

Global Innovation Index 2023

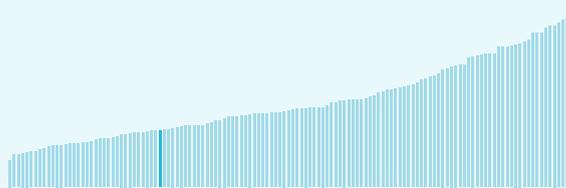


The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

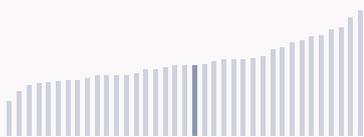
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation.**

Bolivia (Plurinational State of) ranking in the Global Innovation Index 2023

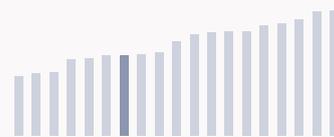
> Bolivia (Plurinational State of) ranks **97th** among the 132 economies featured in the GII 2023.



> Bolivia (Plurinational State of) ranks **18th** among the 37 lower-middle-income group economies.



> Bolivia (Plurinational State of) ranks **13th** among the 19 economies in Latin America and the Caribbean.



> Bolivia (Plurinational State of) GII Ranking (2020-2023)

The table shows the rankings of Bolivia (Plurinational State of) 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 Bolivia (Plurinational State of) in the GII 2023 is between ranks 91 and 105.

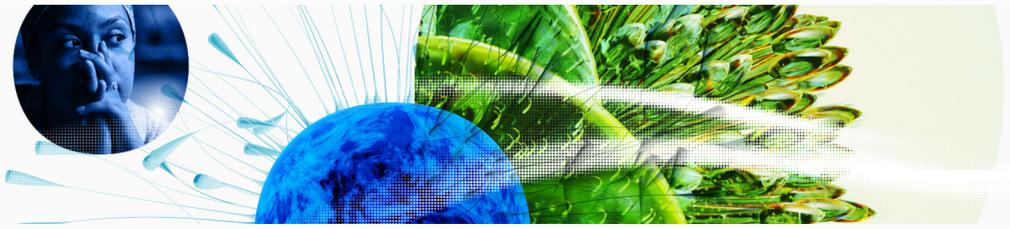
	GII Position	Innovation Inputs	Innovation Outputs
2020	105th	97th	117th
2021	104th	95th	111st
2022	n/a	n/a	n/a
2023	97th	91st	101st

Bolivia (Plurinational State of) performs worse in innovation outputs than innovation inputs in 2023.

This year Bolivia (Plurinational State of) ranks 91st in innovation inputs. This position is the same as last year.

Bolivia (Plurinational State of) ranks 101st in innovation outputs. This position is the same as last year.

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→ Expected vs. observed innovation performance

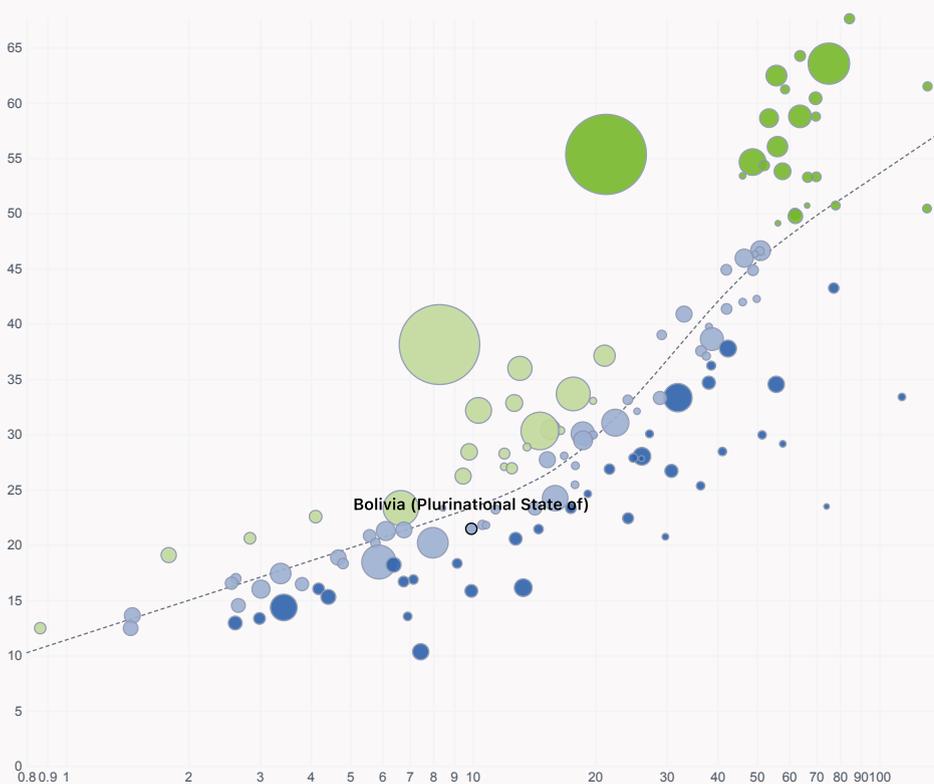
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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



> Relative to GDP, Bolivia (Plurinational State of)'s performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development

↑ **GII Score**



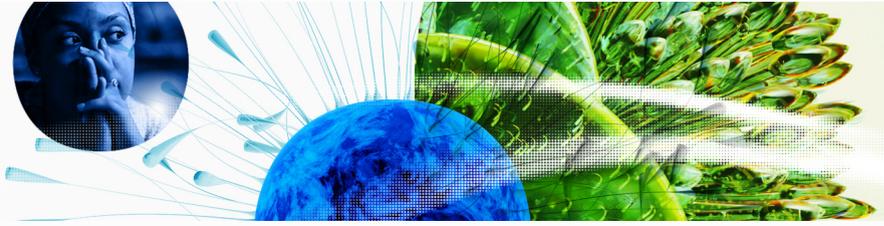
- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



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

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→ Effectively translating innovation investments into innovation outputs

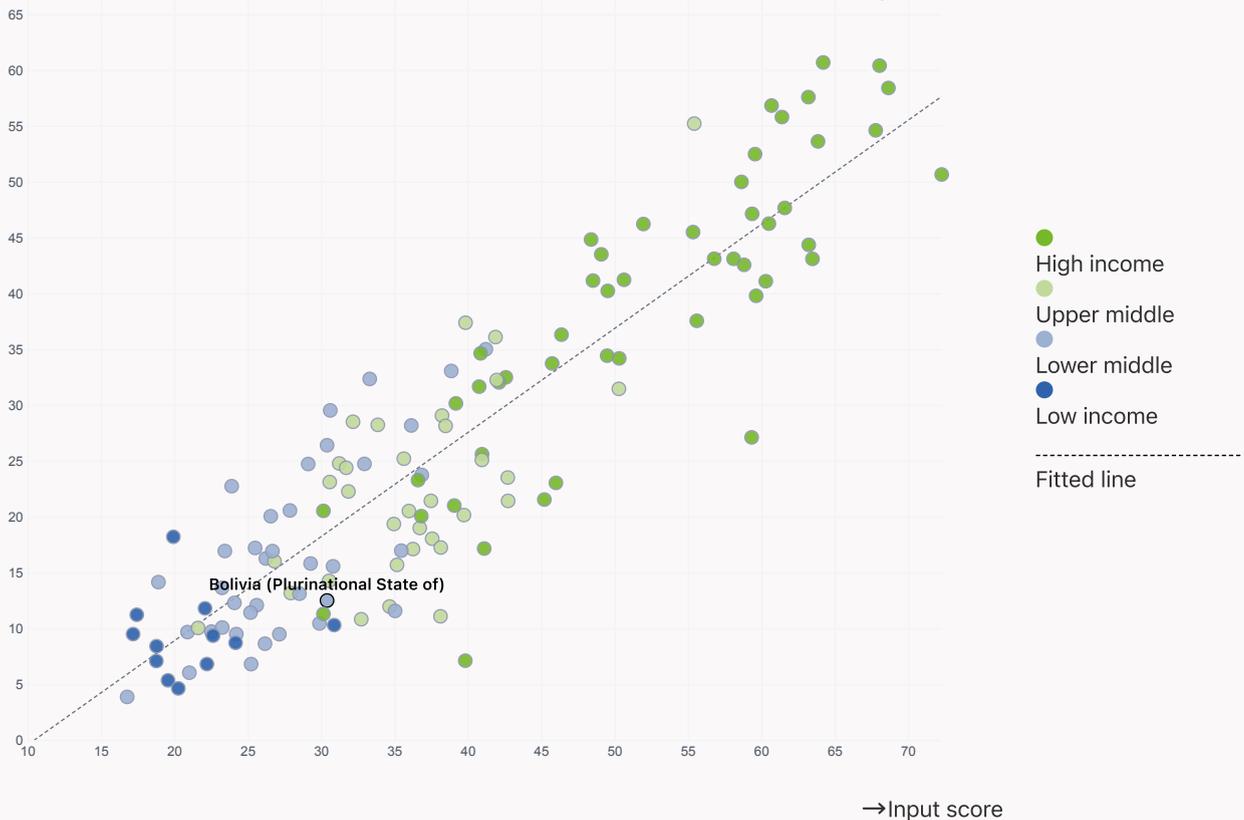
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.



> Bolivia (Plurinational State of) produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

↑ Output score

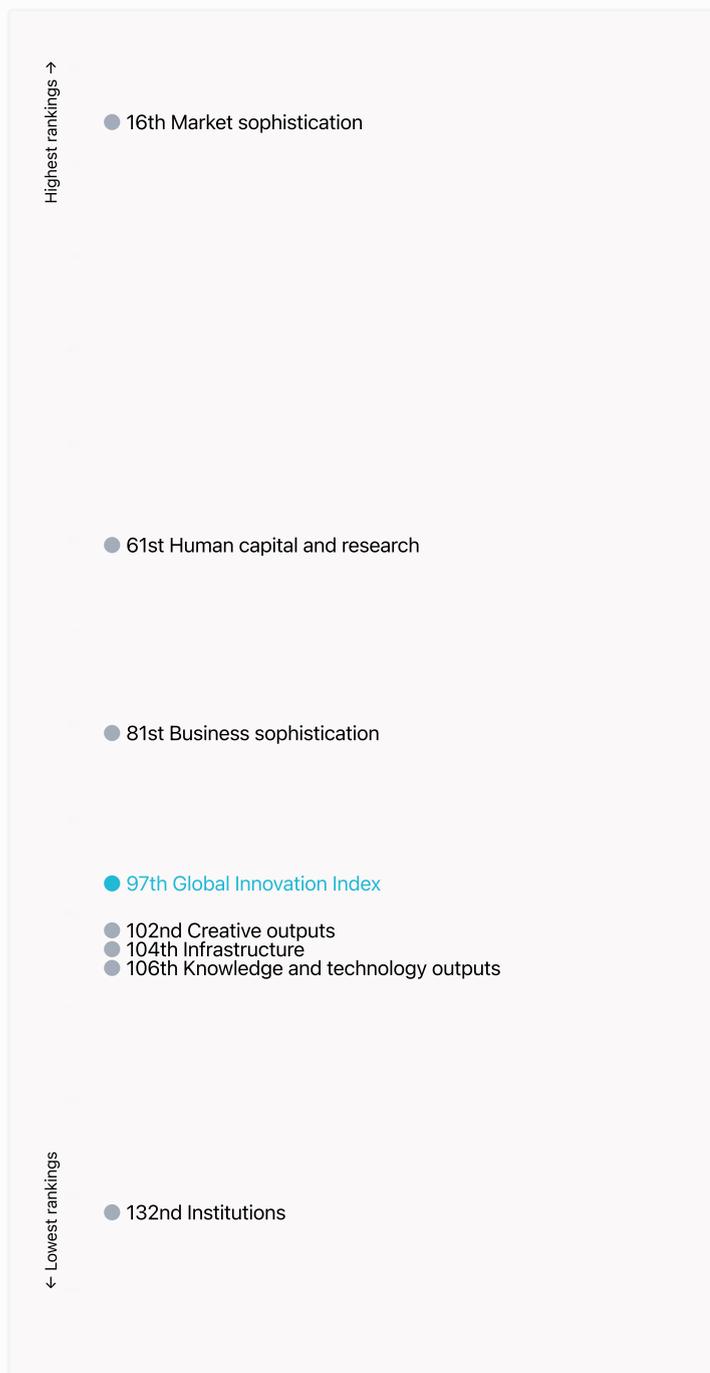


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→ Overview of Bolivia (Plurinational State of)'s rankings in the seven areas of the GII in 2023

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



> Highest rankings



Bolivia (Plurinational State of) ranks highest in Market sophistication (16th), Human capital and research (61st) and Business sophistication (81st).

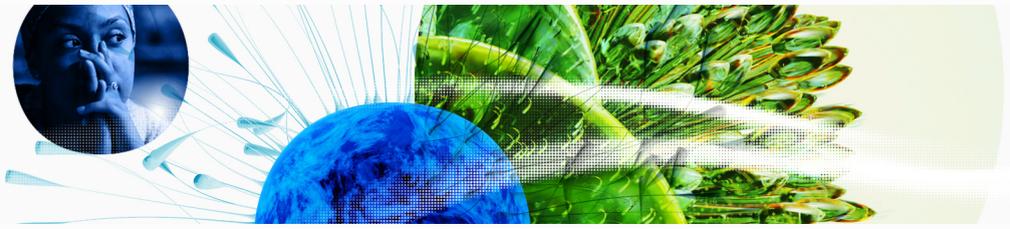
> Lowest rankings



Bolivia (Plurinational State of) ranks lowest in Institutions (132nd), Knowledge and technology outputs (106th) and Infrastructure (104th).

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

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→ Benchmark of Bolivia (Plurinational State of) against other country groupings for each of the seven areas of the GII Index

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

> Lower-Middle-Income economies

Bolivia (Plurinational State of) performs above the lower-middle-income group average in Business sophistication, Market sophistication, Human capital and research.

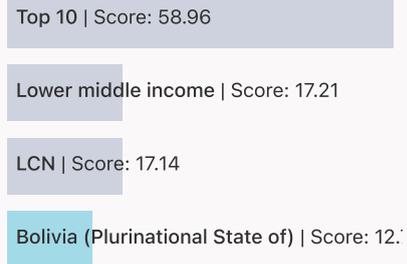


> Latin America And The Caribbean

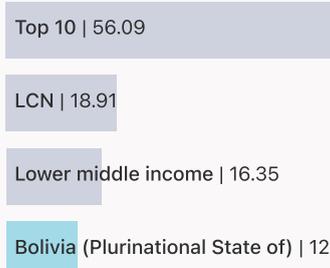
Bolivia (Plurinational State of) performs below the regional average in Knowledge and technology outputs, Creative outputs, Business sophistication, Infrastructure, Institutions.



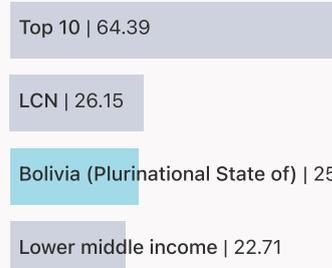
Knowledge and technology outputs



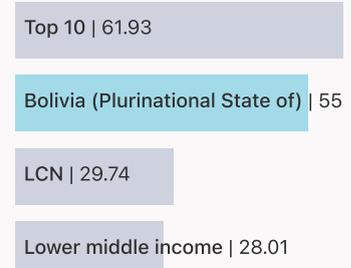
Creative outputs



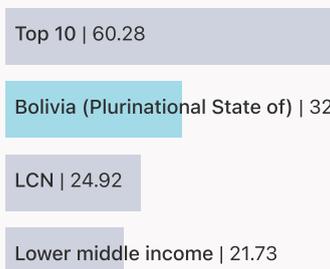
Business sophistication



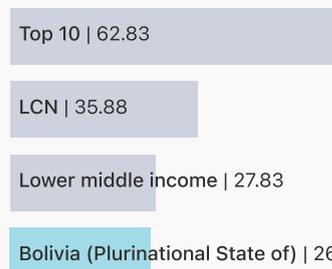
Market sophistication



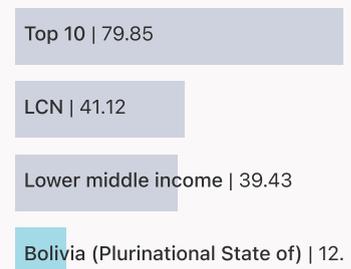
Human capital and research



Infrastructure



Institutions





→ Innovation strengths and weaknesses in Bolivia (Plurinational State of)

The table below gives an overview of the indicator strengths and weaknesses of Bolivia (Plurinational State of) in the GII 2023.



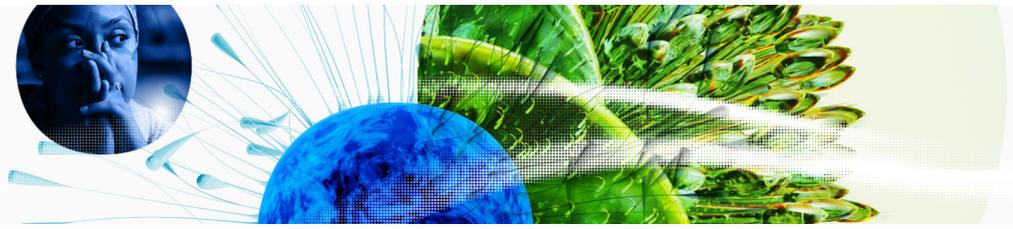
> Bolivia (Plurinational State of)'s main innovation strengths are **Loans from microfinance institutions, % GDP (rank 1)**, **Expenditure on education, % GDP (rank 2)** and **Firms offering formal training, % (rank 20)**.

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	4.1.3	Loans from microfinance institutions, % GDP	129	1.2.1	Regulatory quality
2	2.1.1	Expenditure on education, % GDP	128	1.2.2	Rule of law
20	5.1.2	Firms offering formal training, %	127	1.3.1	Policies for doing business
25	2.1.2	Government funding/pupil, secondary, % GDP/cap	124	5.3.4	FDI net inflows, % GDP
26	7.2.4	Creative goods exports, % total trade	123	5.2.1	University-industry R&D collaboration
50	6.2.3	Software spending, % GDP	103	3.2.2	Logistics performance
51	4.1.2	Domestic credit to private sector, % GDP	95	5.2.5	Patent families/bn PPP\$ GDP
60	3.3.1	GDP/unit of energy use	71	2.3.4	QS university ranking, top 3
62	7.1.2	Trademarks by origin/bn PPP\$ GDP	48	6.2.2	Unicorn valuation, % GDP
64	5.1.5	Females employed w/advanced degrees, %	40	2.3.3	Global corporate R&D investors, top 3, mn US\$

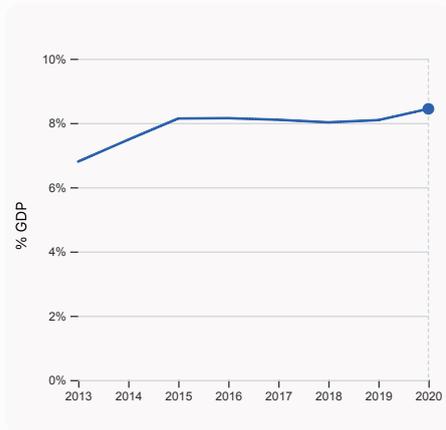
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→ Bolivia (Plurinational State of)'s innovation system

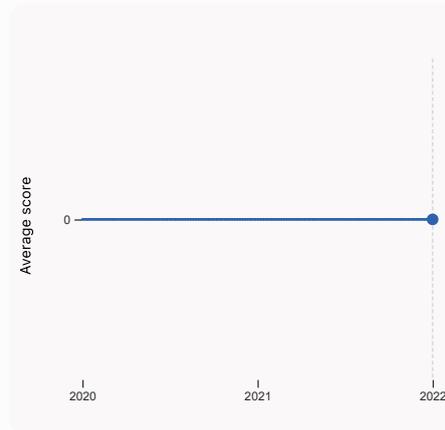
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Bolivia (Plurinational State of)



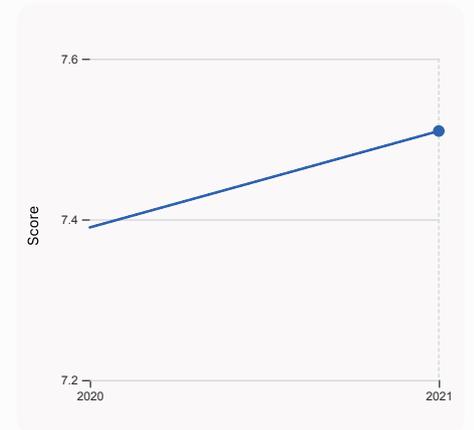
2.1.1 Expenditure on education, % GDP

was equal to 8.44% GDP in 2020, up by 0.35 percentage points from the year prior – and equivalent to an indicator rank of 2.



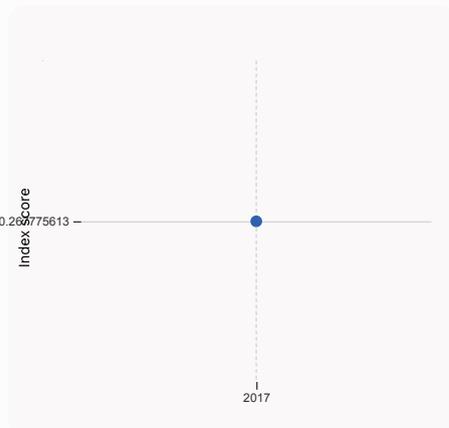
2.3.4 QS university ranking, top 3

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



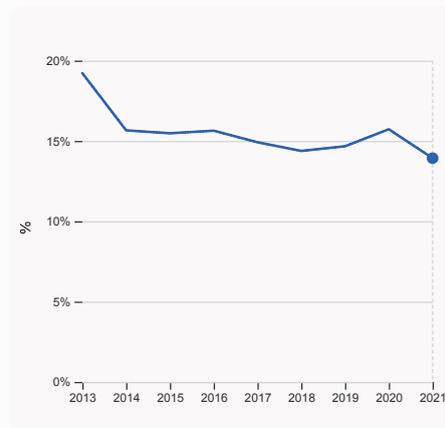
3.1.1 ICT access

was equal to a score of 7.51 in 2021, up by 1.62% from the year prior – and equivalent to an indicator rank of 96.



4.3.2 Domestic industry diversification

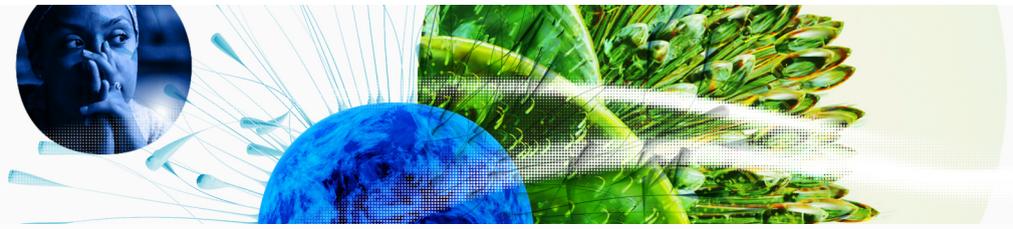
was equal to an index score of 0.268 in 2017, equivalent to an indicator rank of 90.



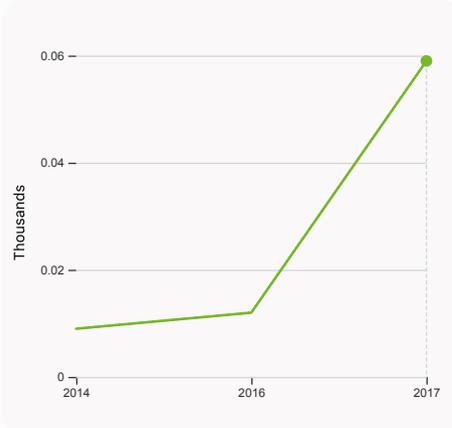
5.1.1 Knowledge-intensive employment, %

was equal to 13.93% in 2021, down by 1.8 percentage points from the year prior – and equivalent to an indicator rank of 92.

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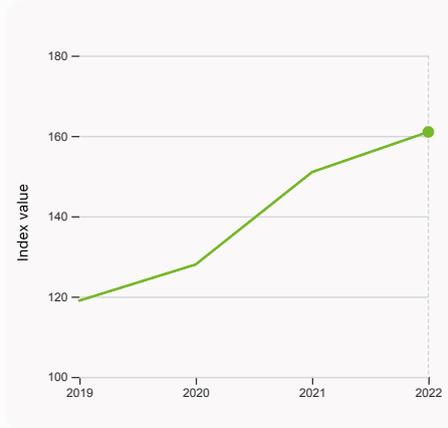


> Innovation outputs in Bolivia (Plurinational State of)



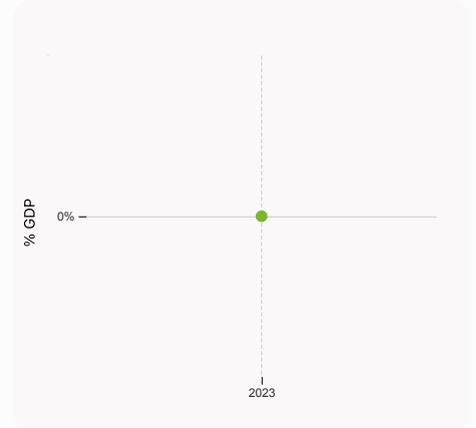
6.1.1 Patents by origin

was equal to 0.059 Thousands in 2017, up by 391.67% from the year prior – and equivalent to an indicator rank of 72.



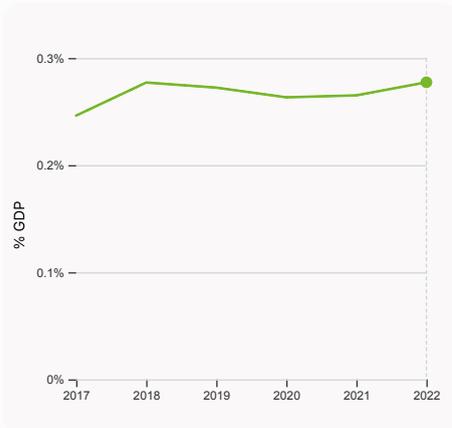
6.1.5 Citable documents H-index

was equal to an index value of 161 in 2022, up by 6.62% from the year prior – and equivalent to an indicator rank of 92.



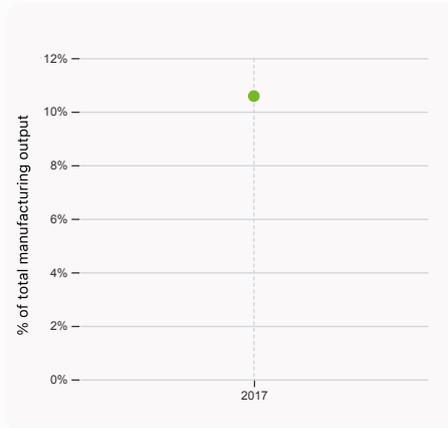
6.2.2 Unicorn valuation, % GDP

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



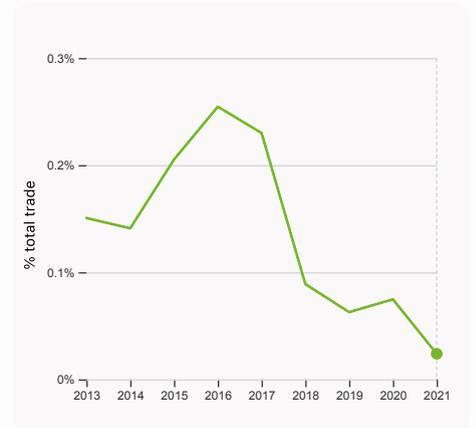
6.2.3 Software spending, % GDP

was equal to 0.277% GDP in 2022, up by 0.012 percentage points from the year prior – and equivalent to an indicator rank of 50.



6.2.4 High-tech manufacturing, %

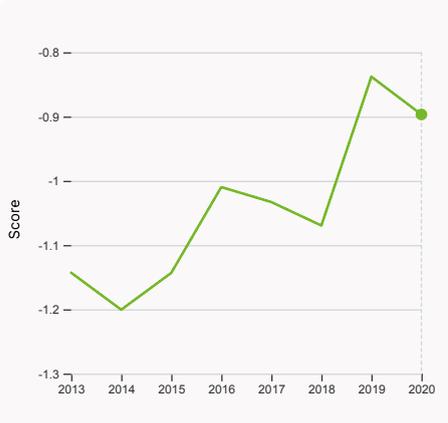
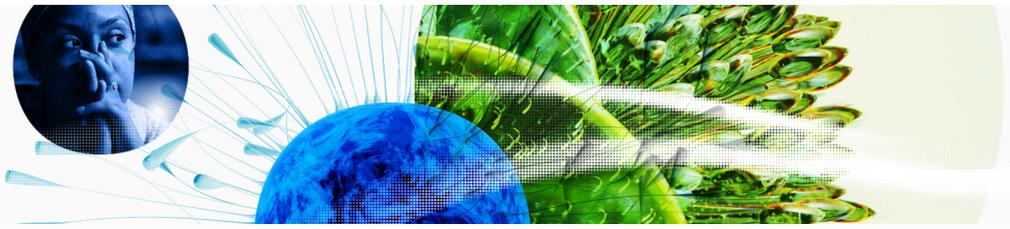
was equal to 10.58 % of total manufacturing output in 2017 – and equivalent to an indicator rank of 87.



6.3.1 Intellectual property receipts, % total trade

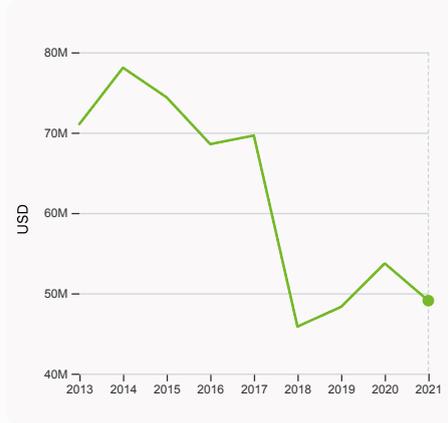
was equal to 0.024% total trade in 2021, down by 0.051 percentage points from the year prior – and equivalent to an indicator rank of 69.

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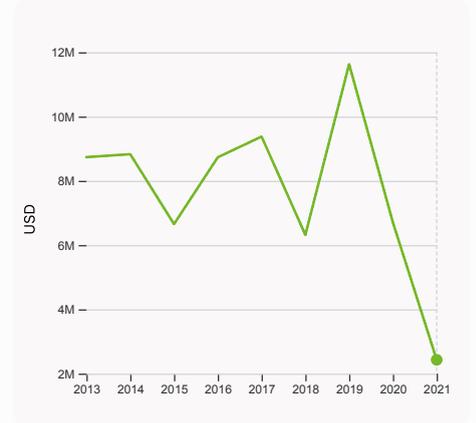
6.3.2 Production and export complexity

was equal to a score of -0.897 in 2020, down by 7.013% from the year prior – and equivalent to an indicator rank of 105.



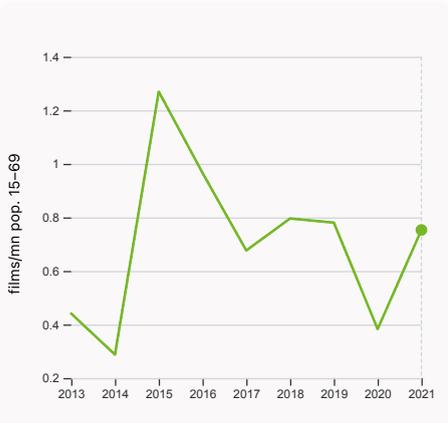
6.3.3 High-tech exports

was equal to 49,086,594 USD in 2021, down by 8.63% from the year prior – and equivalent to an indicator rank of 90.



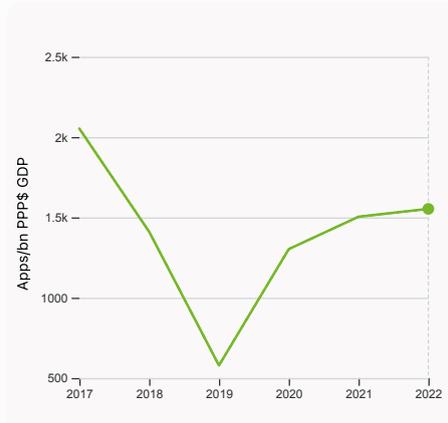
7.2.1 Cultural and creative services exports

was equal to 2,430,000 USD in 2021, down by 63.75% from the year prior – and equivalent to an indicator rank of 95.



7.2.2 National feature films/mn pop. 15-69

was equal to 0.753 films/mn pop. 15-69 in 2021, up by 96.58% from the year prior – and equivalent to an indicator rank of 67.



7.3.4 Mobile app creation/bn PPP\$ GDP

was equal to 1,553.27 Apps/bn PPP\$ GDP in 2022, up by 3.26% from the year prior – and equivalent to an indicator rank of 112.

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GII 2023 rank

97

Bolivia (Plurinational State of)

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
101	91	Lower middle	LCN	12.2	118.8	9,933.3
Score / Value Rank				Score / Value Rank		
Institutions				12.3	132	◇
1.1 Institutional environment				22.2	120	
1.1.1 Operational stability for businesses*				27.8	120	
1.1.2 Government effectiveness*				16.5	113	
1.2 Regulatory environment				8.9	132	◇
1.2.1 Regulatory quality*				12.2	129	◇
1.2.2 Rule of law*				5.6	128	◇
1.2.3 Cost of redundancy dismissal				n/a	n/a	
1.3 Business environment				5.7	129	
1.3.1 Policies for doing business*				5.7	127	◇
1.3.2 Entrepreneurship policies and culture*				n/a	n/a	
Human capital and research				32.5	61	
2.1 Education				65.0	15	
2.1.1 Expenditure on education, % GDP				8.4	2	●
2.1.2 Government funding/pupil, secondary, % GDP/cap				24.1	25	●
2.1.3 School life expectancy, years				n/a	n/a	
2.1.4 PISA scales in reading, maths and science				n/a	n/a	
2.1.5 Pupil-teacher ratio, secondary				18.7	95	
2.2 Tertiary education				n/a	n/a	
2.2.1 Tertiary enrolment, % gross				n/a	n/a	
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				27.0	104	
3.1 Information and communication technologies (ICTs)				50.2	99	
3.1.1 ICT access*				62.5	96	
3.1.2 ICT use*				61.0	91	
3.1.3 Government's online service*				46.9	97	
3.1.4 E-participation*				30.2	104	
3.2 General infrastructure				9.4	124	
3.2.1 Electricity output, GWh/mn pop.				911.9	101	
3.2.2 Logistics performance*				13.6	103	◇
3.2.3 Gross capital formation, % GDP				18.0	112	◇
3.3 Ecological sustainability				21.4	76	
3.3.1 GDP/unit of energy use				10.5	60	●
3.3.2 Environmental performance*				35.9	73	
3.3.3 ISO 14001 environment/bn PPP\$ GDP				0.5	80	
Market sophistication				55.3	16	
4.1 Credit				63.0	14	
4.1.1 Finance for startups and scaleups*				n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP				71.2	51	●
4.1.3 Loans from microfinance institutions, % GDP				16.8	1	●
4.2 Investment				n/a	n/a	
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				n/a	n/a	
4.2.4 VC received, value, % GDP				n/a	n/a	
4.3 Trade, diversification, and market scale				47.6	91	
4.3.1 Applied tariff rate, weighted avg., %				5.2	91	
4.3.2 Domestic industry diversification				73.9	90	●
4.3.3 Domestic market scale, bn PPP\$				118.8	85	
Business sophistication				25.1	81	
5.1 Knowledge workers				40.2	47	
5.1.1 Knowledge-intensive employment, %				13.9	92	●
5.1.2 Firms offering formal training, %				49.9	20	●
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, %				11.9	64	●
5.2 Innovation linkages				8.1	124	◇
5.2.1 University-industry R&D collaboration*				12.3	123	◇
5.2.2 State of cluster development*				17.9	115	
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	112	
5.2.5 Patent families/bn PPP\$ GDP				0.0	95	◇
5.3 Knowledge absorption				27.0	93	
5.3.1 Intellectual property payments, % total trade				0.5	71	
5.3.2 High-tech imports, % total trade				7.4	77	
5.3.3 ICT services imports, % total trade				0.9	92	
5.3.4 FDI net inflows, % GDP				-0.7	124	◇
5.3.5 Research talent, % in businesses				n/a	n/a	
Knowledge and technology outputs				12.7	106	
6.1 Knowledge creation				6.1	105	
6.1.1 Patents by origin/bn PPP\$ GDP				0.6	72	●
6.1.2 PCT patents by origin/bn PPP\$ GDP				n/a	n/a	
6.1.3 Utility models by origin/bn PPP\$ GDP				0.1	54	●
6.1.4 Scientific and technical articles/bn PPP\$ GDP				n/a	n/a	
6.1.5 Citable documents H-index				6.6	92	
6.2 Knowledge impact				21.2	98	
6.2.1 Labor productivity growth, %				0.3	88	
6.2.2 Unicorn valuation, % GDP				0.0	48	◇
6.2.3 Software spending, % GDP				0.3	50	●
6.2.4 High-tech manufacturing, %				10.6	87	●
6.3 Knowledge diffusion				10.9	103	
6.3.1 Intellectual property receipts, % total trade				0.1	69	
6.3.2 Production and export complexity				33.7	105	
6.3.3 High-tech exports, % total trade				0.4	90	
6.3.4 ICT services exports, % total trade				0.5	102	
6.3.5 ISO 9001 quality/bn PPP\$ GDP				2.3	84	
Creative outputs				12.2	102	
7.1 Intangible assets				14.2	100	
7.1.1 Intangible asset intensity, top 15, %				n/a	n/a	
7.1.2 Trademarks by origin/bn PPP\$ GDP				37.0	62	●
7.1.3 Global brand value, top 5,000				n/a	n/a	
7.1.4 Industrial designs by origin/bn PPP\$ GDP				0.2	108	●
7.2 Creative goods and services				9.0	72	
7.2.1 Cultural and creative services exports, % total trade				0.0	95	
7.2.2 National feature films/mn pop. 15-69				0.8	67	
7.2.3 Entertainment and media market/th pop. 15-69				n/a	n/a	
7.2.4 Creative goods exports, % total trade				1.9	26	●
7.3 Online creativity				11.4	111	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69				1.9	88	
7.3.2 Country-code TLDs/th pop. 15-69				0.5	99	
7.3.3 GitHub commits/mn pop. 15-69				3.0	90	
7.3.4 Mobile app creation/bn PPP\$ GDP				40.4	112	◇

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 Bolivia (Plurinational State of).



> Bolivia (Plurinational State of) has missing data for twenty two indicators and outdated data for eleven indicators.

> Missing data for Bolivia (Plurinational State of)

Code	Indicator name	Economy Year	Model Year	Source
1.2.3	Cost of redundancy dismissal	n/a	2020	World Bank, Employing Workers Project
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.1.3	School life expectancy, years	n/a	2020	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.2.1	Tertiary enrolment, % gross	n/a	2020	UNESCO Institute for Statistics
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
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
4.2.3	VC recipients, deals/bn PPP\$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % 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

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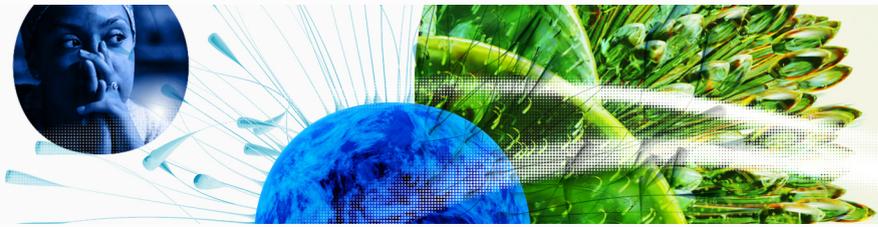


Code	Indicator name	Economy Year	Model Year	Source
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.1.3	Global brand value, top 5,000	n/a	2023	Brand Finance; International Monetary Fund
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 Bolivia (Plurinational State of)

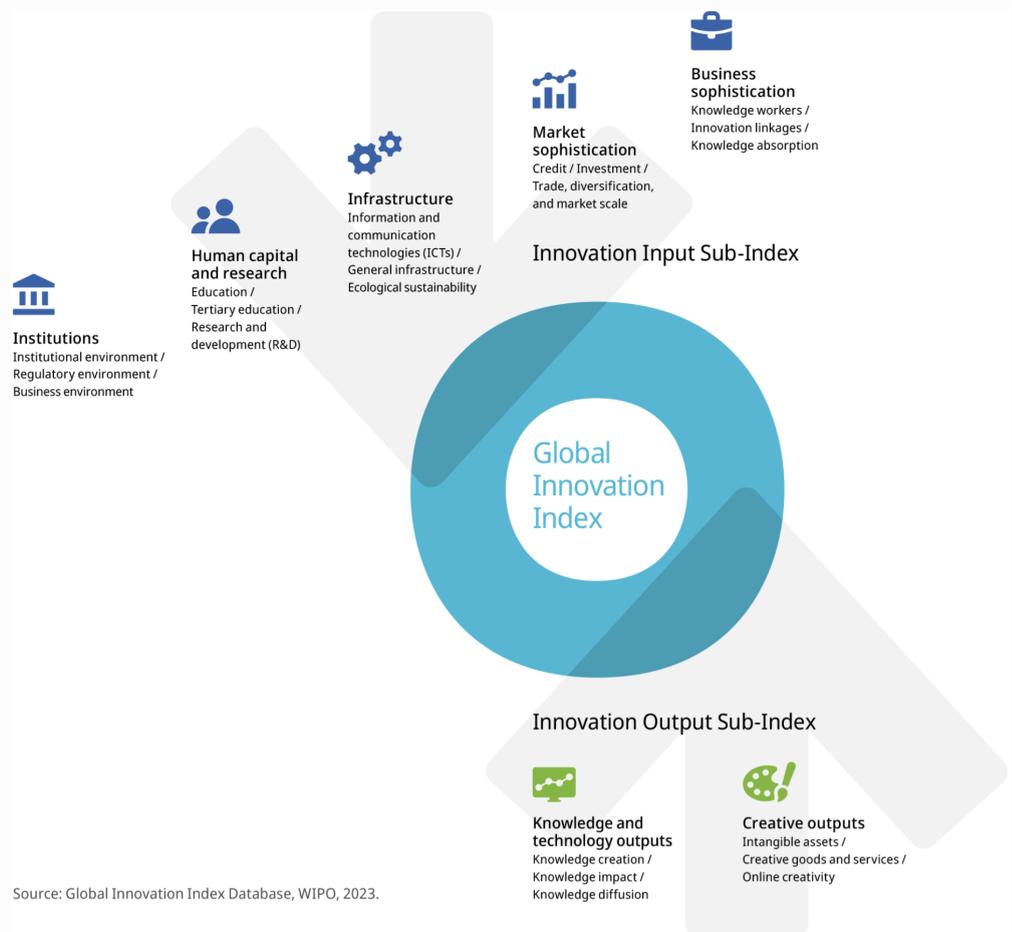
Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2020	2021	UNESCO Institute for Statistics
4.1.2	Domestic credit to private sector, % GDP	2019	2020	International Monetary Fund; World Bank and OECD GDP estimates.
4.3.2	Domestic industry diversification	2017	2020	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2021	2022	International Labour Organization
5.1.2	Firms offering formal training, %	2017	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2021	2022	International Labour Organization
6.1.1	Patents by origin/bn PPP\$ GDP	2017	2021	World Intellectual Property Organization; International Monetary Fund
6.1.3	Utility models by origin/bn PPP\$ GDP	2017	2021	World Intellectual Property Organization; International Monetary Fund
6.2.4	High-tech manufacturing, %	2017	2020	United Nations Industrial Development Organization
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

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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.