NEPAL

95th
Nepal ranks 95th 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 Nepal 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 Nepal in the GII 2020 is between ranks 93 and 103.

Rankings of Nepal (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	95	89	106
2019	109	93	119
2018	108	101	114

- Nepal performs better in innovation inputs than innovation outputs in 2020.
- This year Nepal ranks 89th in innovation inputs, higher than last year and higher compared to 2018.
- As for innovation outputs, Nepal ranks 106th. This position is higher than last year and higher compared to 2018.

3rd
Nepal ranks 3rd among the 16 low-income group economies.

6th
Nepal ranks 6th among the 10 economies in Central and Southern Asia.

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, Nepal's performance matches expectations for its level of development.

The positive relationship between innovation and development

|	
▲ GII score	● Innovation leaders
▶ GDP per capita in PPP$ logarithmic scale	● Performing above expectations for level of development
● Bubbles sized by population	● Performing at expectations for level of development
	● Performing below expectations for level of development

2
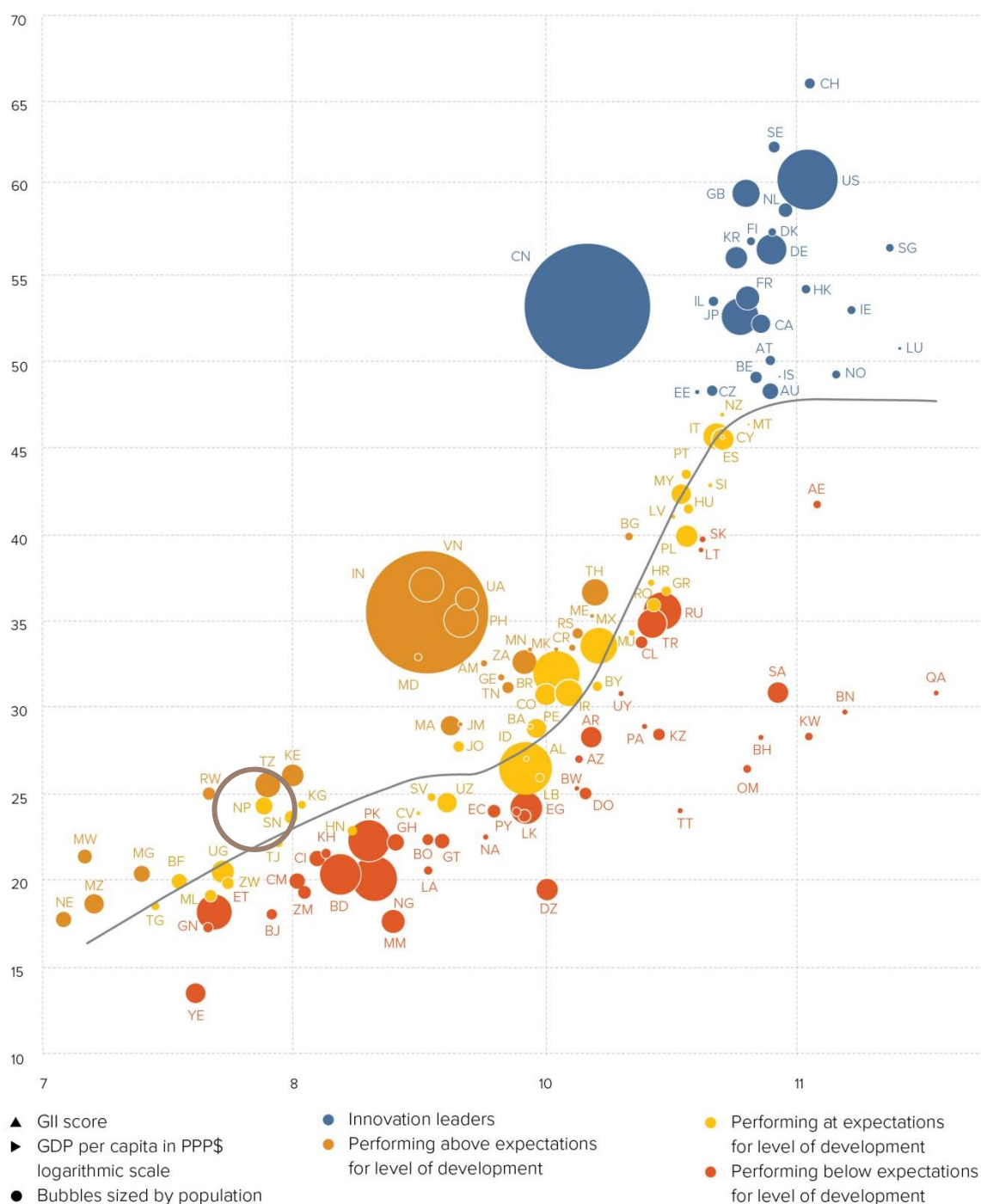
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance, 2020
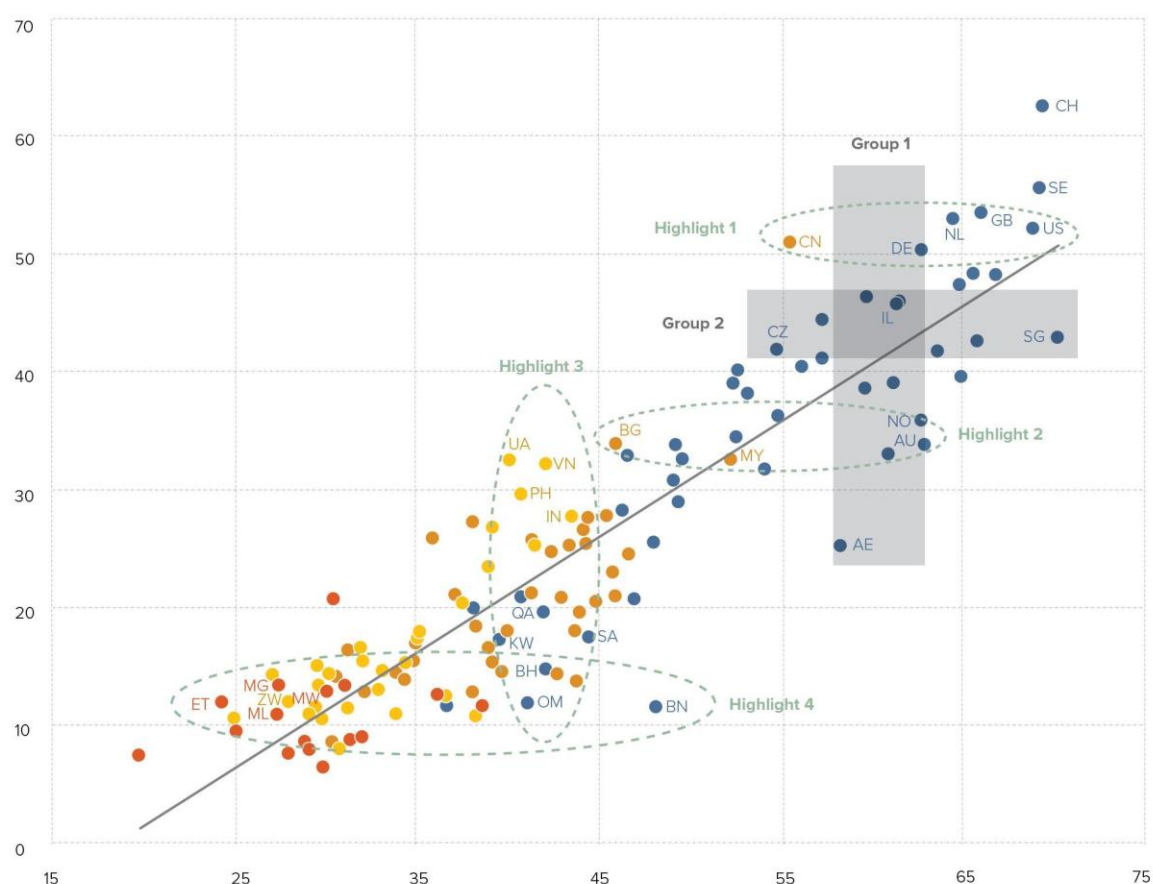
AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

BENCHMARKING NEPAL AGAINST OTHER LOW-INCOME ECONOMIES AND CENTRAL AND SOUTHERN ASIA

Nepal's scores in the seven GII pillars
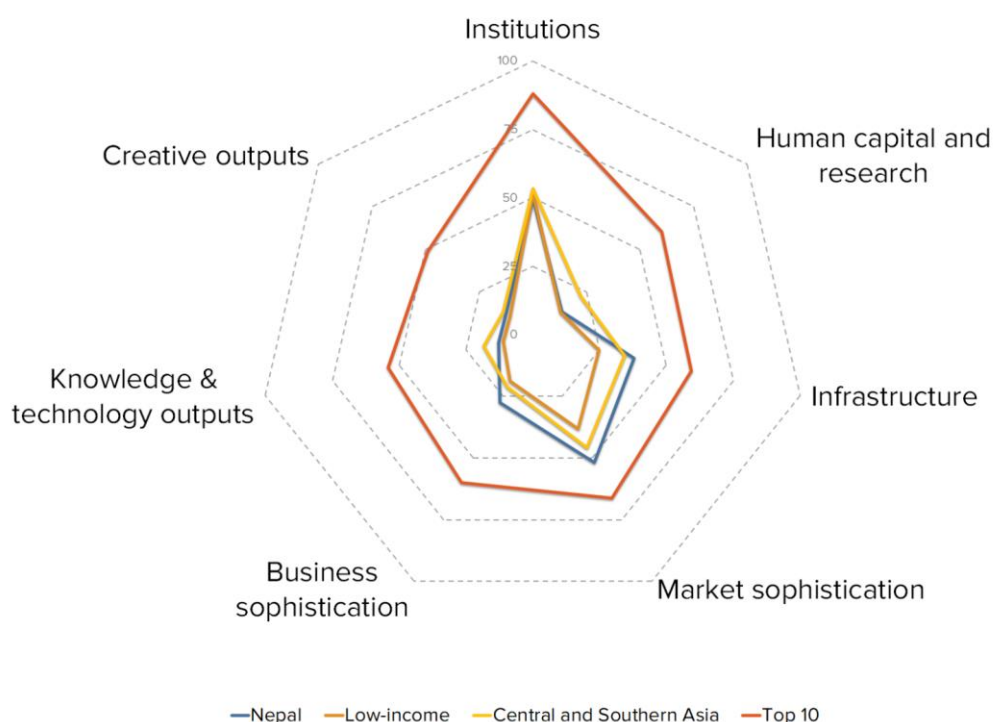
Low-income group economies

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

Conversely, Nepal scores below average for its income group in one pillar: Institutions.

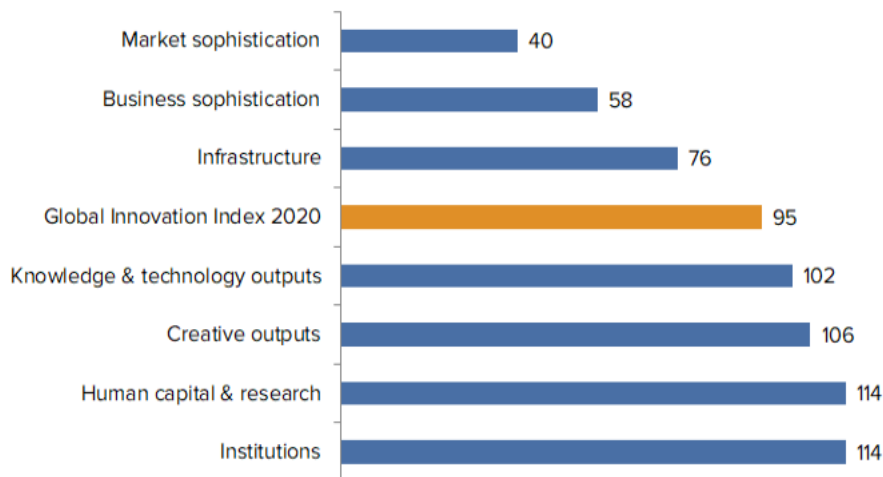**Central and Southern Asia**

Compared to other economies in Central and Southern Asia, Nepal performs:

- above average in three out of the seven GII pillars: Infrastructure, Market sophistication and Business sophistication; and

- below average in four of the seven GII pillars: Institutions, Human capital & research, Knowledge & technology outputs and Creative outputs.

OVERVIEW OF NEPAL RANKINGS IN THE SEVEN GII AREAS

Nepal performs best in Market sophistication and its weakest performance is in Institutions and Human capital & research.

	Rank
Market sophistication	40
Business sophistication	58
Infrastructure	76
Global Innovation Index 2020	95
Knowledge & technology outputs	102
Creative outputs	106
Human capital & research	114
Institutions	114

*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 Nepal in the GII 2020.

	Strengths				Weaknesses	
Code	**Indicator name**	**Rank**		**Code**	**Indicator name**	**Rank**
2.1.1	Expenditure on education, % GDP	39		2.1.5	Pupil-teacher ratio, secondary	117
3.1.4	E-participation*	55		2.2.3	Tertiary inbound mobility, %	112
3.2	General infrastructure	13		2.3.3	Global R&D companies, top 3, mn US$	42
3.2.3	Gross capital formation, % GDP	2		2.3.4	QS university ranking, average score top 3*	77
4	Market sophistication	40		3.2.1	Electricity output, GWh/mn pop	117
4.1	Credit	33		3.3	Ecological sustainability	125
4.1.1	Ease of getting credit*	34		4.3	Trade, competition, and market scale	124
4.1.2	Domestic credit to private sector, % GDP	31		4.3.1	Applied tariff rate, weighted avg., %	126
4.1.3	Microfinance gross loans, % GDP	18		5.3.3	ICT services imports, % total trade	122
5	Business sophistication	58		6.2	Knowledge impact	127
5.3.2	High-tech imports, % total trade	20		6.2.3	Computer software spending, % GDP	117
6.3	Knowledge diffusion	57		7.1.2	Global brand value, top 5,000, % GDP	80
6.3.3	ICT services exports, % total trade	20		7.1.4	ICTs & organizational model creation†	118
7.1.1	Trademarks by origin/bn PPP$ GDP	47				
7.3.4	Mobile app creation/bn PPP$ GDP	46				

STRENGTHS

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

- Human capital & research (114): the indicator Expenditure on education (39) demonstrates a strength.

- Infrastructure (76): shows strengths in the sub-pillar General infrastructure (13) and in the indicators E-participation (55) and Gross capital formation (2).

- Market sophistication (40): has strengths in the sub-pillar Credit (33) and in the indicators Ease of getting credit (34), Domestic credit to private sector (31) and Microfinance gross loans (18).

- Business sophistication (58): displays strengths in the indicator High-tech imports (20).

- Knowledge & technology outputs (102): reveals strengths in the sub-pillar Knowledge diffusion (57) and in the indicator ICT services exports (20).

- Creative outputs (106): demonstrates strengths in the indicators Trademarks by origin (47) and Mobile app creation (46).

WEAKNESSES

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

- Human capital & research (114): has weaknesses in the indicators Pupil–teacher ratio (117), Tertiary inbound mobility (112), Global R&D companies (42) and QS university ranking (77).

- Infrastructure (76): displays weaknesses in the sub-pillar Ecological sustainability (125) and in the indicator Electricity output (117).

- Market sophistication (40): shows weaknesses in the sub-pillar Trade, competition, and market scale (124) and in the indicator Applied tariff rate (126).

- Business sophistication (58): the indicator ICT services imports (122) reveals a weakness.

- Knowledge & technology outputs (102): displays weaknesses in the sub-pillar Knowledge impact (127) and in the indicator Computer software spending (117).

- Creative outputs (106): exhibits weaknesses in the indicators Global brand value (80) and ICTs & organizational model creation (118).

NEPAL

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2019 rank
106	89	Low	CSA	28.6	94.4	2,896.9	109

		Score/Value	Rank	
🏛	**INSTITUTIONS**........................	**49.9**	**114**	
1.1	**Political environment**................................	**40.2**	**119**	
1.1.1	Political and operational stability*..........................	60.7	103	
1.1.2	Government effectiveness*.....................................	30.0	122	
1.2	**Regulatory environment**...........................	**45.1**	**115**	
1.2.1	Regulatory quality*..	22.1	115	
1.2.2	Rule of law*...	34.2	95	
1.2.3	Cost of redundancy dismissal, salary weeks............	27.2	107	◇
1.3	**Business environment**...............................	**64.4**	**86**	
1.3.1	Ease of starting a business*.................................	81.7	104	
1.3.2	Ease of resolving insolvency*...............................	47.2	79	

		Score/Value	Rank	
👥	**HUMAN CAPITAL & RESEARCH**................	**13.6**	**114**	
2.1	**Education**..	**31.8**	**98**	
2.1.1	Expenditure on education, % GDP..........................	5.2	39	●
2.1.2	Government funding/pupil, secondary, % GDP/cap.⊙	10.5	94	
2.1.3	School life expectancy, years...............................	12.8	83	◆
2.1.4	PISA scales in reading, maths, & science................	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary.............................	28.3	117	○
2.2	**Tertiary education**....................................	**7.1**	**119**	
2.2.1	Tertiary enrolment, % gross.................................	12.4	104	
2.2.2	Graduates in science & engineering, %..................	12.9	99	
2.2.3	Tertiary inbound mobility, %.⊙............................	0.0	112	○ ◇
2.3	**Research & development (R&D)**.................	**1.9**	**95**	
2.3.1	Researchers, FTE/mn pop....................................	n/a	n/a	
2.3.2	Gross expenditure on R&D, % GDP.⊙....................	0.3	81	
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	○ ◇

		Score/Value	Rank	
🛠	**INFRASTRUCTURE**.................................	**38.0**	**76**	◆
3.1	**Information & communication technologies (ICTs)**....	**54.2**	**88**	◆
3.1.1	ICT access*..	41.1	104	◆
3.1.2	ICT use*..	28.7	106	◆
3.1.3	Government's online service*................................	68.8	73	◆
3.1.4	E-participation*..	78.1	55	● ◆
3.2	**General infrastructure**.............................	**44.8**	**13**	● ◆
3.2.1	Electricity output, kWh/mn pop............................	158.3	117	○
3.2.2	Logistics performance*..	20.8	107	
3.2.3	Gross capital formation, % GDP............................	62.3	2	● ◆
3.3	**Ecological sustainability**..........................	**15.1**	**125**	○
3.3.1	GDP/unit of energy use..	5.2	108	
3.3.2	Environmental performance*................................	32.7	113	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP.......	0.2	108	

		Score/Value	Rank	
📊	**MARKET SOPHISTICATION**......................	**51.8**	**40**	● ◆
4.1	**Credit**...	**50.6**	**33**	● ◆
4.1.1	Ease of getting credit*...	75.0	34	●
4.1.2	Domestic credit to private sector, % GDP................	87.7	31	● ◆
4.1.3	Microfinance gross loans, % GDP..........................	1.8	18	●
4.2	**Investment**..	**58.0**	**[17]**	
4.2.1	Ease of protecting minority investors*...................	58.0	77	◆
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**.......	**46.7**	**124**	○
4.3.1	Applied tariff rate, weighted avg., %......................	12.4	126	○ ◇
4.3.2	Intensity of local competition+.............................	63.1	92	
4.3.3	Domestic market scale, bn PPP$............................	94.4	84	

		Score/Value	Rank	
🍩	**BUSINESS SOPHISTICATION**....................	**27.5**	**[58]**	
5.1	**Knowledge workers**..................................	**23.5**	**[88]**	
5.1.1	Knowledge-intensive employment, %.⊙..................	13.8	96	◆
5.1.2	Firms offering formal training, %.⊙........................	31.9	46	
5.1.3	GERD performed by business, % GDP......................	n/a	n/a	
5.1.4	GERD financed by business, %...............................	n/a	n/a	
5.1.5	Females employed w/advanced degrees, %.⊙........	3.0	97	◆
5.2	**Innovation linkages**..................................	**23.7**	**[54]**	
5.2.1	University/industry research collaboration+............	32.8	101	
5.2.2	State of cluster development+................................	37.6	106	
5.2.3	GERD financed by abroad, % GDP..........................	n/a	n/a	
5.2.4	JV-strategic alliance deals/bn PPP$ GDP.................	0.0	83	
5.2.5	Patent families 2+ offices/bn PPP$ GDP..................	n/a	n/a	
5.3	**Knowledge absorption**..............................	**35.3**	**[40]**	
5.3.1	Intellectual property payments, % total trade..........	n/a	n/a	
5.3.2	High-tech imports, % total trade.⊙........................	11.6	20	●
5.3.3	ICT services imports, % total trade.⊙.....................	0.2	122	○
5.3.4	FDI net inflows, % GDP..	0.5	122	○
5.3.5	Research talent, % in business enterprise...............	n/a	n/a	

		Score/Value	Rank	
📈	**KNOWLEDGE & TECHNOLOGY OUTPUTS**....	**12.8**	**102**	
6.1	**Knowledge creation**..................................	**8.6**	**[80]**	
6.1.1	Patents by origin/bn PPP$ GDP.⊙..........................	0.3	92	
6.1.2	PCT patents by origin/bn PPP$ GDP.......................	n/a	n/a	
6.1.3	Utility models by origin/bn PPP$ GDP....................	n/a	n/a	
6.1.4	Scientific & technical articles/bn PPP$ GDP.............	6.6	70	
6.1.5	Citable documents H-index..................................	7.6	86	
6.2	**Knowledge impact**....................................	**3.9**	**127**	○ ◇
6.2.1	Growth rate of PPP$ GDP/worker, %........................	n/a	n/a	
6.2.2	New businesses/th pop. 15-64...............................	1.3	75	◆
6.2.3	Computer software spending, % GDP......................	0.0	117	○
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP.............	1.1	102	
6.2.5	High- and medium-high-tech manufacturing, %.⊙....	6.7	94	
6.3	**Knowledge diffusion**.................................	**25.9**	**57**	● ◆
6.3.1	Intellectual property receipts, % total trade............	n/a	n/a	
6.3.2	High-tech net exports, % total trade.⊙...................	0.1	113	
6.3.3	ICT services exports, % total trade.⊙.....................	4.2	20	● ◆
6.3.4	FDI net outflows, % GDP.......................................	0.5	76	

		Score/Value	Rank	
⚜	**CREATIVE OUTPUTS**................................	**12.3**	**106**	
7.1	**Intangible assets**......................................	**17.2**	**103**	
7.1.1	Trademarks by origin/bn PPP$ GDP.⊙....................	50.5	47	● ◆
7.1.2	Global brand value, top 5,000, % GDP....................	0.0	80	○ ◇
7.1.3	Industrial designs by origin/bn PPP$ GDP.⊙...........	0.2	101	
7.1.4	ICTs & organizational model creation+...................	37.9	118	○
7.2	**Creative goods and services**.....................	**4.0**	**[107]**	
7.2.1	Cultural & creative services exports, % total trade.......	n/a	n/a	
7.2.2	National feature films/mn pop. 15-69.....................	n/a	n/a	
7.2.3	Entertainment & Media market/th pop. 15-69..........	n/a	n/a	
7.2.4	Printing and other media, % manufacturing.⊙..........	0.4	92	◇
7.2.5	Creative goods exports, % total trade.⊙..................	0.2	75	
7.3	**Online creativity**......................................	**10.8**	**83**	◆
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69..........	0.5	110	
7.3.2	Country-code TLDs/th pop. 15-69...........................	1.0	84	
7.3.3	Wikipedia edits/mn pop. 15-69..............................	35.8	88	◆
7.3.4	Mobile app creation/bn PPP$ GDP.........................	9.3	46	● ◆

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 Nepal.

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
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2017	UNESCO Institute for Statistics
5.2.5	Patent families 2+ offices/bn PPP$ GDP	n/a	2016	World Intellectual Property Organization
5.3.1	Intellectual property payments, % total trade	n/a	2018	World Trade Organization
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.1.2	PCT patents by origin/bn PPP$ GDP	n/a	2019	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2018	World Intellectual Property Organization
6.2.1	Growth rate of PPP$ GDP/worker, %	n/a	2019	The Conference Board
6.3.1	Intellectual property receipts, % total trade	n/a	2018	World Trade Organization
7.2.1	Cultural & creative services exports, % total trade	n/a	2018	World Trade Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC

Outdated data

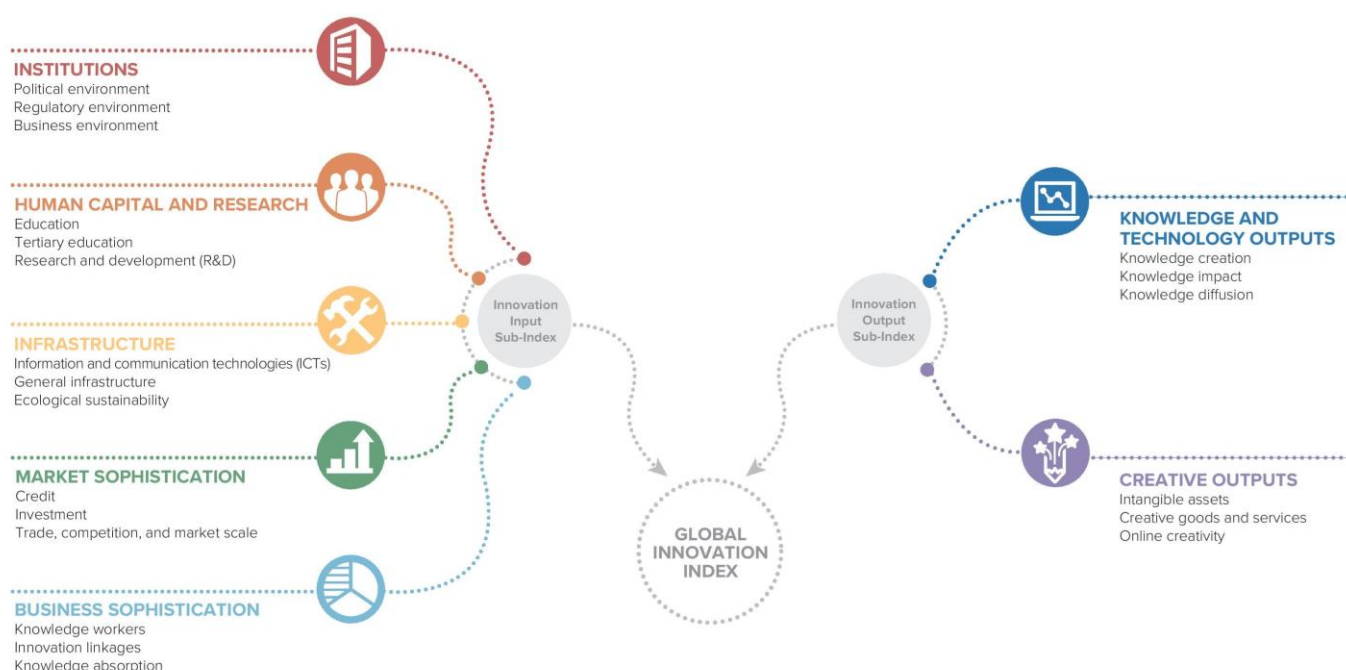| Code	Indicator name	Country year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2016	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2011	2017	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2010	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.1	Knowledge-intensive employment, %	2017	2018	International Labour Organization
5.1.2	Firms offering formal training, %	2012	2018	World Bank
5.1.5	Females employed w/advanced degrees, %	2017	2018	International Labour Organization
5.3.2	High-tech imports, % total trade	2017	2018	United Nations, COMTRADE
5.3.3	ICT services imports, % total trade	2017	2018	World Trade Organization
6.1.1	Patents by origin/bn PPP$ GDP	2017	2018	World Intellectual Property Organization
6.2.5	High- & medium-high-tech manufacturing, %	2011	2017	United Nations Industrial Development Organization
6.3.2	High-tech net exports, % total trade	2017	2018	United Nations, COMTRADE
6.3.3	ICT services exports, % total trade	2017	2018	World Trade Organization
7.1.1	Trademarks by origin/bn PPP$ GDP	2017	2018	World Intellectual Property Organization
7.1.3	Industrial designs by origin/bn PPP$ GDP	2017	2018	World Intellectual Property Organization
7.2.4	Printing & other media, % manufacturing	2011	2017	United Nations Industrial Development Organization
7.2.5	Creative goods exports, % total trade	2017	2018	United Nations, COMTRADE

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

INSTITUTIONS
Political environment
Regulatory environment
Business environment

HUMAN CAPITAL AND RESEARCH
Education
Tertiary education
Research and development (R&D)

INFRASTRUCTURE
Information and communication technologies (ICTs)
General infrastructure
Ecological sustainability

MARKET SOPHISTICATION
Credit
Investment
Trade, competition, and market scale

BUSINESS SOPHISTICATION
Knowledge workers
Innovation linkages
Knowledge absorption

Innovation Input Sub-Index

Innovation Output Sub-Index

KNOWLEDGE AND TECHNOLOGY OUTPUTS
Knowledge creation
Knowledge impact
Knowledge diffusion

CREATIVE OUTPUTS
Intangible assets
Creative goods and services
Online creativity

GLOBAL INNOVATION INDEX

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.