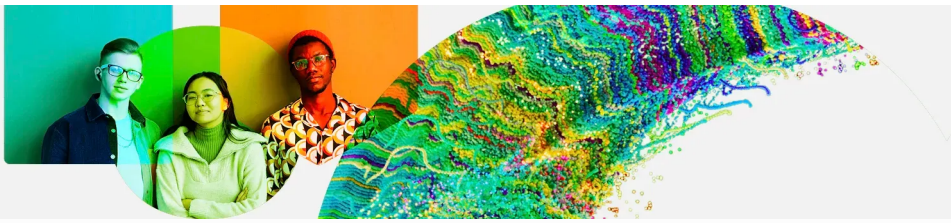
Global Innovation Index 2024



Nepal ranking in the Global Innovation Index 2024

Nepal ranks 109th among the 133 economies featured in the GII 2024.

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.

Nepal ranks 24th among the 38 lower-middle-income group economies.

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

Nepal GII Ranking (2020-2024)

The table shows the rankings of Nepal over the past four years. 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 2024 is between ranks 104 and 112.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	95th	89th	106th
2021	111st	99th	116th
2022	111st	106th	111st
2023	108th	106th	103rd
2024	109th	110th	102nd

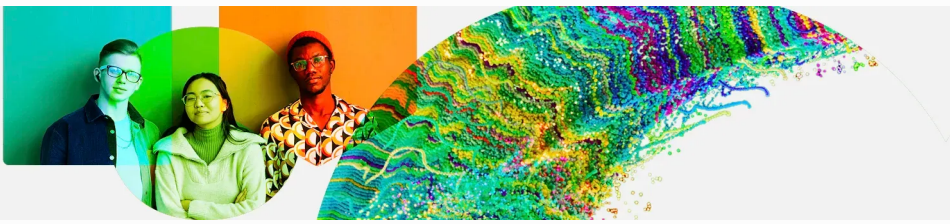
Nepal performs better in innovation outputs than innovation inputs in 2024.

This year **Nepal ranks 110th in innovation inputs.** This position is lower than last year.

Nepal ranks 102nd in innovation outputs. This position is higher than last year.

Nepal has no clusters in the top 100 S&T clusters of the Global Innovation Index.

Global Innovation Index 2024



> Global Innovation Tracker

The Global Innovation Tracker 2024 shows what is the current state of innovation in Nepal, how rapidly is technology being embraced and what are the resulting societal impacts.

For Nepal, 1 indicator has improved in the short-term and 4 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -17% 2022 - 2023	n/a	n/a	n/a	n/a
▲ 11% 2013 - 2023	n/a	n/a	n/a	n/a

Technology adoption

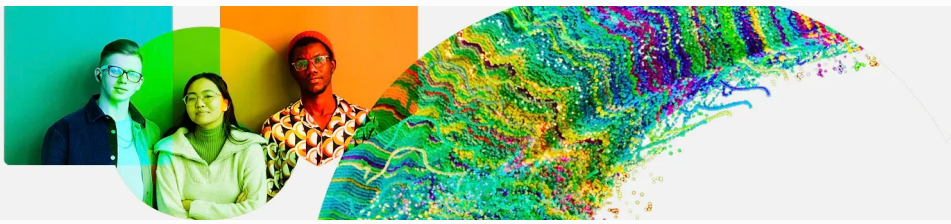
Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
▼ -0.1% 2021 - 2022	▼ -2.3% 2020 - 2021	n/a	n/a	n/a
▲ 5% 2012 - 2022	▲ 28.4% 2011 - 2021		n/a	n/a
50.6 per 100 inhabitants in 2022	4.2 per 100 inhabitants in 2021	n/a		n/a

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
n/a	▲ 3% 2021 - 2022	▲ 1.3°C 2023
n/a	▲ 0.4% 2012 - 2022	n/a
	70.5 years in 2022	

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the country from 1951–1980. Figures are rounded.

Global Innovation Index 2024



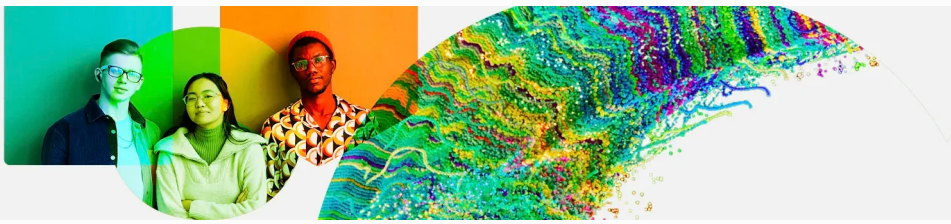
Expected vs. observed innovation performance

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 is at expectations for its level of development.

> Innovation overperformers relative to their economic development

Global Innovation Index 2024



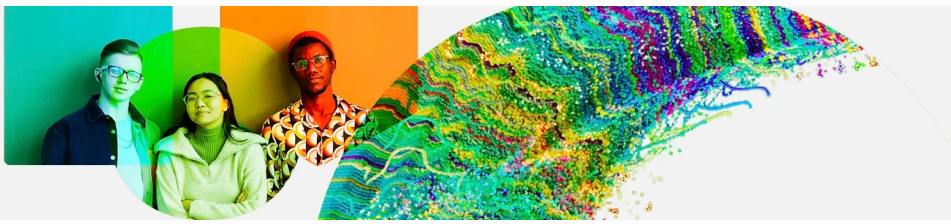
Effectively translating innovation investments into innovation outputs

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.

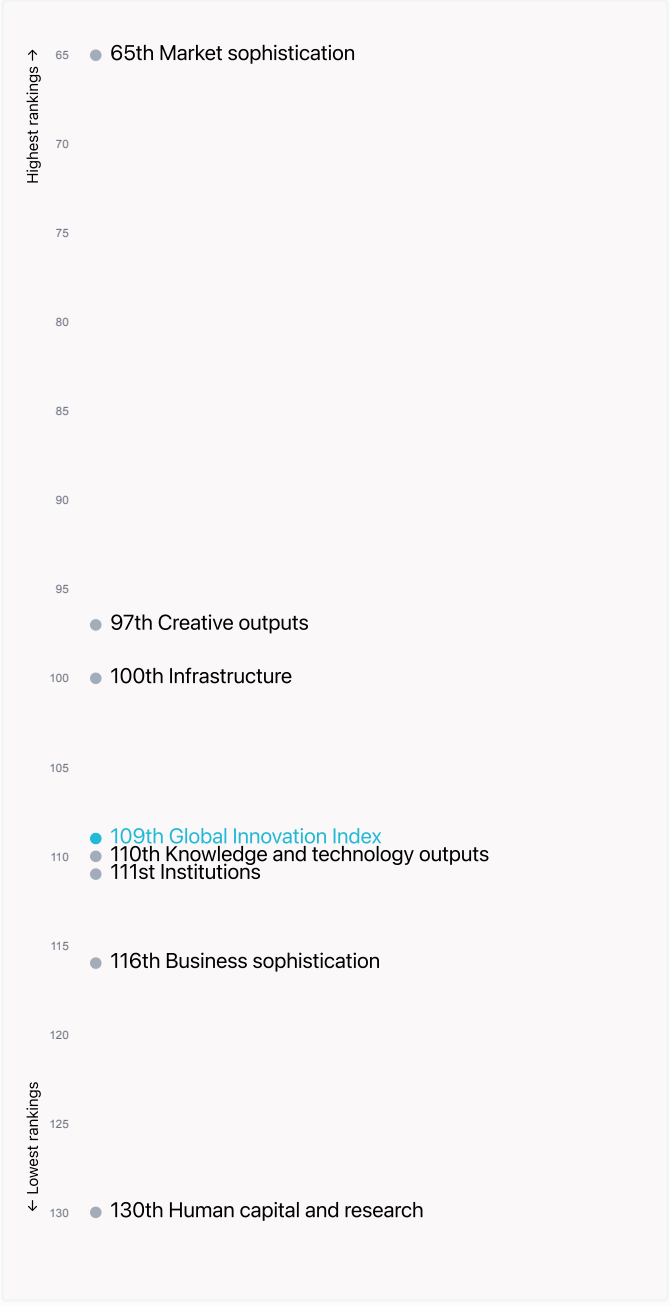
> Relationship between innovation inputs and outputs

Global Innovation Index 2024



Overview of Nepal's rankings in the seven areas of the GII in 2024

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Nepal are those that rank above the GII (shown in blue) and the weakest are those that rank below.



Highest rankings

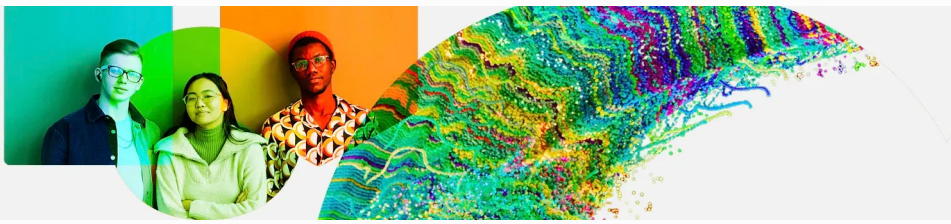
Nepal ranks highest in Market sophistication (65th), Creative outputs (97th) and Infrastructure (100th).

Lowest rankings

Nepal ranks lowest in Human capital and research (130th), Business sophistication (116th) and Institutions (111st).

The full WIPO Intellectual Property Statistics profile for Nepal can be found on this link.

Global Innovation Index 2024



Benchmark of Nepal against other economy groupings for each of the seven areas of the GII Index

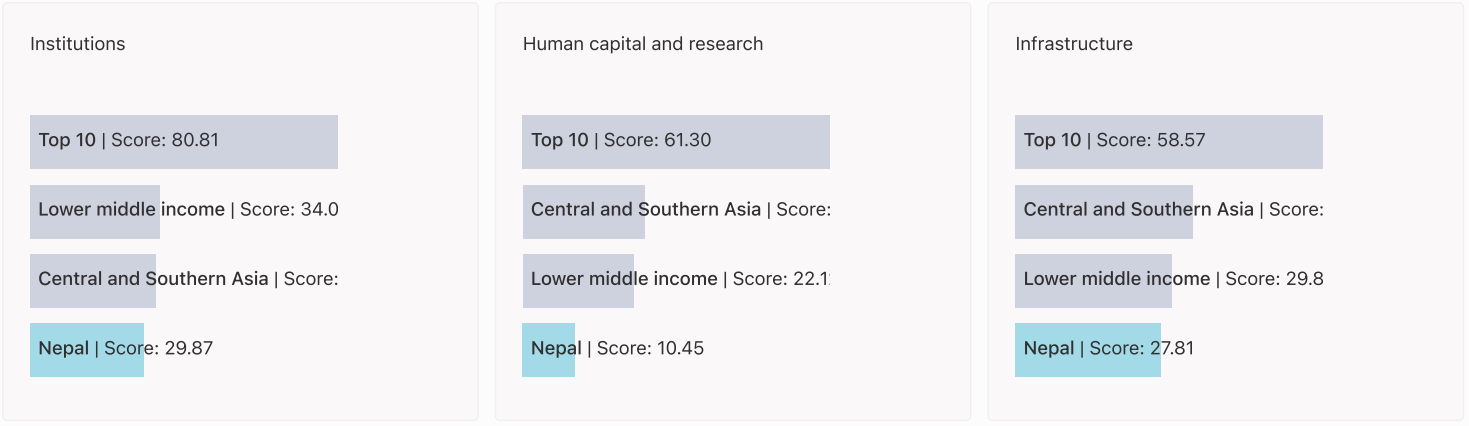
The charts shows the relative position of Nepal (blue bar) against other economy groupings (grey bars), for each of the seven areas of the GII Index.

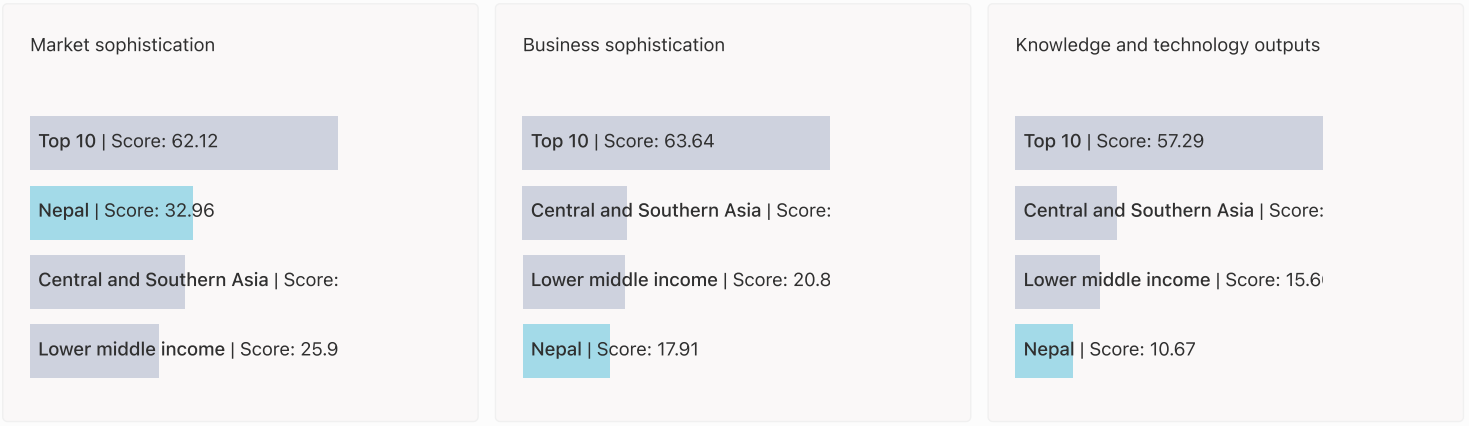
Lower-Middle-Income economies

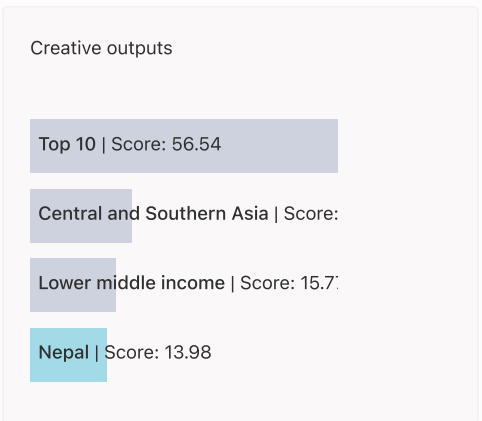
Nepal performs above the lower-middle-income group average in Market sophistication.

Central And Southern Asia

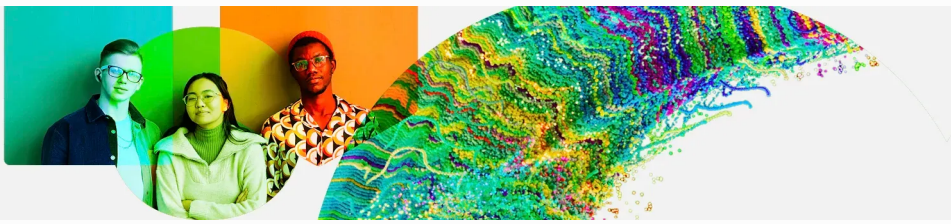
Nepal performs above the regional average in Market sophistication.







Global Innovation Index 2024



Innovation strengths and weaknesses in Nepal

The table below gives an overview of the indicator strengths and weaknesses of Nepal in the GII 2024.

Nepal's main innovation strengths are **Loans from microfinance institutions, % GDP** (rank 1), **Gross capital formation, % GDP** (rank 11) and **Domestic credit to private sector, % GDP** (rank 26).

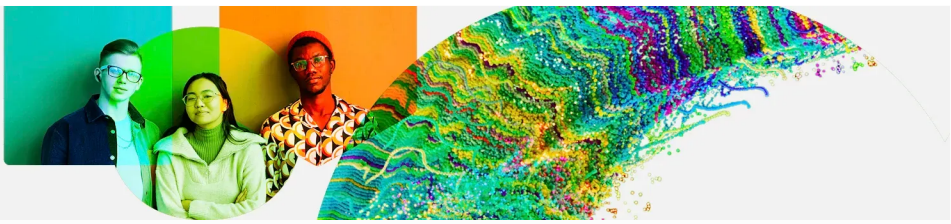
Strengths

Rank	Code	Indicator name
1	4.1.3	Loans from microfinance institutions, % GDP
11	3.2.3	Gross capital formation, % GDP
26	4.1.2	Domestic credit to private sector, % GDP
28	3.3.2	Low-carbon energy use, %
33	5.3.2	High-tech imports, % total trade
47	7.1.2	Trademarks by origin/bn PPP$ GDP
49	7.3.3	Mobile app creation/bn PPP$ GDP
50	4.3.2	Domestic industry diversification
54	5.2.1	Public Research-Industry co-publications, %
71	6.3.5	ISO 9001 quality/bn PPP$ GDP

Weaknesses

Rank	Code	Indicator name
132	4.3.1	Applied tariff rate, weighted avg., %
132	5.3.3	ICT services imports, % total trade
129	6.3.3	High-tech exports, % total trade
125	2.1.5	Pupil–teacher ratio, secondary
102	5.2.5	Patent families/bn PPP$ GDP
89	2.1.2	Government funding/pupil, secondary, % GDP/cap
75	7.1.3	Global brand value, top 5,000, % GDP
75	2.3.4	QS university ranking, top 3*
49	6.2.2	Unicorn valuation, % GDP
41	2.3.3	Global corporate R&D investors, top 3, mn USD

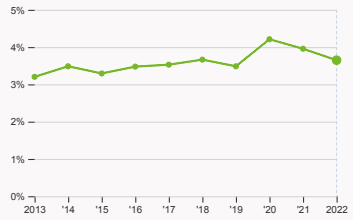
Global Innovation Index 2024



Nepal's innovation system

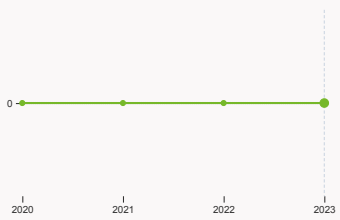
As far as practicable, the plots below present unscaled indicator data.

Innovation inputs in Nepal



2.1.1 Expenditure on education

was equal to 3.65 % GDP in 2022, down by 0.31 percentage points from the year prior – and equivalent to an indicator rank of 85.

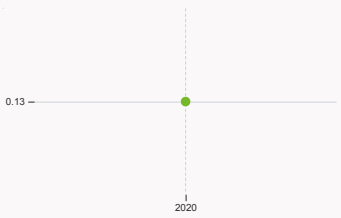


2.3.4 QS university ranking

was equal to an average score of 0 for the top three universities in 2023 with no change from the year prior – and equivalent to an indicator rank of 75.

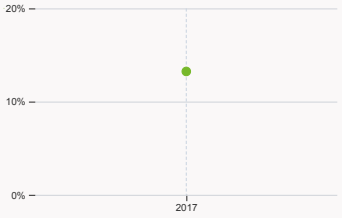
4.2.4 VC received, value

was equal to 500 USD in 2021, down by 50% from the year prior – and equivalent to an indicator rank of 99.



4.3.2 Domestic industry diversification

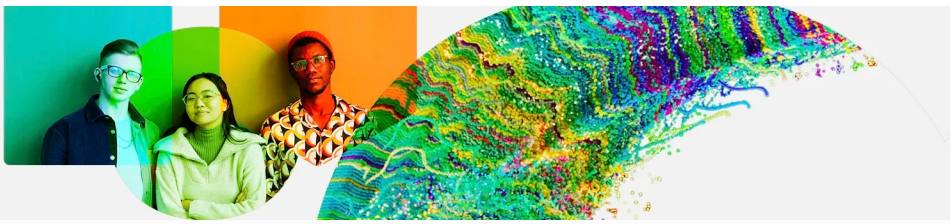
was equal to an index score of 0.13 in 2020 – and equivalent to an indicator rank of 50.



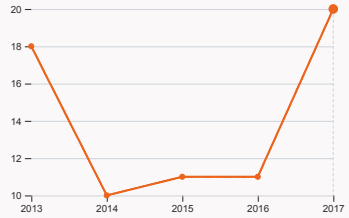
5.1.1 Knowledge-intensive employment

was equal to 13.23 % in 2017 – and equivalent to an indicator rank of 99.

Global Innovation Index 2024

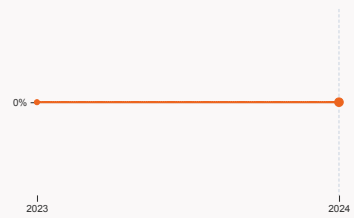


Innovation outputs in Nepal



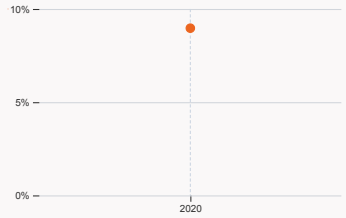
6.1.1 Patents by origin

was equal to 20 patents in 2017, up by 81.82% from the year prior – and equivalent to an indicator rank of 99.



6.2.2 Unicorn valuation

was equal to 0 % GDP in 2024 with no change from the year prior – and equivalent to an indicator rank of 49.

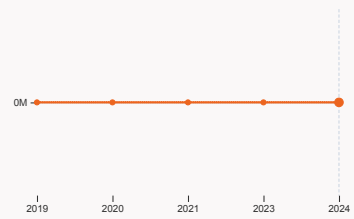


6.2.4 High-tech manufacturing

was equal to 8.97 % of total manufacturing output in 2020 – and equivalent to an indicator rank of 91.

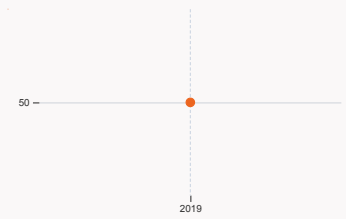
6.3.3 High-tech exports

was equal to 2.89 million USD in 2022, down by 59.35% from the year prior – and equivalent to an indicator rank of 129.



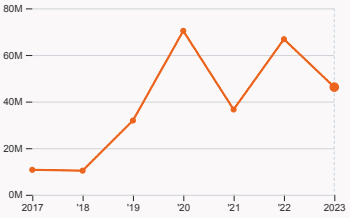
7.1.3 Global brand value

was equal to 0 million USD for the brands in the top 5,000 in 2024 with no change from the year prior – and equivalent to an indicator rank of 75.



7.2.2 National feature films

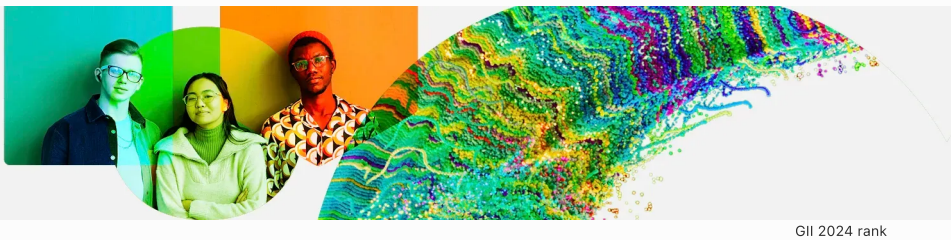
was equal to 50 films in 2019 – and equivalent to an indicator rank of 47.



7.3.3 Mobile app creation

was equal to 46.21 million global downloads of mobile apps in 2023, down by 30.8% from the year prior – and equivalent to an indicator rank of 49.

Global Innovation Index 2024



Nepal

GII 2024 rank **109**

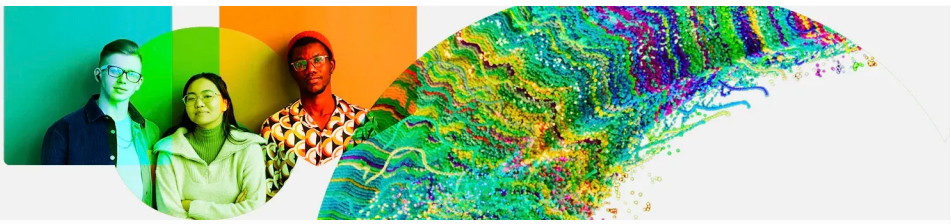
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
102	110	Lower middle	CSA	29.7	150.8	4,934.2

	Score / Value	Rank	
Institutions	**29.9**	**111**	
1.1 Institutional environment	**33**	**110**	
1.1.1 Operational stability for businesses*	46	104	
1.1.2 Government effectiveness*	20	123	
1.2 Regulatory environment	**27.9**	**101**	
1.2.1 Regulatory quality*	24.8	108	
1.2.2 Rule of law*	31	89	
1.3 Business environment	**28.7**	**[103]**	
1.3.1 Policy stability for doing business†	28.7	105	
1.3.2 Entrepreneurship policies and culture†	n/a	n/a	
Human capital and research	**10.5**	**[130]**	
2.1 Education	**24.7**	**128**	○ ◇
2.1.1 Expenditure on education, % GDP	3.6	85	
2.1.2 Government funding/pupil, secondary, % GDP/cap	9.4	89	○
2.1.3 School life expectancy, years	12.6	89	
2.1.4 PISA scales in reading, maths and science	n/a	n/a	
2.1.5 Pupil–teacher ratio, secondary	37.2	125	○ ◇
2.2 Tertiary education	**6.7**	**[119]**	
2.2.1 Tertiary enrolment, % gross	14	110	
2.2.2 Graduates in science and engineering, %	n/a	n/a	
2.2.3 Tertiary inbound mobility, %	n/a	n/a	
2.3 Research and development (R&D)	**0**	**[120]**	
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a	
2.3.3 Global corporate R&D investors, top 3, mn USD	0	41	○ ◇
2.3.4 QS university ranking, top 3*	0	75	○ ◇
Infrastructure	**27.8**	**100**	
3.1 Information and communication technologies (ICTs)	**31.8**	**119**	◇
3.1.1 ICT access*	33.1	122	◇
3.1.2 ICT use*	n/a	n/a	
3.1.3 Government's online service*	40.2	110	
3.1.4 E-participation*	22.1	121	
3.2 General infrastructure	**33.9**	**55**	● ◆
3.2.1 Electricity output, GWh/mn pop.	322	115	
3.2.2 Logistics performance*	n/a	n/a	
3.2.3 Gross capital formation, % GDP	35.4	11	● ◆
3.3 Ecological sustainability	**17.7**	**73**	
3.3.1 GDP/unit of energy use	6.6	103	
3.3.2 Low-carbon energy use, %	32.9	28	● ◆
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.4	102	
Market sophistication	**33**	**65**	● ◆
4.1 Credit	**67**	**6**	● ◆
4.1.1 Finance for startups and scaleups†	n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP	95.3	26	● ◆
4.1.3 Loans from microfinance institutions, % GDP	9.1	1	● ◆
4.2 Investment	**0.9**	**[112]**	
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.3 VC recipients, deals/bn PPP$ GDP	0.008	101	
4.2.4 VC received, value, % GDP	0.00001	99	
4.3 Trade, diversification and market scale	**31**	**113**	
4.3.1 Applied tariff rate, weighted avg., %	12.2	132	○ ◇
4.3.2 Domestic industry diversification	85.9	50	● ◆
4.3.3 Domestic market scale, bn PPP$	150.8	80	

	Score / Value	Rank	
Business sophistication	**17.9**	**[116]**	
5.1 Knowledge workers	**13.6**	**[115]**	
5.1.1 Knowledge-intensive employment, %	13.2	99	
5.1.2 Firms offering formal training, %	14.1	90	
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, %	2.9	106	
5.2 Innovation linkages	**17.8**	**93**	
5.2.1 Public Research-Industry co-publications, %	1.7	54	● ◆
5.2.2 University-industry R&D collaboration†	31.9	95	
5.2.3 State of cluster development†	33.2	96	
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.01	71	
5.2.5 Patent families/bn PPP$ GDP	0	102	○ ◇
5.3 Knowledge absorption	**22.4**	**[81]**	
5.3.1 Intellectual property payments, % total trade	n/a	n/a	
5.3.2 High-tech imports, % total trade	10.7	33	● ◆
5.3.3 ICT services imports, % total trade	0.1	132	○ ◇
5.3.4 FDI net inflows, % GDP	0.4	114	
5.3.5 Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs	**10.7**	**[110]**	
6.1 Knowledge creation	**10.4**	**[81]**	
6.1.1 Patents by origin/bn PPP$ GDP	0.2	99	
6.1.2 PCT patents by origin/bn PPP$ GDP	n/a	n/a	
6.1.3 Utility models by origin/bn PPP$ GDP	-	-	
6.1.4 Scientific and technical articles/bn PPP$ GDP	9.3	75	
6.1.5 Citable documents H-index	8.2	86	
6.2 Knowledge impact	**14.8**	**123**	
6.2.1 Labor productivity growth, %	0.5	73	
6.2.2 Unicorn valuation, % GDP	0	49	○ ◇
6.2.3 Software spending, % GDP	0.02	123	◇
6.2.4 High-tech manufacturing, %	9	91	
6.3 Knowledge diffusion	**6.8**	**[109]**	
6.3.1 Intellectual property receipts, % total trade	n/a	n/a	
6.3.2 Production and export complexity	n/a	n/a	
6.3.3 High-tech exports, % total trade	0.03	129	○
6.3.4 ICT services exports, % total trade	1.3	72	
6.3.5 ISO 9001 quality/bn PPP$ GDP	3.5	71	● ◆
Creative outputs	**14**	**97**	
7.1 Intangible assets	**10.4**	**98**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	40.7	47	● ◆
7.1.3 Global brand value, top 5,000, % GDP	0	75	○ ◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.2	105	
7.2 Creative goods and services	**9.7**	**[76]**	
7.2.1 Cultural and creative services exports, % total trade	n/a	n/a	
7.2.2 National feature films/mn pop. 15–69	2.7	47	
7.2.3 Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4 Creative goods exports, % total trade	0.2	76	
7.3 Online creativity	**25.3**	**66**	● ◆
7.3.1 Top-level domains (TLDs)/th pop. 15–69	1	96	
7.3.2 GitHub commits/mn pop. 15–69	4.9	75	
7.3.3 Mobile app creation/bn PPP$ GDP	70.2	49	● ◆

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question, 🕓 that the economy's data is outdated. Square brackets [ ] indicate the the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level; n/a represents missing values; a dash - indicates an indicator which is not relevant to this economy and thus not considered for DMC thresholds.

Global Innovation Index 2024



Data availability

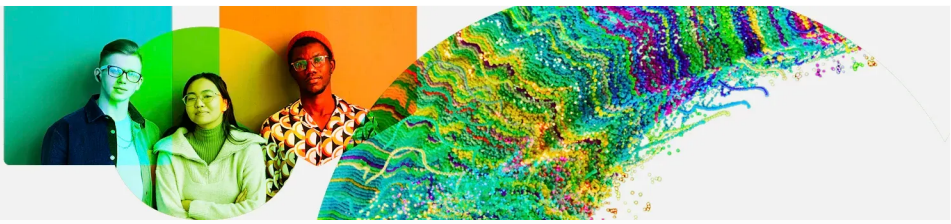
The following tables list indicators that are either missing or outdated for Nepal.

Nepal has missing data for twenty two indicators and outdated data for fourteen indicators.

Missing data for Nepal

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture†	n/a	2023	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2022	OECD, PISA
2.2.2	Graduates in science and engineering, %	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD
2.2.3	Tertiary inbound mobility, %	n/a	2022	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	n/a	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.1.2	ICT use*	n/a	2022	World Intellectual Property Organization; International Telecommunication Union ITU DataHub (accessed May 1st, 2024)
3.2.2	Logistics performance*	n/a	2023	World Bank, Logistics Performance Index 2023 (https://lpi.worldbank.org/); and World Bank 2023, Connecting to Compete 2023: Trade Logistics in the Global Economy The Logistics Performance Index and its Indicators.
4.1.1	Finance for startups and scaleups†	n/a	2023	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
4.2.2	Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	2023	LSEG Data & Analytics; International Monetary Fund
5.1.3	GERD performed by business, % GDP	n/a	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.1	Intellectual property payments, % total trade	n/a	2022	World Trade Organization Global Services Trade Data Hub
5.3.5	Research talent, % in businesses	n/a	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2024

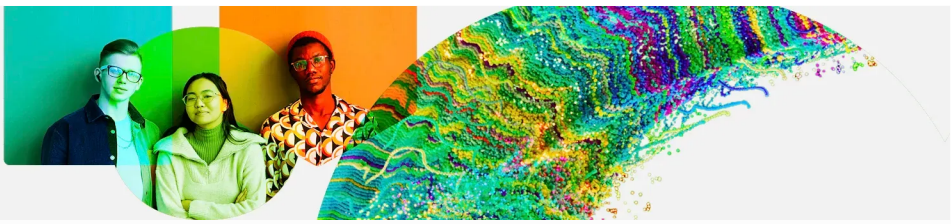


Code	Indicator name	Economy Year	Model Year	Source
6.1.2	PCT patents by origin/bn PPP$ GDP	n/a	2023	World Intellectual Property Organization; International Monetary Fund
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund
6.3.1	Intellectual property receipts, % total trade	n/a	2022	World Trade Organization Global Services Trade Data Hub
6.3.2	Production and export complexity	n/a	2021	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2023	Brand Finance
7.2.1	Cultural and creative services exports, % total trade	n/a	2022	World Trade Organization Global Services Trade Data Hub
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2023	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

Outdated data for Nepal

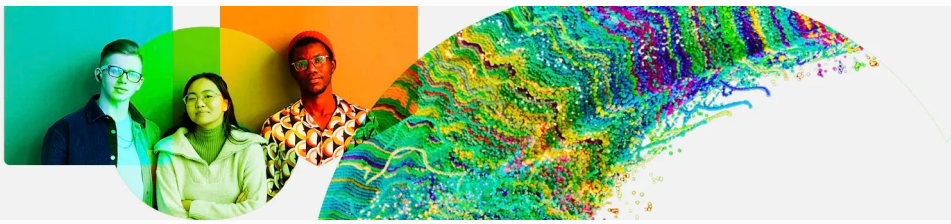
Code	Indicator name	Economy Year	Model Year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2020	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2020	2022	UNESCO Institute for Statistics
3.1.1	ICT access*	2021	2022	World Intellectual Property Organization; International Telecommunication Union ITU DataHub (accessed May 1st, 2024)
3.2.1	Electricity output, GWh/mn pop.	2021	2022	International Energy Agency
4.2.3	VC recipients, deals/bn PPP$ GDP	2021	2023	LSEG Data & Analytics; International Monetary Fund
4.2.4	VC received, value, % GDP	2021	2023	LSEG Data & Analytics; International Monetary Fund
4.3.2	Domestic industry diversification	2020	2021	United Nations Industrial Development Organization (UNIDO), Industrial Statistics Database (INDSTAT) Rev.3 and 4
5.1.1	Knowledge-intensive employment, %	2017	2022	International Labour Organization
5.1.5	Females employed w/advanced degrees, %	2017	2023	International Labour Organization
6.1.1	Patents by origin/bn PPP$ GDP	2017	2022	World Intellectual Property Organization; International Monetary Fund
6.2.4	High-tech manufacturing, %	2020	2021	United Nations Industrial Development Organization
7.1.2	Trademarks by origin/bn PPP$ GDP	2017	2022	World Intellectual Property Organization; International Monetary Fund

Global Innovation Index 2024



Code	Indicator name	Economy Year	Model Year	Source
7.1.4	Industrial designs by origin/bn PPP$ GDP	2017	2022	World Intellectual Property Organization; International Monetary Fund
7.2.2	National feature films/mn pop. 15–69	2019	2022	OMDIA; United Nations, World Population Prospects

Global Innovation Index 2024



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 Database, WIPO, 2024.

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.