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.

<table>
<thead>
<tr>
<th>Year</th>
<th>GII Position</th>
<th>Innovation Inputs</th>
<th>Innovation Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>105th</td>
<td>97th</td>
<td>117th</td>
</tr>
<tr>
<td>2021</td>
<td>104th</td>
<td>95th</td>
<td>111st</td>
</tr>
<tr>
<td>2022</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2023</td>
<td>97th</td>
<td>91st</td>
<td>101st</td>
</tr>
</tbody>
</table>

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.
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 $)
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

Input score

High income
Upper middle
Lower middle
Low income
Fitted line
Global Innovation Index 2023

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](#).
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
- **Top 10 | Score: 58.96**
- **Lower middle income | Score: 17.21**
- **LCN | Score: 17.14**
- **Bolivia (Plurinational State of) | Score: 12.**

#### Creative outputs
- **Top 10 | 56.09**
- **LCN | 18.91**
- **Lower middle income | 16.35**
- **Bolivia (Plurinational State of) | 12.**

#### Business sophistication
- **Top 10 | 64.39**
- **LCN | 26.15**
- **Bolivia (Plurinational State of) | 25**
- **Lower middle income | 22.71**

#### Market sophistication
- **Top 10 | 61.93**
- **Bolivia (Plurinational State of) | 55**
- **LCN | 29.74**
- **Lower middle income | 28.01**

#### Human capital and research
- **Top 10 | 60.28**
- **Bolivia (Plurinational State of) | 32**
- **LCN | 24.92**
- **Lower middle income | 21.73**

#### Infrastructure
- **Top 10 | 62.83**
- **LCN | 35.88**
- **Lower middle income | 27.83**
- **Bolivia (Plurinational State of) | 26**

#### Institutions
- **Top 10 | 79.85**
- **LCN | 41.12**
- **Lower middle income | 39.43**
- **Bolivia (Plurinational State of) | 12.**
## 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).

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weights</th>
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<td>6.2.2</td>
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<tr>
<td>40</td>
<td>2.3.3</td>
</tr>
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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.
> 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.
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.
### Global Innovation Index 2023

**Bolivia (Plurinational State of)**

<table>
<thead>
<tr>
<th>Output rank</th>
<th>Input rank</th>
<th>Income Region</th>
<th>Population (mn)</th>
<th>GDP, PPP$ (bn)</th>
<th>GDP per capita, PPP$</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>91</td>
<td>Lower middle</td>
<td>12.2</td>
<td>118.8</td>
<td>9,933.3</td>
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### Institutions

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<td>132</td>
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</table>

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 stability 12.2 129  
1.2.2 Rule of law* 5.6 128  
1.2.3 Cost of redundancy dismissal 1.0 9  
1.3 Business environment 5.7 129  
1.3.1 Policies for doing business* 5.7 127  
1.3.2 Entrepreneurship policies and culture* 1.0 9  

### Human capital and research

<table>
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<th>Value Rank</th>
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</thead>
<tbody>
<tr>
<td>32.5</td>
<td>61</td>
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</tbody>
</table>

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 18.7 9  
2.1.4 PISA scales in reading, maths and science 1.0 9  
2.1.5 Pupil-teacher ratio, secondary 18.7 9  
2.2 Tertiary education 1.0 9  
2.2.1 Tertiary enrolment, % gross 1.0 9  
2.2.2 Graduates in science and engineering, % 1.0 9  
2.2.3 Tertiary inbound mobility, % 1.0 9  
2.3 Research and development (R&D) 0.0 119  
2.3.1 Researchers, FTE/mn pop. 0.0 40  
2.3.2 Global corporate R&D investors, top 3, mn US$ 0.0 71  
2.3.3 QS university ranking, top 3* 0.0 71  

### Infrastructure

<table>
<thead>
<tr>
<th>Score</th>
<th>Value Rank</th>
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</thead>
<tbody>
<tr>
<td>27.0</td>
<td>104</td>
</tr>
</tbody>
</table>

3.1 Information and communication technologies (ICTs) 50.2 99  
3.1.1 ICT access* 62.5 98  
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. 9.9 101  
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

<table>
<thead>
<tr>
<th>Score</th>
<th>Value Rank</th>
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<tbody>
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<td>55.3</td>
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</tbody>
</table>

4.1 Credit 63.0 14  
4.1.1 Finance for startups and scaleups* 71.2 51  
4.1.2 Domestic credit to private sector, % GDP 16.8 1  
4.2 Investment 1.0 9  
4.2.1 Market capitalization, % GDP 1.0 9  
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP 1.0 9  
4.2.3 VC recipients, deals/bn PPP$ GDP 1.0 9  
4.2.4 VC received, value, % GDP 1.0 9  
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

<table>
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<th>Score</th>
<th>Value Rank</th>
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<tbody>
<tr>
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</table>

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 26  
5.1.3 GERD performed by business, % GDP 1.0 9  
5.1.4 GERD financed by business, % 1.0 9  
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 1.0 9  
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP 1.0 9  
5.2.5 Patents families/bn PPP$ GDP 0.0 9  
5.3 Knowledge absorption 21.2 98  
5.3.1 Intellectual property payments, % total trade 0.0 9  
5.3.2 High-tech imports, % total trade 7.4 77  
5.3.3 ICT services imports, % total trade 0.9 9  
5.3.4 FDN net inflows, % GDP 0.7 124  
5.3.5 Research talent, % in businesses 1.0 9  

### Knowledge and technology outputs

<table>
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<tr>
<th>Score</th>
<th>Value Rank</th>
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<tr>
<td>12.7</td>
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</table>

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 0.6 72  
6.1.3 Utility models by origin/bn PPP$ GDP 0.6 72  
6.1.4 Scientific and technical articles/bn PPP$ GDP 0.6 72  
6.1.5 Oatile 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 Unornan valuation, % GDP 0.0 9  
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

<table>
<thead>
<tr>
<th>Score</th>
<th>Value Rank</th>
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</thead>
<tbody>
<tr>
<td>12.2</td>
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</tbody>
</table>

7.1 Intangible assets 14.2 100  
7.1.1 Intangible asset intensity, top 15, % 0.0 9  
7.1.2 Trademarks by origin/bn PPP$ GDP 0.37 60  
7.1.3 Global brand value, top 5,000 0.2 108  
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/mn pop. 15-69 0.9 9  
7.2.4 Creative goods exports, % total trade 1.9 29  
7.3 Online creativity 11.4 111  
7.3.1 Generic top-level domains (TLDs)/mn pop. 15-69 1.9 88  
7.3.2 Country-code TLDs/mn 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; O 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/igii-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)

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Economy Year</th>
<th>Model Year</th>
<th>Source</th>
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<td>1.2.3</td>
<td>Cost of redundancy dismissal</td>
<td>n/a</td>
<td>2020</td>
<td>World Bank, Employing Workers Project</td>
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<tr>
<td>1.3.2</td>
<td>Entrepreneurship policies and culture</td>
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<td>Global Entrepreneurship Monitor</td>
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<td>2.1.3</td>
<td>School life expectancy, years</td>
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<td>2.2.1</td>
<td>Tertiary enrolment, % gross</td>
<td>n/a</td>
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<td>Graduates in science and engineering, %</td>
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<td>Refinitiv; International Monetary Fund</td>
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<td>5.1.4</td>
<td>GERD financed by business, %</td>
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<td>5.2.3</td>
<td>GERD financed by abroad, % GDP</td>
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<td>2020</td>
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### Global Innovation Index 2023

<table>
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<th>Code</th>
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<th>Model Year</th>
<th>Source</th>
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<td>5.3.5</td>
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<td>UNESCO Institute for Statistics; Eurostat; OECD; RICYT</td>
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<td>6.1.2</td>
<td>PCT patents by origin/bn PPP$ GDP</td>
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<td>2022</td>
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<td>7.1.1</td>
<td>Intangible asset intensity, top 15, %</td>
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<td>7.1.3</td>
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<td>Brand Finance; International Monetary Fund</td>
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<td>7.2.3</td>
<td>Entertainment and media market in pop. 15-69</td>
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<td>2022</td>
<td>PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund</td>
</tr>
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> Outdated data for Bolivia (Plurinational State of)

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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.