

Global Innovation Index 2023

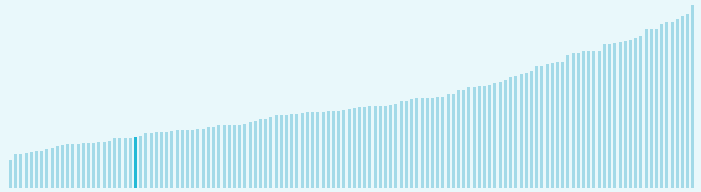


The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

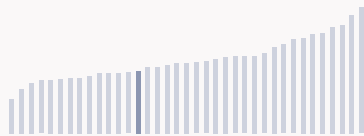
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation.**

Nepal ranking in the Global Innovation Index 2023

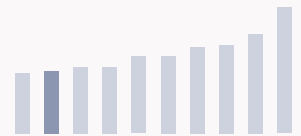
> Nepal ranks **108th** among the 132 economies featured in the GII 2023.



> Nepal ranks **24th** among the 37 lower-middle-income group economies.



> Nepal ranks **9th** among the 10 economies in Central and Southern Asia.



> Nepal GII Ranking (2020-2023)

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 2023 is between ranks 103 and 110.

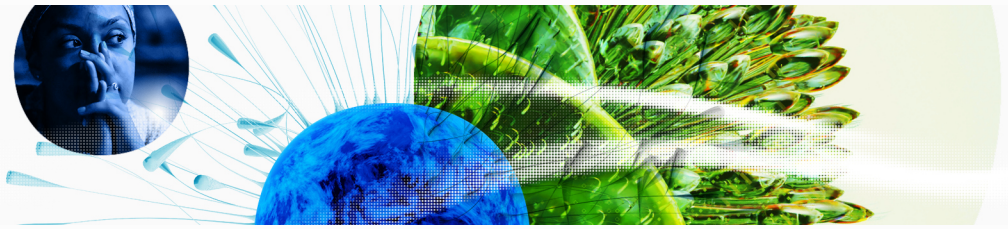
	GII Position	Innovation Inputs	Innovation Outputs
2020	95th	89th	106th
2021	111st	99th	116th
2022	111st	106th	111st
2023	108th	106th	103rd

Nepal performs better in innovation outputs than innovation inputs in 2023.

This year Nepal ranks **106th** in innovation inputs. This position is the same as last year.

Nepal ranks **103rd** in innovation outputs. This position is higher than last year.

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→ Expected vs. observed innovation performance

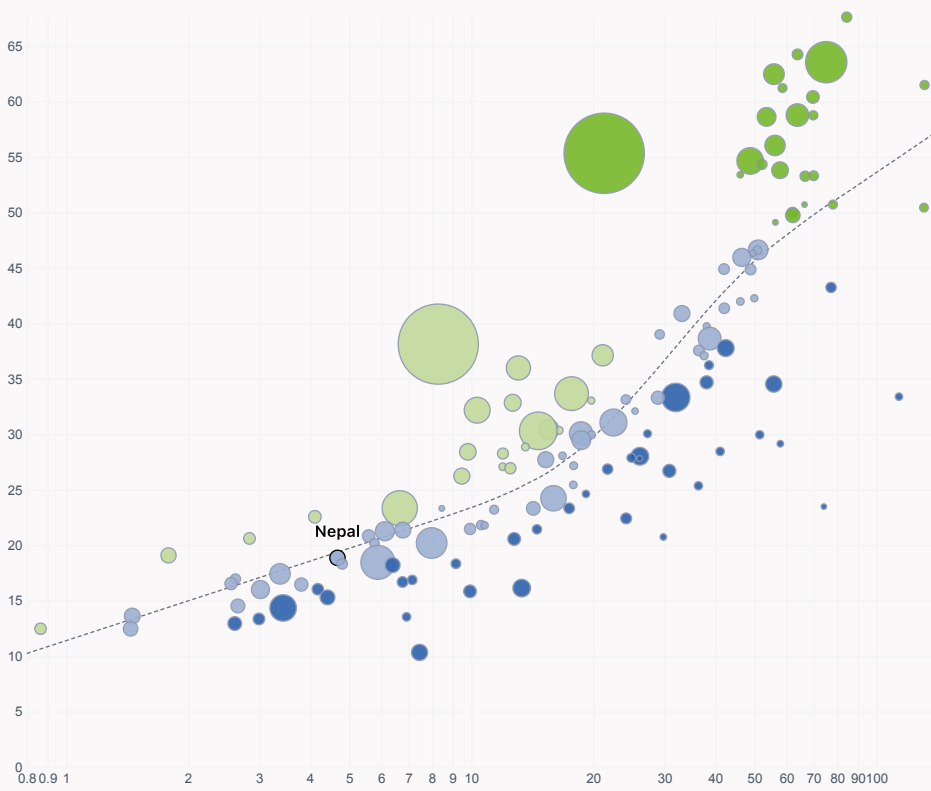
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected 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

↑ **GII Score**



- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



→ GDP per capita, PPP logarithmic scale (thousands of \$)

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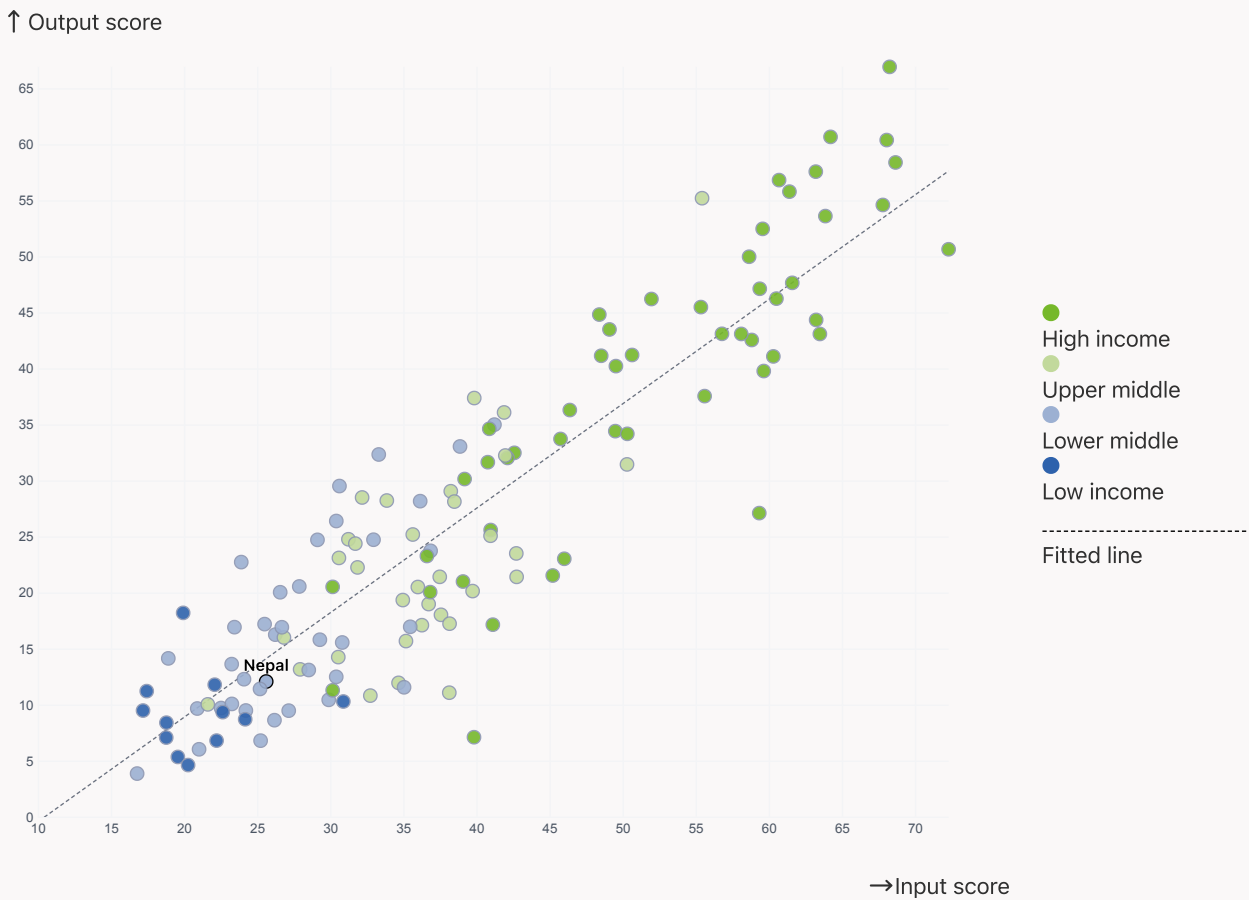
→ Effectively translating innovation investments into innovation outputs

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.

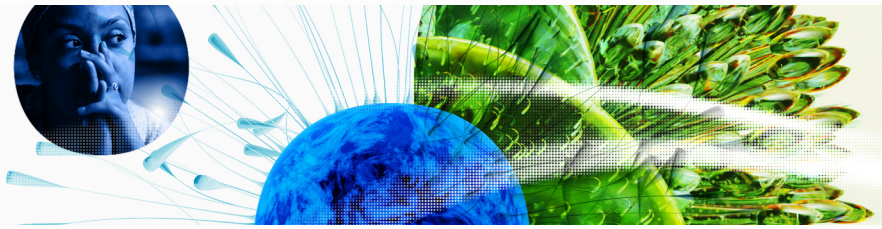


> Nepal produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

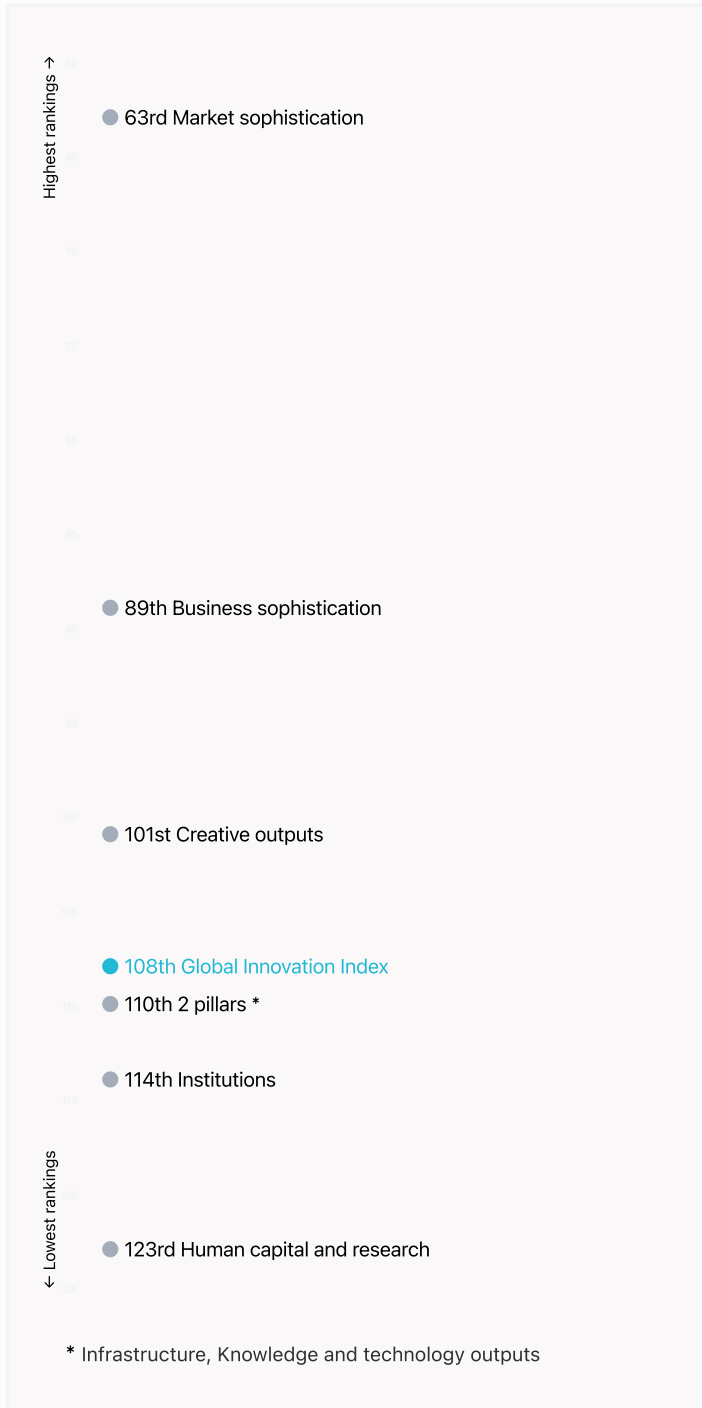


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→ Overview of Nepal's rankings in the seven areas of the GII in 2023

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 (63rd), Business sophistication (89th) and Creative outputs (101st).

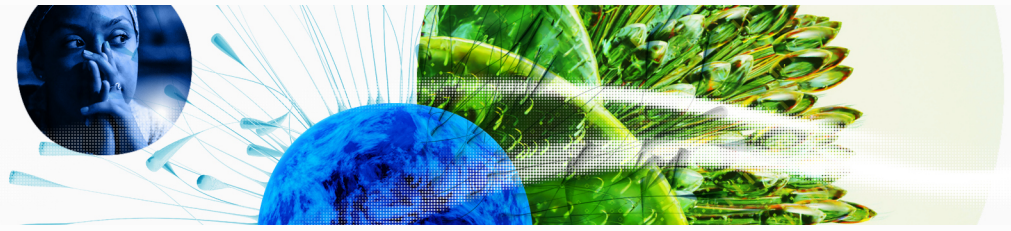
> Lowest rankings



Nepal ranks lowest in Human capital and research (123rd), Institutions (114th) and Infrastructure, Knowledge and technology outputs (110th).

The full WIPO Intellectual Property Statistics profile for Nepal can be found on [this link](#).

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

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

> Lower-Middle-Income economies

Nepal performs below the lower-middle-income group average in Knowledge and technology outputs, Creative outputs, Human capital and research, Infrastructure, Institutions.

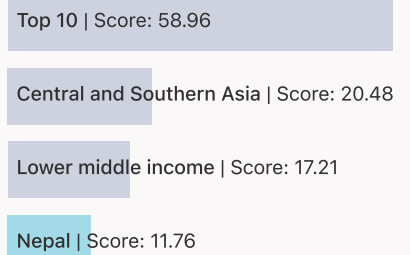


> Central And Southern Asia

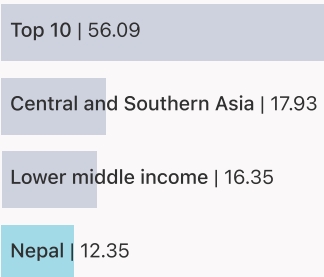
Nepal performs below the regional average in Knowledge and technology outputs, Creative outputs, Human capital and research, Infrastructure, Institutions.



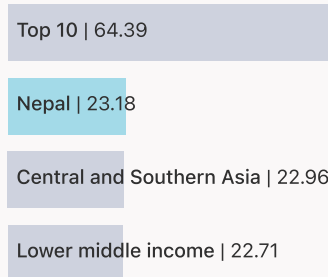
Knowledge and technology outputs



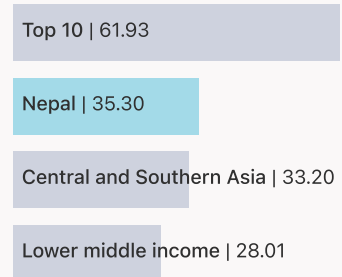
Creative outputs



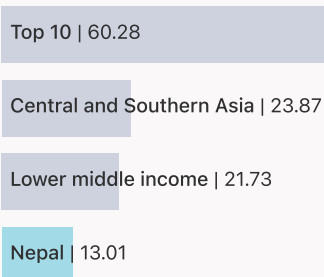
Business sophistication



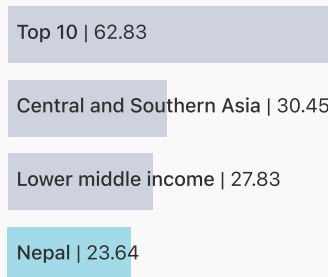
Market sophistication



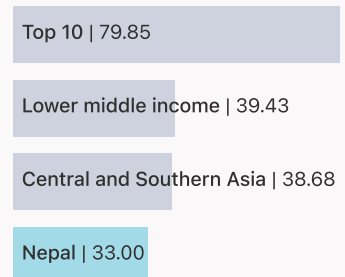
Human capital and research



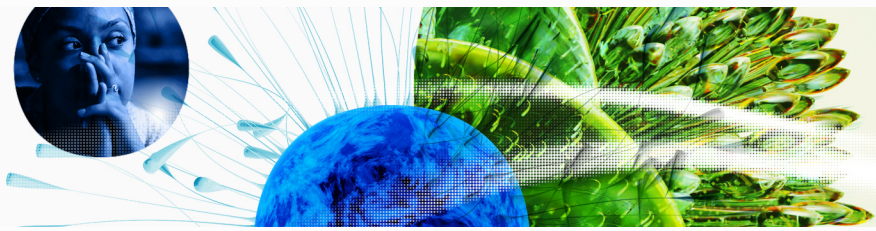
Infrastructure



Institutions



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→ Innovation strengths and weaknesses in Nepal

The table below gives an overview of the indicator strengths and weaknesses of Nepal in the GII 2023.



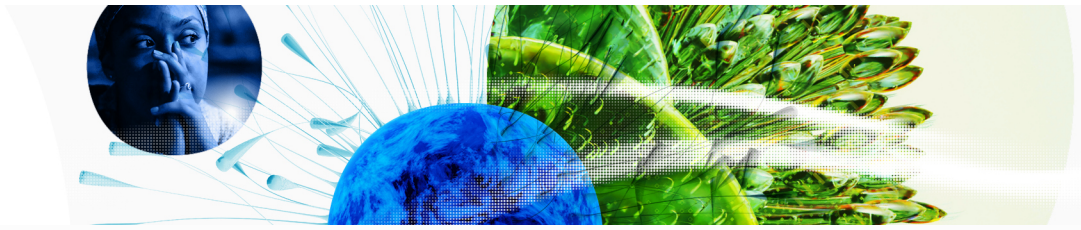
> Nepal's main innovation strengths are **Loans from microfinance institutions, % GDP** (rank 1), **Gross capital formation, % GDP** (rank 5) and **High-tech imports, % total trade** (rank 18).

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	4.1.3	Loans from microfinance institutions, % GDP	129	5.3.3	ICT services imports, % total trade
5	3.2.3	Gross capital formation, % GDP	125	4.3.1	Applied tariff rate, weighted avg., %
18	5.3.2	High-tech imports, % total trade	124	6.3.3	High-tech exports, % total trade
36	4.1.2	Domestic credit to private sector, % GDP	121	6.2.3	Software spending, % GDP
38	6.2.1	Labor productivity growth, %	121	2.1.5	Pupil-teacher ratio, secondary
42	7.2.2	National feature films/mn pop. 15-69	95	5.2.5	Patent families/bn PPP\$ GDP
51	7.3.4	Mobile app creation/bn PPP\$ GDP	74	7.1.3	Global brand value, top 5,000
56	7.1.2	Trademarks by origin/bn PPP\$ GDP	71	2.3.4	QS university ranking, top 3
58	4.3.2	Domestic industry diversification	48	6.2.2	Unicorn valuation, % GDP
69	6.1.4	Scientific and technical articles/bn PPP\$ GDP	40	2.3.3	Global corporate R&D investors, top 3, mn US\$

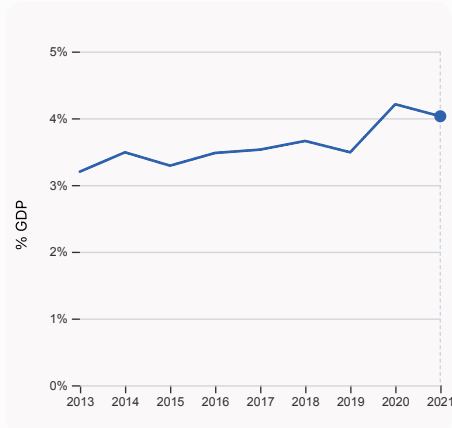
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→ Nepal's innovation system

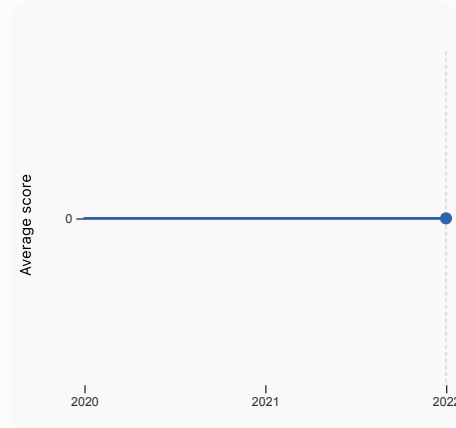
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Nepal



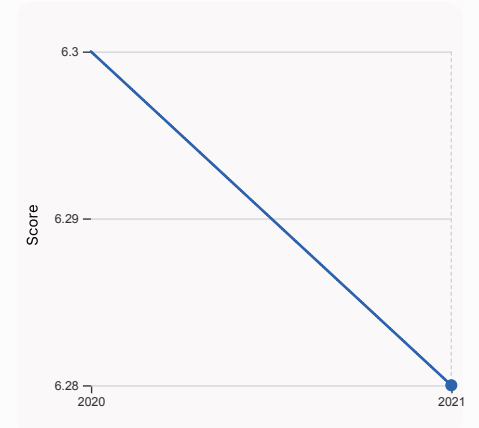
2.1.1 Expenditure on education, % GDP

was equal to 4.03% GDP in 2021, down by 0.18 percentage points from the year prior – and equivalent to an indicator rank of 69.



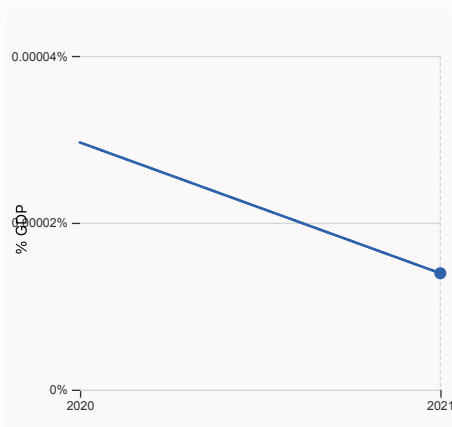
2.3.4 QS university ranking, top 3

was equal to an average score of 0 for the top 3 universities in 2022, equivalent to an indicator rank of 71.



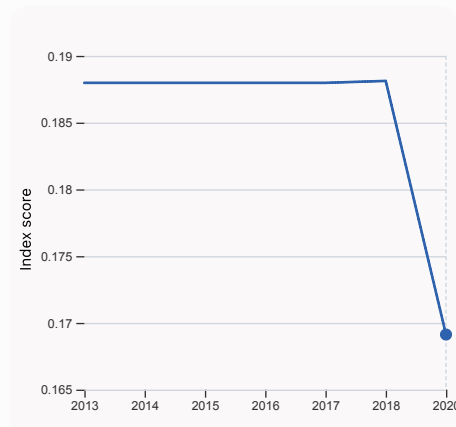
3.1.1 ICT access

was equal to a score of 6.28 in 2021, down by 0.32% from the year prior – and equivalent to an indicator rank of 116.



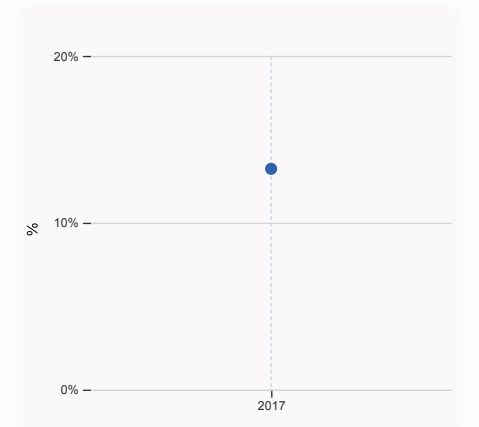
4.2.4 VC received, value, % GDP

was equal to 0.00001% GDP in 2021, down by 0.000016 percentage points from the year prior – and equivalent to an indicator rank of 94.



4.3.2 Domestic industry diversification

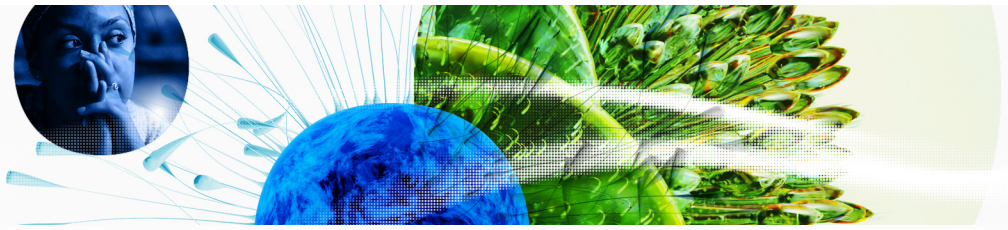
was equal to an index score of 0.169 in 2020, down by 10.099% from the year prior – and equivalent to an indicator rank of 58.



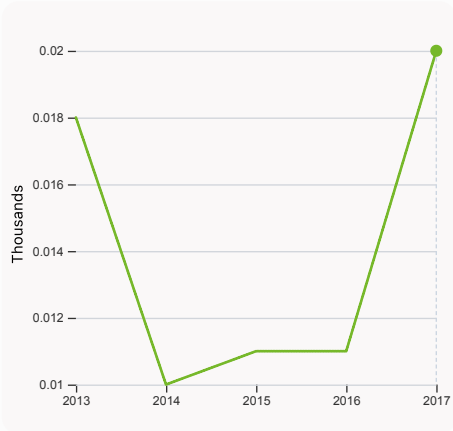
5.1.1 Knowledge-intensive employment, %

was equal to 13.23 % in 2017, equivalent to an indicator rank of 98.

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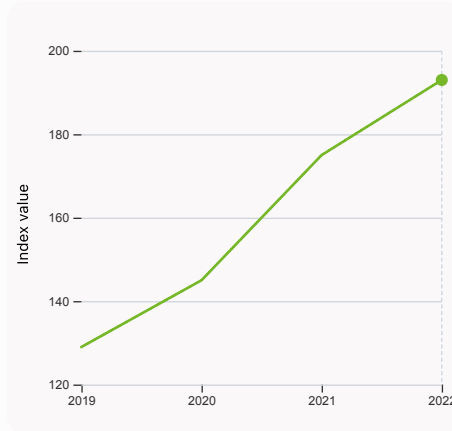


> Innovation outputs in Nepal



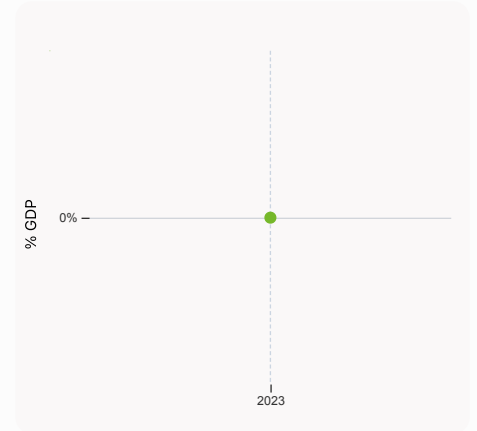
6.1.1 Patents by origin

was equal to 0.02 Thousands in 2017, up by 81.82% from the year prior – and equivalent to an indicator rank of 101.



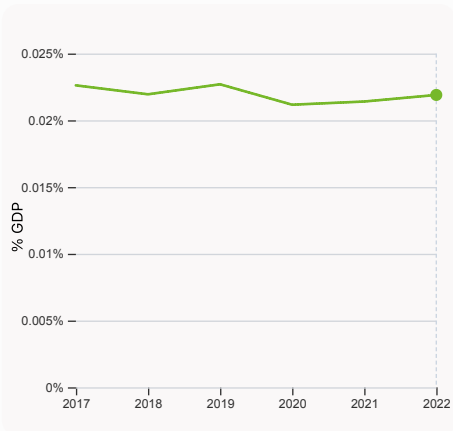
6.1.5 Citable documents H-index

was equal to an index value of 193 in 2022, up by 10.29% from the year prior – and equivalent to an indicator rank of 86.



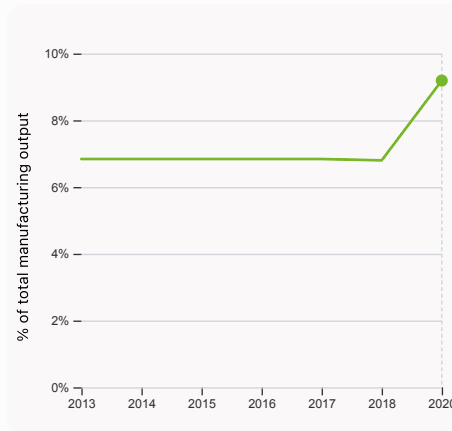
6.2.2 Unicorn valuation, % GDP

was equal to 0 % GDP in 2023 – and equivalent to an indicator rank of 48.



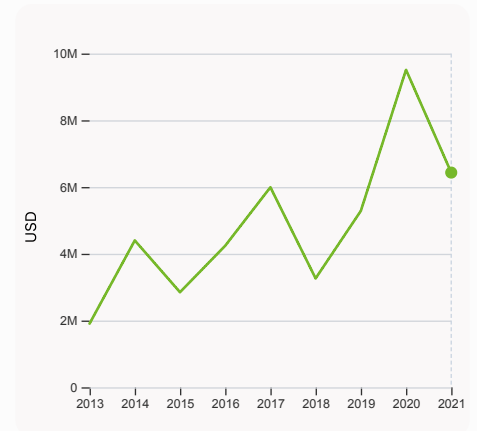
6.2.3 Software spending, % GDP

was equal to 0.022% GDP in 2022, up by 0.00049 percentage points from the year prior – and equivalent to an indicator rank of 121.



6.2.4 High-tech manufacturing, %

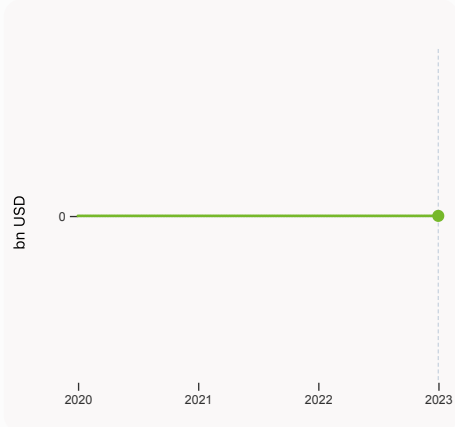
was equal to 9.19% of total manufacturing output in 2020, up by 2.39 percentage points from the year prior – and equivalent to an indicator rank of 94.



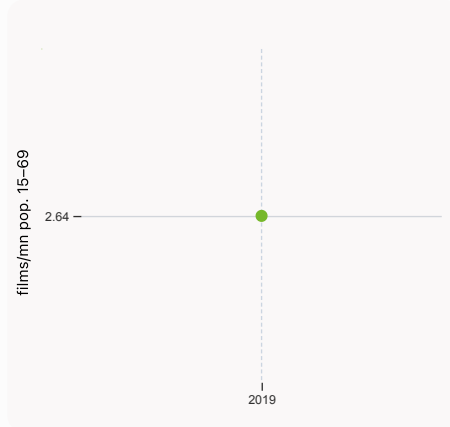
6.3.3 High-tech exports

was equal to 6,433,373 USD in 2021, down by 32.38% from the year prior – and equivalent to an indicator rank of 124.

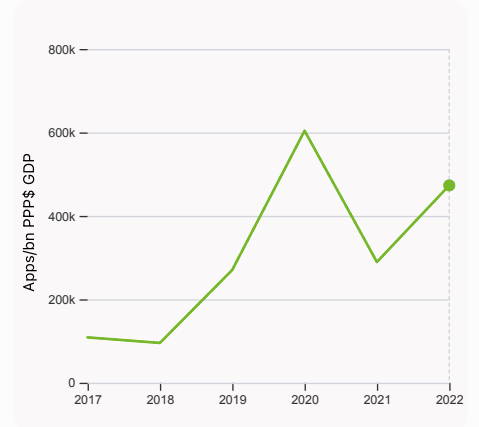
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7.1.3 Global brand value, top 5,000 was equal to 0 bn USD in 2023 – and equivalent to an indicator rank of 74.

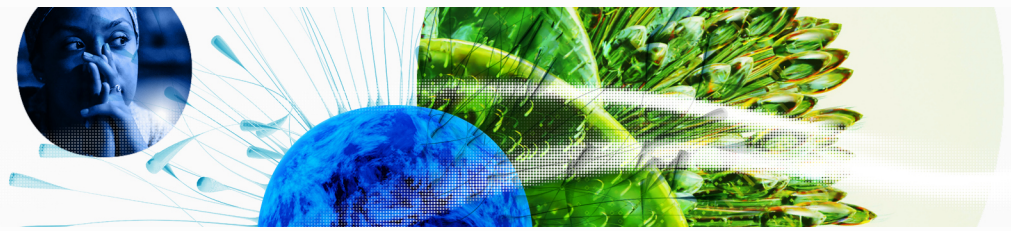


7.2.2 National feature films/mn pop. 15-69 was equal to 2.64 films/mn pop. 15-69 in 2019 – and equivalent to an indicator rank of 42.



7.3.4 Mobile app creation/bn PPP\$ GDP was equal to 473,073.12 Apps/bn PPP\$ GDP in 2022, up by 63.44% from the year prior – and equivalent to an indicator rank of 51.

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GII 2023 rank

108

Nepal

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
103	106	Lower middle	CSA	30.5	141.2	4,676.6
Score / Value Rank				Score / Value Rank		
Institutions				33.0	114	
1.1 Institutional environment				24.7	114	
1.1.1 Operational stability for businesses*				36.8	104	
1.1.2 Government effectiveness*				12.7	122	
1.2 Regulatory environment				44.0	113	
1.2.1 Regulatory quality*				26.1	105	
1.2.2 Rule of law*				26.1	92	
1.2.3 Cost of redundancy dismissal				27.2	109	
1.3 Business environment				30.2	[100]	
1.3.1 Policies for doing business [†]				30.2	106	
1.3.2 Entrepreneurship policies and culture [†]				n/a	n/a	
Human capital and research				13.0	[123]	
2.1 Education				30.2	120	
2.1.1 Expenditure on education, % GDP				4.0	69	
2.1.2 Government funding/pupil, secondary, % GDP/cap				9.4	92	●
2.1.3 School life expectancy, years				12.9	84	
2.1.4 PISA scales in reading, maths and science				n/a	n/a	
2.1.5 Pupil-teacher ratio, secondary				30.4	121	○◇
2.2 Tertiary education				8.9	[113]	
2.2.1 Tertiary enrolment, % gross				17.4	103	
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)				0.0	[119]	
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 US\$				0.0	40	○◇
2.3.4 QS university ranking, top 3*				0.0	71	○◇
Infrastructure				23.6	110	
3.1 Information and communication technologies (ICTs)				35.2	117	
3.1.1 ICT access*				43.8	116	
3.1.2 ICT use*				34.7	113	◇
3.1.3 Government's online service*				40.2	109	
3.1.4 E-participation*				22.1	120	
3.2 General infrastructure				25.4	72	
3.2.1 Electricity output, GWh/mn pop.				213.5	117	●
3.2.2 Logistics performance*				n/a	n/a	
3.2.3 Gross capital formation, % GDP				42.3	5	●◆
3.3 Ecological sustainability				10.3	126	○◇
3.3.1 GDP/unit of energy use				6.6	103	
3.3.2 Environmental performance*				15.9	120	
3.3.3 ISO 14001 environment/bn PPP\$ GDP				0.3	100	
Market sophistication				35.3	63	●◆
4.1 Credit				66.4	7	●◆
4.1.1 Finance for startups and scaleups [†]				n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP				88.4	36	●◆
4.1.3 Loans from microfinance institutions, % GDP				8.5	1	●◆
4.2 Investment				1.0	[108]	
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				0.0	91	●
4.2.4 VC received, value, % GDP				0.0	94	●
4.3 Trade, diversification, and market scale				38.5	107	
4.3.1 Applied tariff rate, weighted avg., %				11.6	125	○◇
4.3.2 Domestic industry diversification				87.6	58	●◆
4.3.3 Domestic market scale, bn PPP\$				141.2	79	
Business sophistication				23.2	[89]	
5.1 Knowledge workers				20.9	[96]	
5.1.1 Knowledge-intensive employment, %				13.2	98	●
5.1.2 Firms offering formal training, %				31.9	53	●
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	103	●
5.2 Innovation linkages				14.1	102	
5.2.1 University-industry R&D collaboration [†]				26.2	104	
5.2.2 State of cluster development [†]				25.7	104	
5.2.3 GERD financed by abroad, % GDP				n/a	n/a	
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP				0.0	83	
5.2.5 Patent families/bn PPP\$ GDP				0.0	95	○◇
5.3 Knowledge absorption				34.5	[59]	
5.3.1 Intellectual property payments, % total trade				n/a	n/a	
5.3.2 High-tech imports, % total trade				13.6	18	●◆
5.3.3 ICT services imports, % total trade				0.2	129	○◇
5.3.4 FDI net inflows, % GDP				0.5	113	
5.3.5 Research talent, % in businesses				n/a	n/a	
Knowledge and technology outputs				11.8	[110]	
6.1 Knowledge creation				11.4	[76]	
6.1.1 Patents by origin/bn PPP\$ GDP				0.2	101	●
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 and technical articles/bn PPP\$ GDP				n/a	n/a	
6.1.5 Citable documents H-index				8.3	86	
6.2 Knowledge impact				18.1	113	
6.2.1 Labor productivity growth, %				1.8	38	●◆
6.2.2 Unicorn valuation, % GDP				0.0	48	○◇
6.2.3 Software spending, % GDP				0.0	121	○◇
6.2.4 High-tech manufacturing, %				9.2	94	
6.3 Knowledge diffusion				5.9	[124]	
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				0.1	124	○
6.3.4 ICT services exports, % total trade				1.3	75	
6.3.5 ISO 9001 quality/bn PPP\$ GDP				2.5	82	
Creative outputs				12.4	101	
7.1 Intangible assets				10.1	107	
7.1.1 Intangible asset intensity, top 15, %				n/a	n/a	
7.1.2 Trademarks by origin/bn PPP\$ GDP				40.7	56	●◆
7.1.3 Global brand value, top 5,000				0.0	74	○◇
7.1.4 Industrial designs by origin/bn PPP\$ GDP				0.2	109	●
7.2 Creative goods and services				10.0	[66]	
7.2.1 Cultural and creative services exports, % total trade				n/a	n/a	
7.2.2 National feature films/mn pop. 15-69				2.6	42	●◆
7.2.3 Entertainment and media market/th pop. 15-69				n/a	n/a	
7.2.4 Creative goods exports, % total trade				0.3	71	
7.3 Online creativity				19.1	70	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69				0.6	109	
7.3.2 Country-code TLDs/th pop. 15-69				1.4	82	
7.3.3 GitHub commits/mn pop. 15-69				3.7	83	
7.3.4 Mobile app creation/bn PPP\$ GDP				70.8	51	●◆

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 appendices for details, including the year of the data, at <https://www.wipo.int/gii-ranking>. 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 indicators that are either missing or outdated for Nepal.



> Nepal has missing data for twenty two indicators and outdated data for eleven indicators.

> Missing data for Nepal

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD
2.2.3	Tertiary inbound mobility, %	n/a	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
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 ^{ÔÇô} The Logistics Performance Index and its Indicators.
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges; World Bank
4.2.2	Venture capital (VC) investors, deals/bn PPP\$ GDP	n/a	2022	Refinitiv; International Monetary Fund
5.1.3	GERD performed by business, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.3	GERD financed by abroad, % GDP	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.1	Intellectual property payments, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

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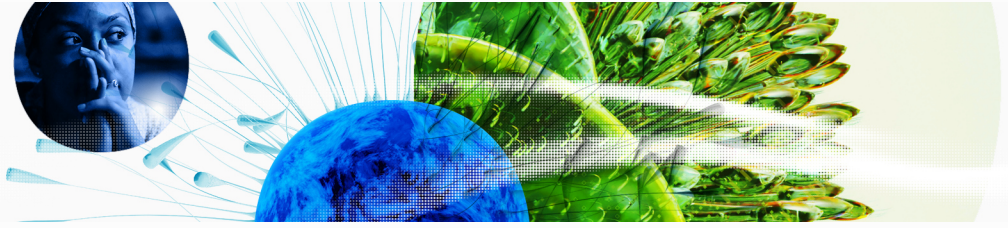


Code	Indicator name	Economy Year	Model Year	Source
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization; International Monetary Fund
6.3.1	Intellectual property receipts, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development
6.3.2	Production and export complexity	n/a	2020	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.2.1	Cultural and creative services exports, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development
7.2.3	Entertainment and media market/th pop. 15-69	n/a	2022	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

> Outdated data for Nepal

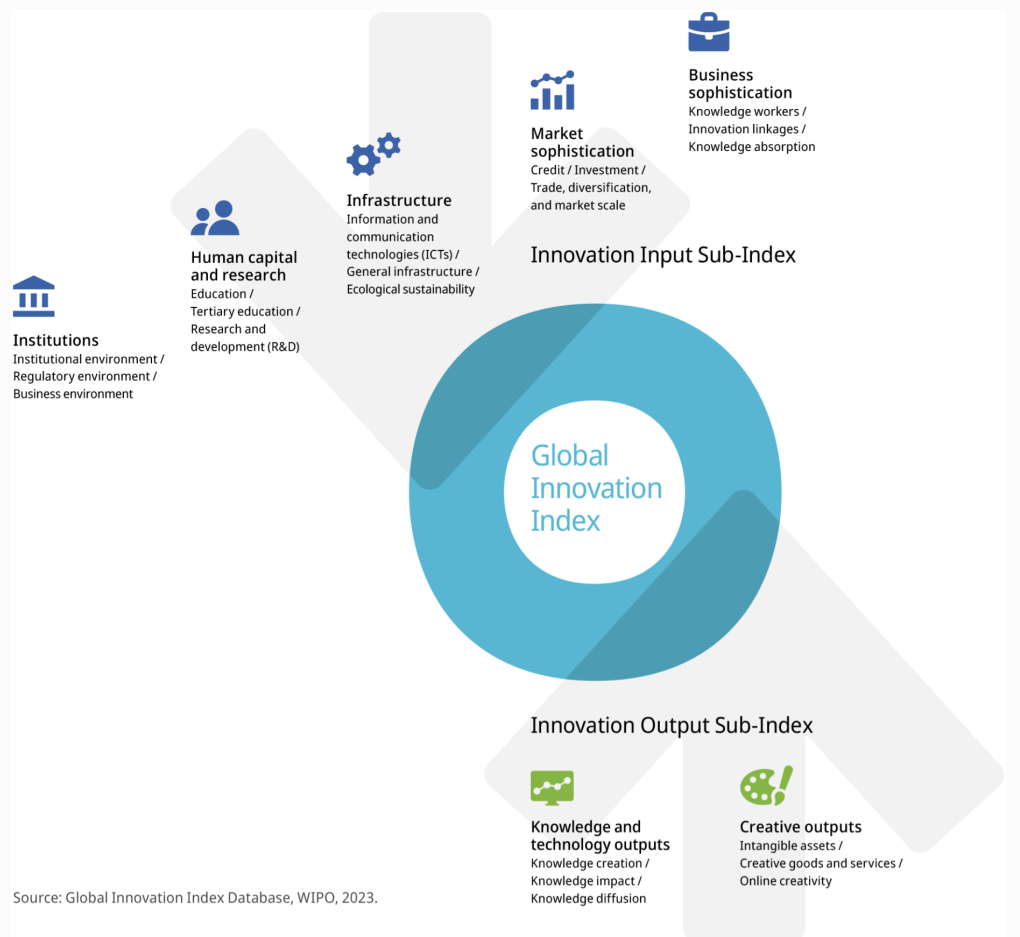
Code	Indicator name	Economy Year	Model Year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2019	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
4.2.3	VC recipients, deals/bn PPP\$ GDP	2021	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % GDP	2021	2022	Refinitiv; International Monetary Fund
5.1.1	Knowledge-intensive employment, %	2017	2022	International Labour Organization
5.1.2	Firms offering formal training, %	2013	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2017	2022	International Labour Organization
6.1.1	Patents by origin/bn PPP\$ GDP	2017	2021	World Intellectual Property Organization; International Monetary Fund
7.1.2	Trademarks by origin/bn PPP\$ GDP	2017	2021	World Intellectual Property Organization; International Monetary Fund
7.1.4	Industrial designs by origin/bn PPP\$ GDP	2017	2021	World Intellectual Property Organization; International Monetary Fund
7.2.2	National feature films/mn pop. 15-69	2019	2021	OMDIA; United Nations, World Population Prospects

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→ 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.



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.