investment**	**74.0**	**[4]**	
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 deals/bn PPP$ GDP	n/a	n/a	
4.3	**Trade, competition, and market scale**	**52.7**	**105**	
4.3.1	Applied tariff rate, weighted avg., %	5.3	96	
4.3.2	Intensity of local competition+	61.9	99	
4.3.3	Domestic market scale, bn PPP$	47.2	102	

		Score/Value	Rank	
BUSINESS SOPHISTICATION		**23.2**	**81**	
5.1	**Knowledge workers**	**36.6**	**55**	◆
5.1.1	Knowledge-intensive employment, %	25.1	58	◆
5.1.2	Firms offering formal training, %	66.2	4	● ◆
5.1.3	GERD performed by business, % GDP	0.0	84	
5.1.4	GERD financed by business, %	8.1	79	
5.1.5	Females employed w/advanced degrees, %	22.8	17	● ◆
5.2	**Innovation linkages**	**14.3**	**116**	
5.2.1	University/industry research collaboration+	30.4	109	
5.2.2	State of cluster development+	33.7	115	○ ◇
5.2.3	GERD financed by abroad, % GDP	0.0	84	
5.2.4	JV-strategic alliance deals/bn PPP$ GDP	n/a	n/a	
5.2.5	Patent families 2+ offices/bn PPP$ GDP	0.0	78	
5.3	**Knowledge absorption**	**18.6**	**112**	
5.3.1	Intellectual property payments, % total trade	0.3	81	
5.3.2	High-tech imports, % total trade	4.8	112	
5.3.3	ICT services imports, % total trade	1.3	52	
5.3.4	FDI net inflows, % GDP	-3.0	130	○ ◇
5.3.5	Research talent, % in business enterprise	n/a	n/a	
KNOWLEDGE & TECHNOLOGY OUTPUTS		**15.5**	**84**	
6.1	**Knowledge creation**	**29.3**	**34**	◆
6.1.1	Patents by origin/bn PPP$ GDP	1.9	40	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	100	○ ◇
6.1.3	Utility models by origin/bn PPP$ GDP	5.1	1	● ◆
6.1.4	Scientific & technical articles/bn PPP$ GDP	5.6	79	
6.1.5	Citable documents H-index	4.8	106	
6.2	**Knowledge impact**	**7.9**	**122**	○ ◇
6.2.1	Growth rate of PPP$ GDP/worker, %	n/a	n/a	
6.2.2	New businesses/th pop. 15-64	5.5	29	◆
6.2.3	Computer software spending, % GDP	0.0	81	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	1.1	103	
6.2.5	High- and medium-high-tech manufacturing, %	4.3	101	○ ◇
6.3	**Knowledge diffusion**	**9.3**	**124**	○ ◇
6.3.1	Intellectual property receipts, % total trade	0.0	79	
6.3.2	High-tech net exports, % total trade	0.1	114	
6.3.3	ICT services exports, % total trade	0.6	96	
6.3.4	FDI net outflows, % GDP	0.3	92	
CREATIVE OUTPUTS		**35.2**	**30**	◆
7.1	**Intangible assets**	**50.5**	**12**	● ◆
7.1.1	Trademarks by origin/bn PPP$ GDP	199.8	3	● ◆
7.1.2	Global brand value, top 5,000, % GDP	0.0	80	○ ◇
7.1.3	Industrial designs by origin/bn PPP$ GDP	17.0	4	● ◆
7.1.4	ICTs & organizational model creation+	42.8	102	
7.2	**Creative goods and services**	**30.4**	**[25]**	
7.2.1	Cultural & 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 & Media market/th pop. 15-69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	1.7	22	
7.2.5	Creative goods exports, % total trade	0.0	115	
7.3	**Online creativity**	**9.4**	**86**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	0.6	105	
7.3.2	Country-code TLDs/th pop. 15-69	2.4	66	◆
7.3.3	Wikipedia edits/mn pop. 15-69	38.0	82	
7.3.4	Mobile app creation/bn PPP$ GDP	0.1	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 II 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

Code	Indicator name	Country year	Model year	Source
2.1.4	PISA scales in reading, maths, & science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.3.1	Researchers, FTE/mn pop.	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.2.2	Market capitalization, % GDP	n/a	2018	World Federation of Exchanges
4.2.3	Venture capital deals/bn PPP$ GDP	n/a	2019	Thomson Reuters
5.2.4	JV–strategic alliance deals/bn PPP$ GDP	n/a	2019	Thomson Reuters
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.2.1	Growth rate of PPP$ GDP/worker, %	n/a	2019	The Conference Board
7.2.1	Cultural & creative services exports, % total trade	n/a	2018	World Trade Organization
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC

Outdated data

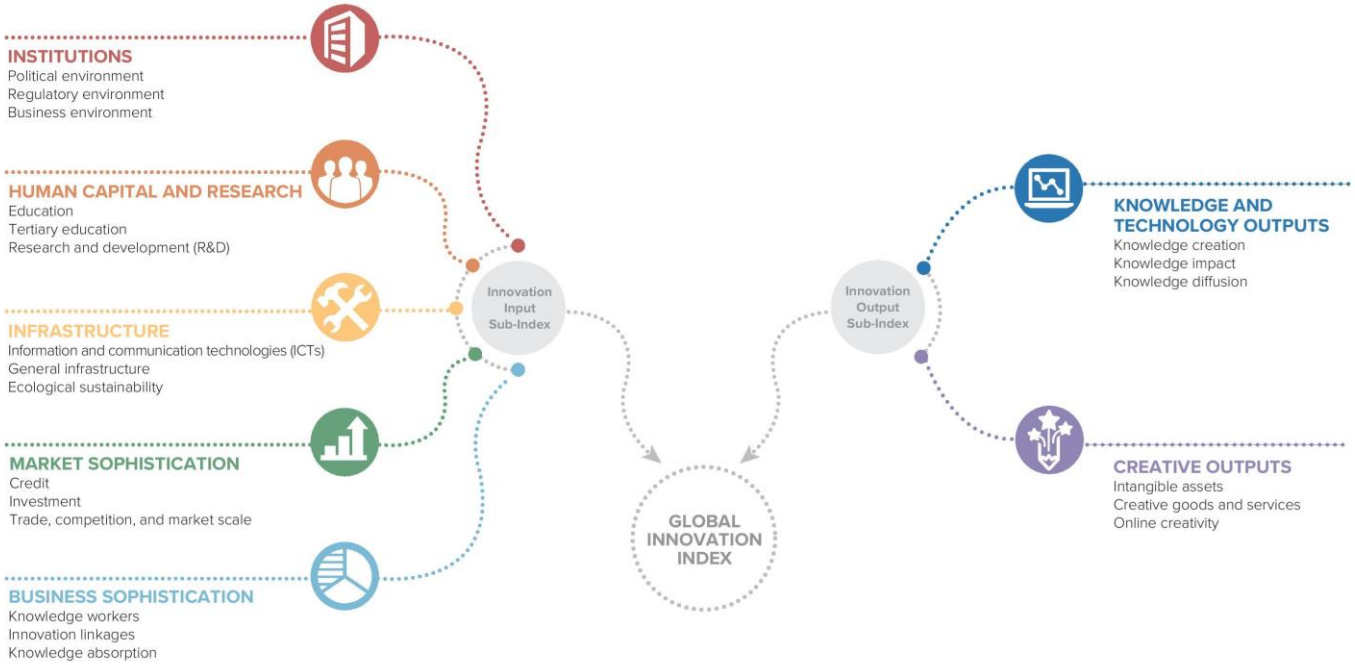
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2017	2018	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2010	2016	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2010	2017	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2010	2018	UNESCO Institute for Statistics

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.

Framework of the Global Innovation Index 2020



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.