

Global Innovation Index 2023

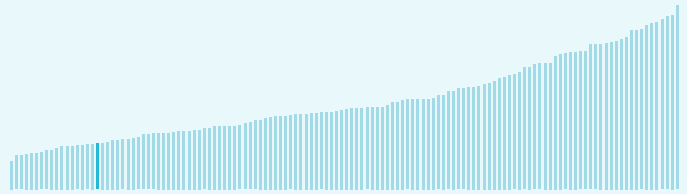


The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

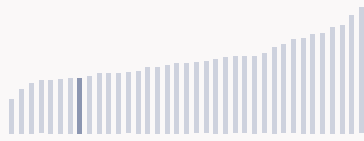
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation.**

Nicaragua ranking in the Global Innovation Index 2023

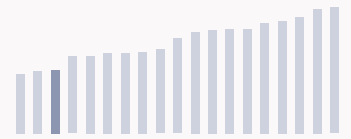
> Nicaragua ranks **115th** among the 132 economies featured in the GII 2023.



> Nicaragua ranks **30th** among the 37 lower-middle-income group economies.



> Nicaragua ranks **17th** among the 19 economies in Latin America and the Caribbean.



> Nicaragua GII Ranking (2020-2023)

The table shows the rankings of Nicaragua 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 Nicaragua in the GII 2023 is between ranks 112 and 121.

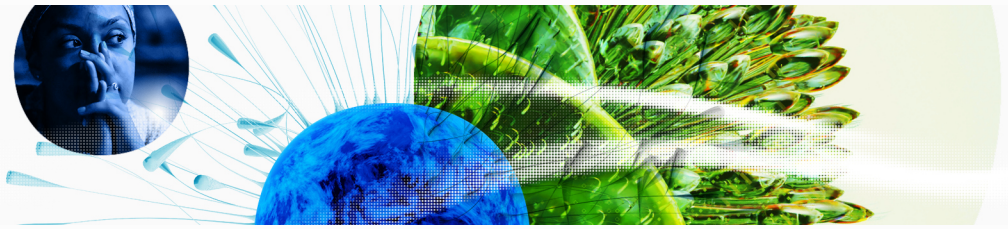
	GII Position	Innovation Inputs	Innovation Outputs
2020	n/a	n/a	n/a
2021	n/a	n/a	n/a
2022	108th	99th	112nd
2023	115th	110th	118th

Nicaragua performs worse in innovation outputs than innovation inputs in 2023.

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

Nicaragua ranks 118th in innovation outputs. This position is lower than last year.

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→ Expected vs. observed innovation performance

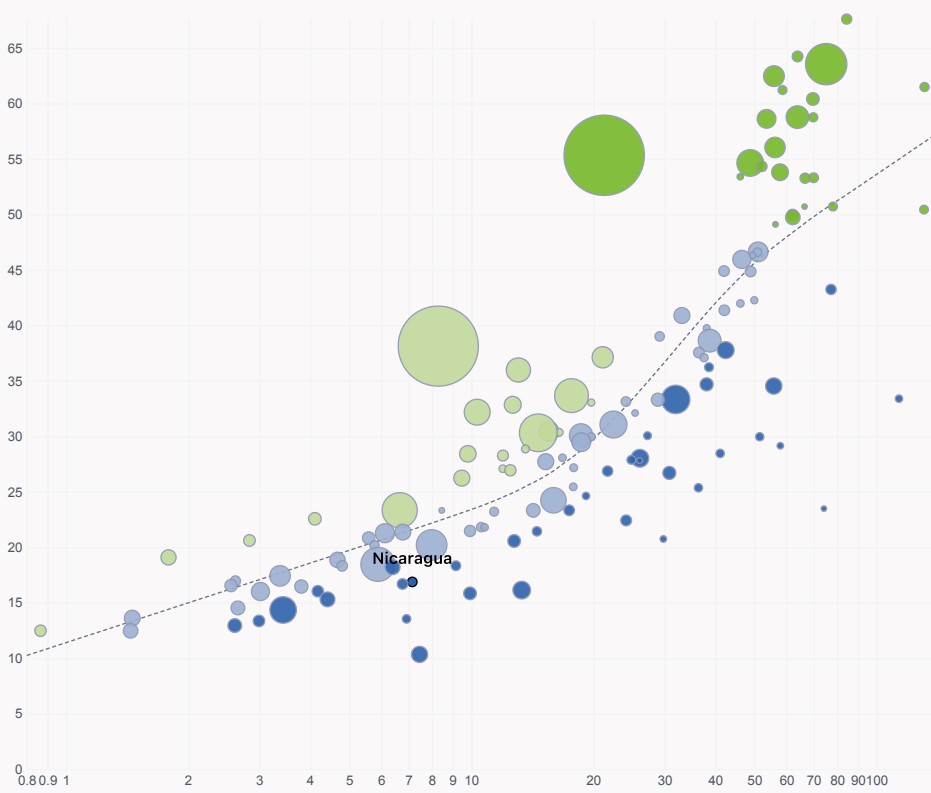
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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



> Relative to GDP, Nicaragua's performance is below 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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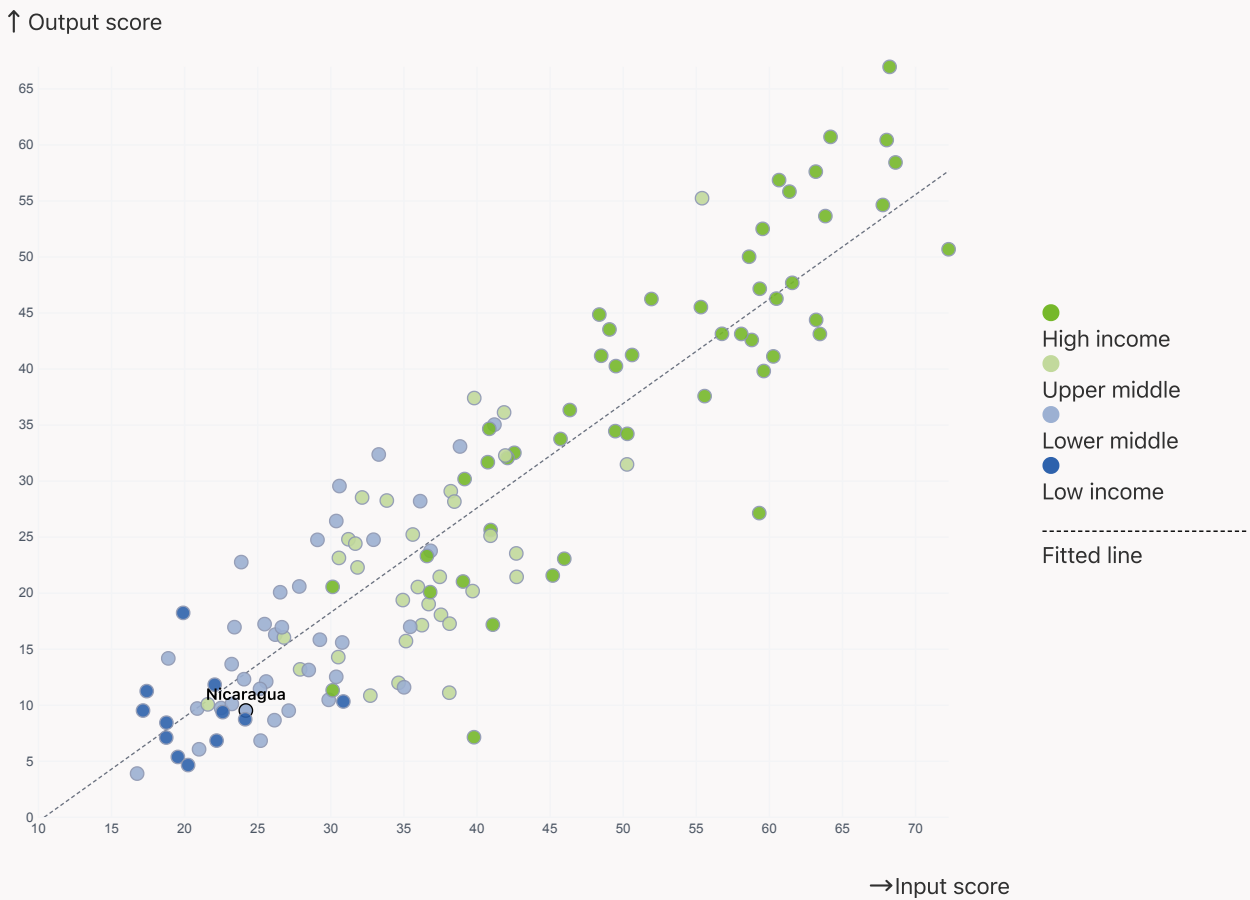
→ Effectively translating innovation investments into innovation outputs

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.

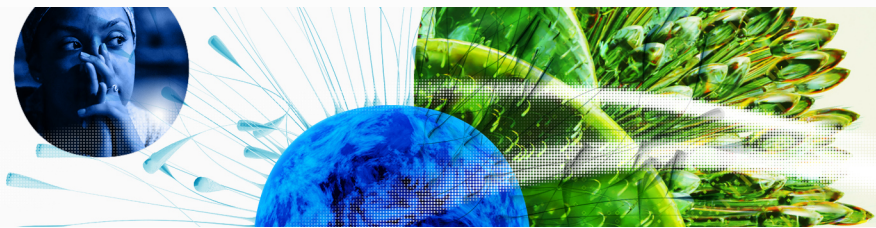


> Nicaragua produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

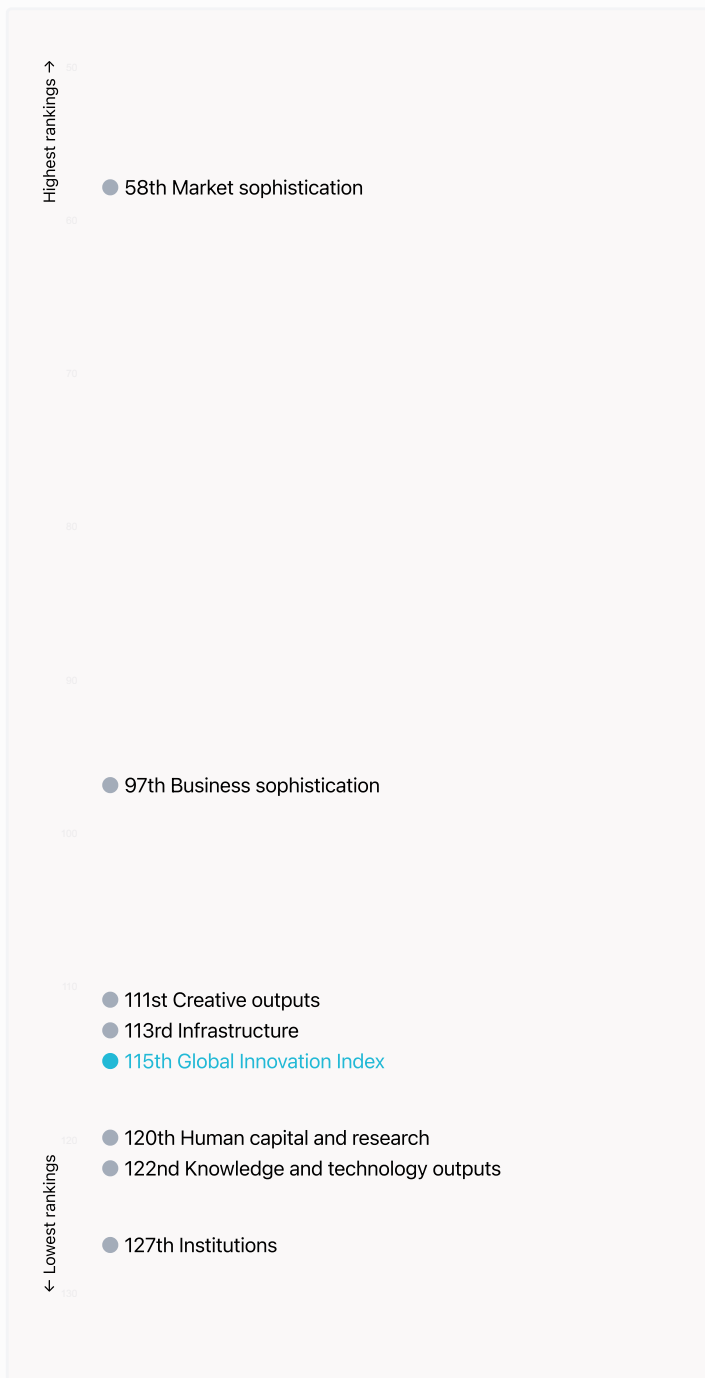


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→ Overview of Nicaragua's rankings in the seven areas of the GII in 2023

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



> Highest rankings



Nicaragua ranks highest in Market sophistication (58th), Business sophistication (97th), Creative outputs (111st) and Infrastructure (113rd).

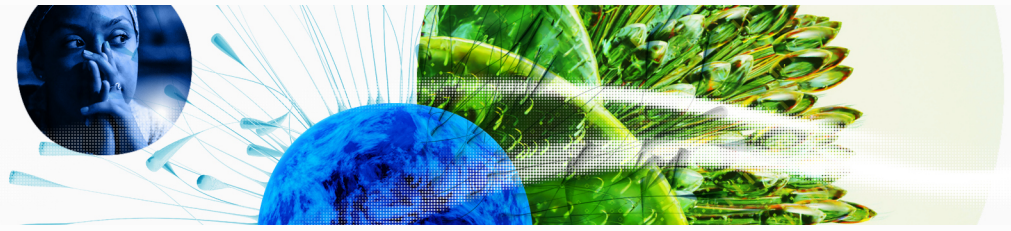
> Lowest rankings



Nicaragua ranks lowest in Institutions (127th), Knowledge and technology outputs (122nd) and Human capital and research (120th).

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

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

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

> Lower-Middle-Income economies

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

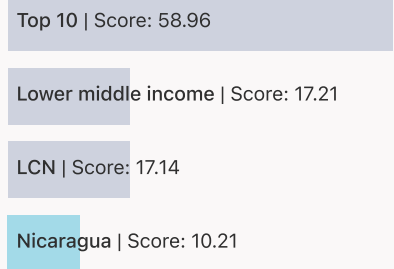


> Latin America And The Caribbean

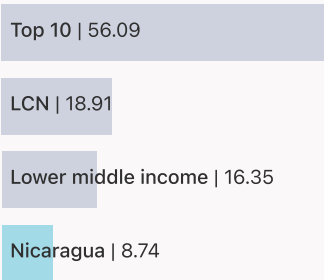
Nicaragua performs below the regional average in Knowledge and technology outputs, Creative outputs, Business sophistication, Human capital and research, Infrastructure, Institutions.



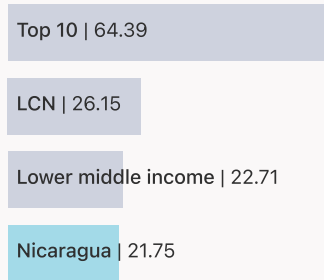
Knowledge and technology outputs



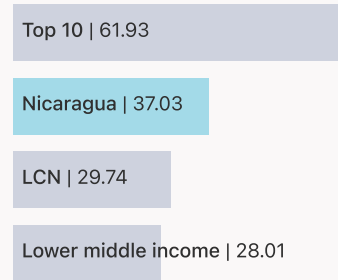
Creative outputs



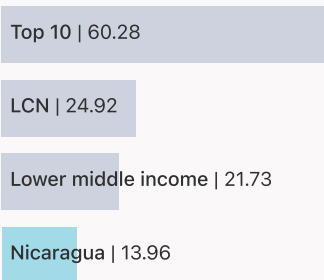
Business sophistication



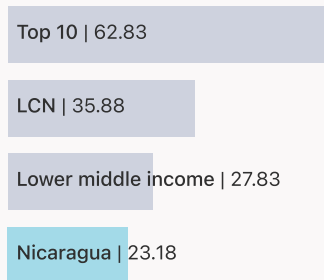
Market sophistication



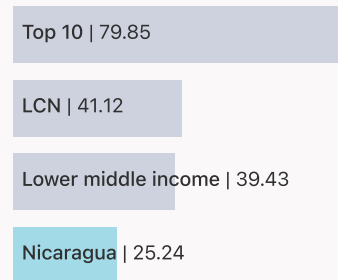
Human capital and research



Infrastructure



Institutions





→ Innovation strengths and weaknesses in Nicaragua

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



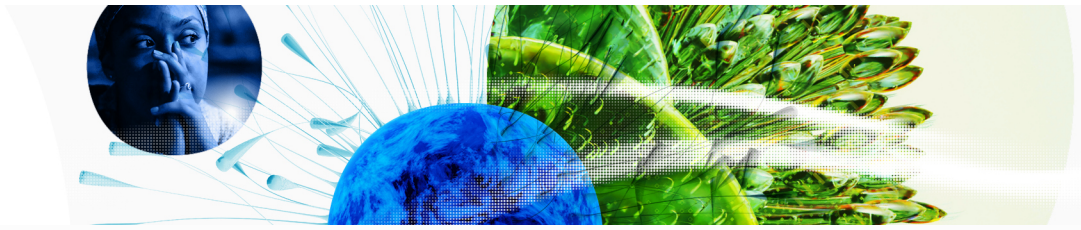
> Nicaragua's main innovation strengths are **Firms offering formal training, %** (rank 11), **Loans from microfinance institutions, % GDP** (rank 13) and **FDI net inflows, % GDP** (rank 14).

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
11	5.1.2	Firms offering formal training, %	132	1.2.2	Rule of law
13	4.1.3	Loans from microfinance institutions, % GDP	128	1.3.1	Policies for doing business
14	5.3.4	FDI net inflows, % GDP	128	5.2.1	University-industry R&D collaboration
41	6.3.4	ICT services exports, % total trade	114	6.3.1	Intellectual property receipts, % total trade
52	7.2.4	Creative goods exports, % total trade	101	6.1.2	PCT patents by origin/bn PPP\$ GDP
57	4.3.1	Applied tariff rate, weighted avg., %	95	5.2.5	Patent families/bn PPP\$ GDP
60	1.2.3	Cost of redundancy dismissal	74	7.1.3	Global brand value, top 5,000
67	3.2.3	Gross capital formation, % GDP	71	2.3.4	QS university ranking, top 3
67	5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	48	6.2.2	Unicorn valuation, % GDP
69	5.3.2	High-tech imports, % total trade	40	2.3.3	Global corporate R&D investors, top 3, mn US\$

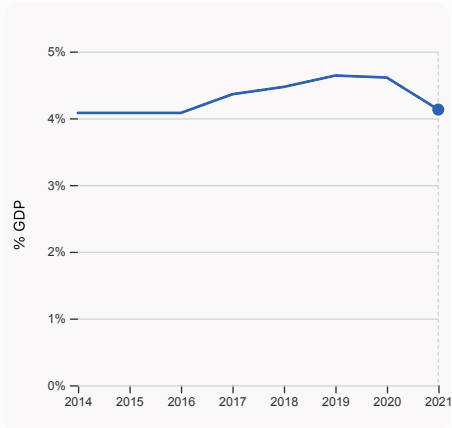
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→ Nicaragua's innovation system

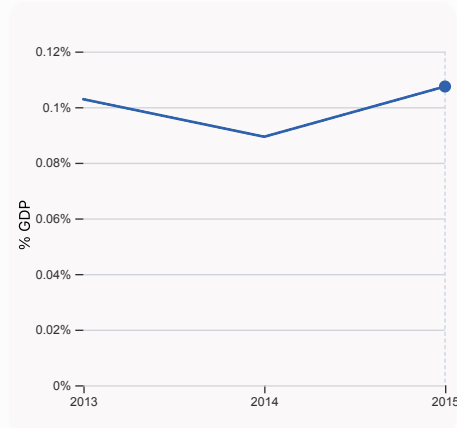
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Nicaragua



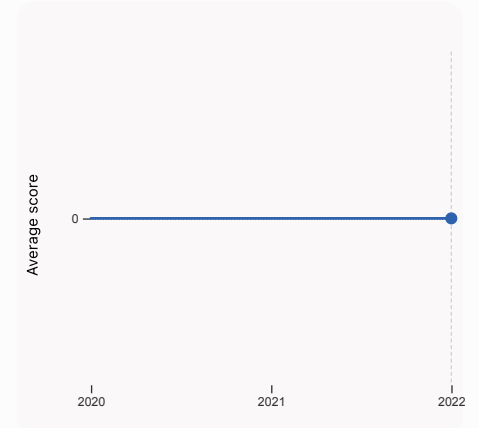
2.1.1 Expenditure on education, % GDP

was equal to 4.13% GDP in 2021, down by 0.48 percentage points from the year prior – and equivalent to an indicator rank of 67.



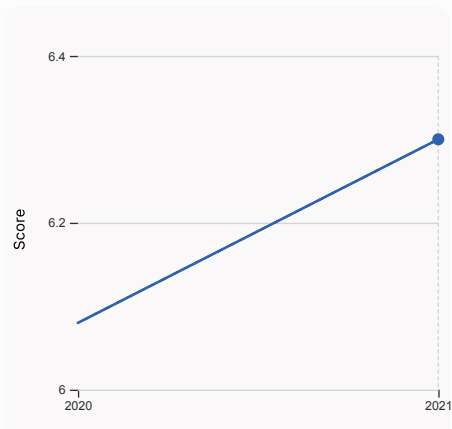
2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.107% GDP in 2015, up by 0.018 percentage points from the year prior – and equivalent to an indicator rank of 103.



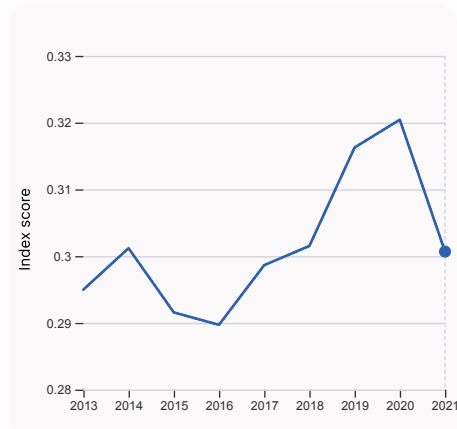
2.3.4 QS university ranking, top 3

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



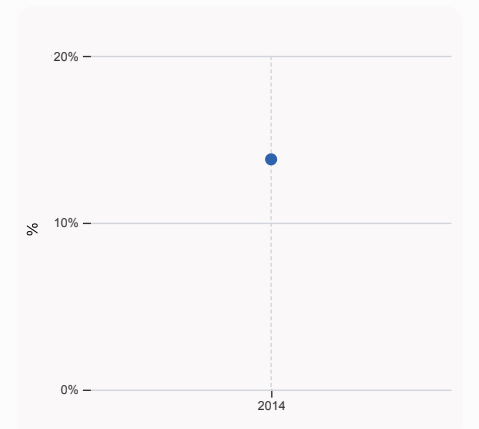
3.1.1 ICT access

was equal to a score of 6.3 in 2021, up by 3.62% from the year prior – and equivalent to an indicator rank of 114.



4.3.2 Domestic industry diversification

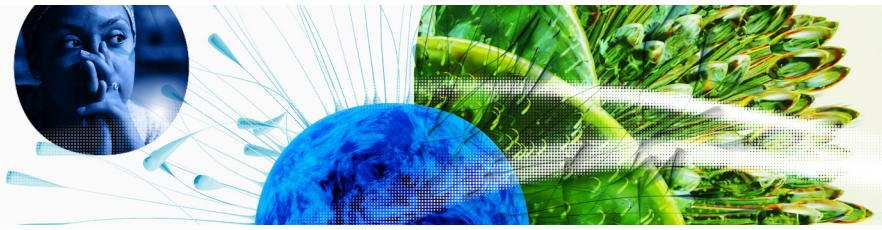
was equal to an index score of 0.301 in 2021, down by 6.17% from the year prior – and equivalent to an indicator rank of 96.



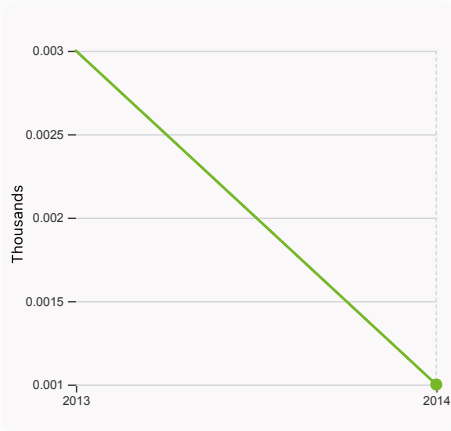
5.1.1 Knowledge-intensive employment, %

was equal to 13.8 % in 2014, equivalent to an indicator rank of 94.

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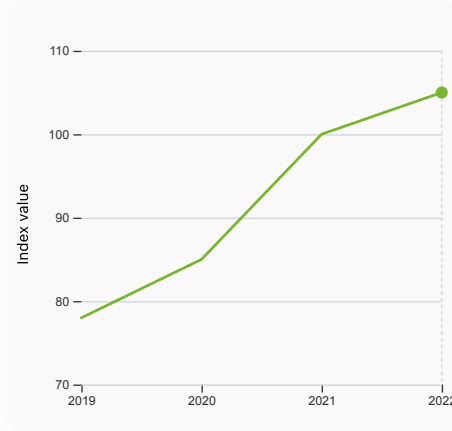


> Innovation outputs in Nicaragua



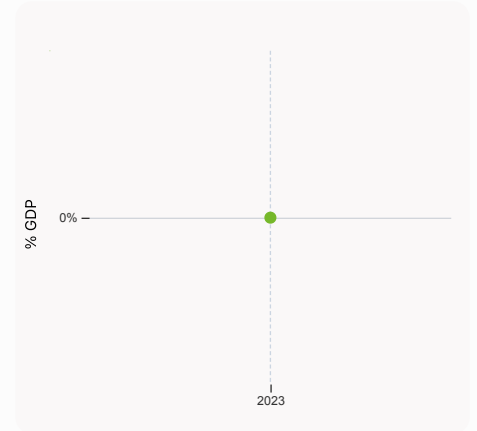
6.1.1 Patents by origin

was equal to 0.001 Thousands in 2014, down by 66.67% from the year prior – and equivalent to an indicator rank of 124.



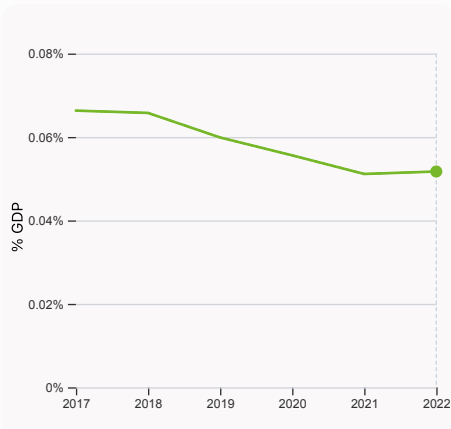
6.1.5 Citable documents H-index

was equal to an index value of 105 in 2022, up by 5% from the year prior – and equivalent to an indicator rank of 119.



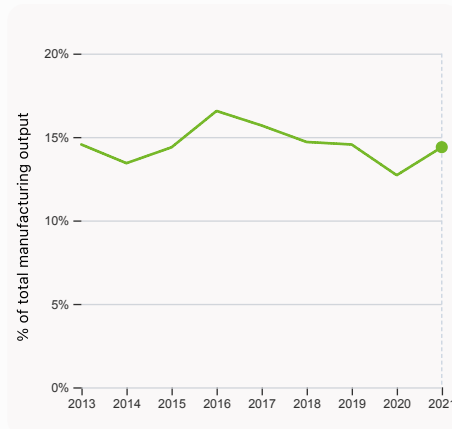
6.2.2 Unicorn valuation, % GDP

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



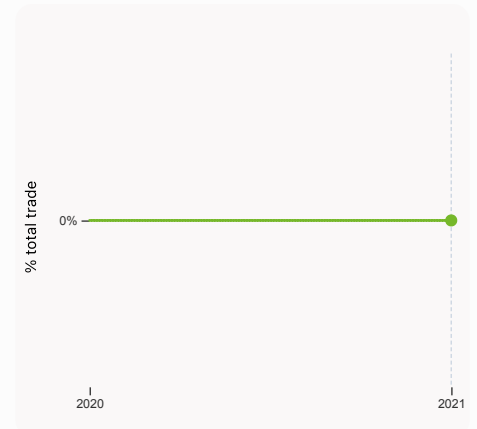
6.2.3 Software spending, % GDP

was equal to 0.052% GDP in 2022, up by 0.00059 percentage points from the year prior – and equivalent to an indicator rank of 103.



6.2.4 High-tech manufacturing, %

was equal to 14.39% of total manufacturing output in 2021, up by 1.68 percentage points from the year prior – and equivalent to an indicator rank of 79.



6.3.1 Intellectual property receipts, % total trade

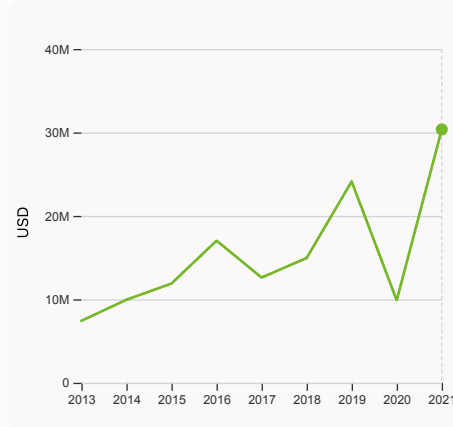
was equal to 0% total trade in 2021 – and equivalent to an indicator rank of 114.

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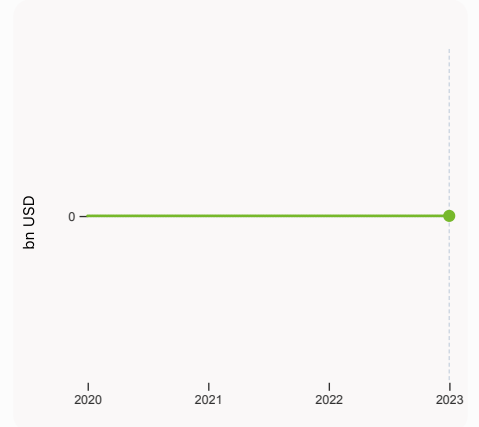
6.3.2 Production and export complexity

was equal to a score of -0.805 in 2020, up by 9.85% from the year prior – and equivalent to an indicator rank of 100.



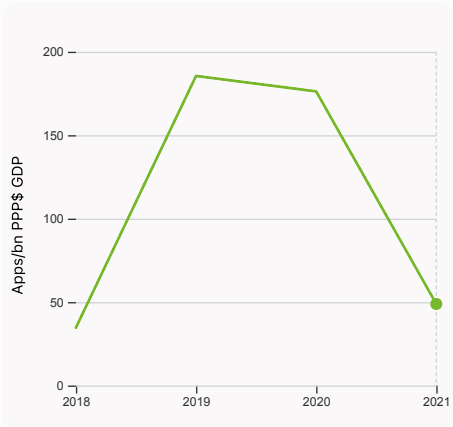
6.3.3 High-tech exports

was equal to 30,355,906 USD in 2021, up by 206.93% from the year prior – and equivalent to an indicator rank of 93.



7.1.3 Global brand value, top 5,000

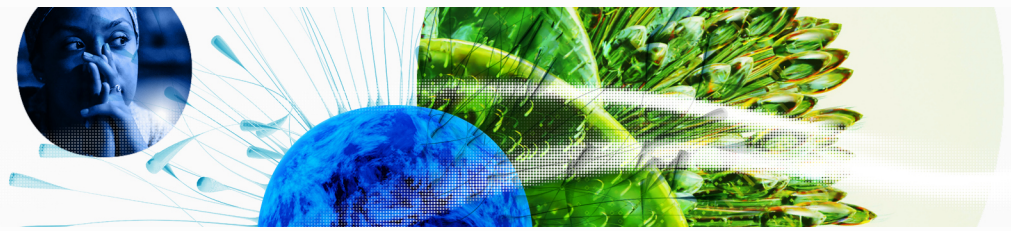
was equal to 0 bn USD in 2023 – and equivalent to an indicator rank of 74.



7.3.4 Mobile app creation/bn PPP\$ GDP

was equal to 48.87 Apps/bn PPP\$ GDP in 2021, down by 72.27% from the year prior – and equivalent to an indicator rank of 120.

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GII 2023 rank

115

Nicaragua

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$						
118	110	Lower middle	LCN	6.9	47.3	7,154.4						
Score / Value Rank				Score / Value Rank								
Institutions				25.2	127	◇	Business sophistication				21.8	97
1.1 Institutional environment				23.3	117		5.1 Knowledge workers				37.5	[53]
1.1.1 Operational stability for businesses*				33.3	114		5.1.1 Knowledge-intensive employment, %				● 13.8	94
1.1.2 Government effectiveness*				13.2	120		5.1.2 Firms offering formal training, %				● 57.3	11 ●◆
1.2 Regulatory environment				48.2	105		5.1.3 GERD performed by business, % GDP				n/a	n/a
1.2.1 Regulatory quality*				20.4	117		5.1.4 GERD financed by business, %				n/a	n/a
1.2.2 Rule of law*				0.0	132	◇	5.1.5 Females employed w/advanced degrees, %				● 6.1	90
1.2.3 Cost of redundancy dismissal				14.9	60	◆◆	5.2 Innovation linkages				3.4	129
1.3 Business environment				4.2	[131]		5.2.1 University-industry R&D collaboration+				● 2.9	128
1.3.1 Policies for doing business+				● 4.2	128	◇	5.2.2 State of cluster development+				● 4.5	127
1.3.2 Entrepreneurship policies and culture+				n/a	n/a		5.2.3 GERD financed by abroad, % GDP				n/a	n/a
Human capital and research				14.0	[120]		5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP				0.0	67
2.1 Education				31.3	[117]		5.2.5 Patent families/bn PPP\$ GDP				0.0	95
2.1.1 Expenditure on education, % GDP				4.1	67		5.3 Knowledge absorption				24.3	109
2.1.2 Government funding/pupil, secondary, % GDP/cap				n/a	n/a		5.3.1 Intellectual property payments, % total trade				0.0	112
2.1.3 School life expectancy, years				n/a	n/a		5.3.2 High-tech imports, % total trade				8.0	69
2.1.4 PISA scales in reading, maths and science				n/a	n/a		5.3.3 ICT services imports, % total trade				0.4	122
2.1.5 Pupil-teacher ratio, secondary				n/a	n/a		5.3.4 FDI net inflows, % GDP				6.2	14
2.2 Tertiary education				10.0	[112]		5.3.5 Research talent, % in businesses				n/a	n/a
2.2.1 Tertiary enrolment, % gross				● 19.1	102		Knowledge and technology outputs				10.2	122
2.2.2 Graduates in science and engineering, %				n/a	n/a		6.1 Knowledge creation				1.7	126
2.2.3 Tertiary inbound mobility, %				n/a	n/a		6.1.1 Patents by origin/bn PPP\$ GDP				● 0.0	124
2.3 Research and development (R&D)				0.6	108		6.1.2 PCT patents by origin/bn PPP\$ GDP				0.0	101
2.3.1 Researchers, FTE/mn pop.				n/a	n/a		6.1.3 Utility models by origin/bn PPP\$ GDP				n/a	n/a
2.3.2 Gross expenditure on R&D, % GDP				● 0.1	103		6.1.4 Scientific and technical articles/bn PPP\$ GDP				n/a	n/a
2.3.3 Global corporate R&D investors, top 3, mn US\$				0.0	40	◇	6.1.5 Citable documents H-index				3.5	119
2.3.4 QS university ranking, top 3*				0.0	71	◇	6.2 Knowledge impact				15.0	122
Infrastructure				23.2	113		6.2.1 Labor productivity growth, %				-0.6	110
3.1 Information and communication technologies (ICTs)				38.8	109		6.2.2 Unicorn valuation, % GDP				0.0	48
3.1.1 ICT access*				44.2	114		6.2.3 Software spending, % GDP				0.1	103
3.1.2 ICT use*				44.9	108		6.2.4 High-tech manufacturing, %				14.4	79
3.1.3 Government's online service*				42.6	104		6.3 Knowledge diffusion				13.9	93
3.1.4 E-participation*				23.3	115		6.3.1 Intellectual property receipts, % total trade				0.0	114
3.2 General infrastructure				13.6	110		6.3.2 Production and export complexity				35.7	100
3.2.1 Electricity output, GWh/mn pop.				● 572.1	108		6.3.3 High-tech exports, % total trade				0.4	93
3.2.2 Logistics performance*				18.2	89		6.3.4 ICT services exports, % total trade				3.1	41
3.2.3 Gross capital formation, % GDP				24.1	67	◆◆	6.3.5 ISO 9001 quality/bn PPP\$ GDP				0.7	114
3.3 Ecological sustainability				17.1	97		Creative outputs				8.7	111
3.3.1 GDP/unit of energy use				8.5	85		7.1 Intangible assets				8.9	109
3.3.2 Environmental performance*				31.9	82		7.1.1 Intangible asset intensity, top 15, %				n/a	n/a
3.3.3 ISO 14001 environment/bn PPP\$ GDP				0.2	117		7.1.2 Trademarks by origin/bn PPP\$ GDP				● 41.0	55
Market sophistication				37.0	58	◆◆	7.1.3 Global brand value, top 5,000				0.0	74
4.1 Credit				21.3	89		7.1.4 Industrial designs by origin/bn PPP\$ GDP				● 0.0	120
4.1.1 Finance for startups and scaleups+				n/a	n/a		7.2 Creative goods and services				9.4	[69]
4.1.2 Domestic credit to private sector, % GDP				30.1	96		7.2.1 Cultural and creative services exports, % total trade				n/a	n/a
4.1.3 Loans from microfinance institutions, % GDP				2.8	13	◆◆	7.2.2 National feature films/mn pop. 15-69				n/a	n/a
4.2 Investment				n/a	[n/a]		7.2.3 Entertainment and media market/th pop. 15-69				n/a	n/a
4.2.1 Market capitalization, % GDP				n/a	n/a		7.2.4 Creative goods exports, % total trade				0.8	52
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP				n/a	n/a		7.3 Online creativity				7.7	119
4.2.3 VC recipients, deals/bn PPP\$ GDP				n/a	n/a		7.3.1 Generic top-level domains (TLDs)/th pop. 15-69				3.0	72
4.2.4 VC received, value, % GDP				n/a	n/a		7.3.2 Country-code TLDs/th pop. 15-69				0.3	109
4.3 Trade, diversification, and market scale				52.8	82		7.3.3 GitHub commits/mn pop. 15-69				1.6	106
4.3.1 Applied tariff rate, weighted avg., %				1.8	57	◆◆	7.3.4 Mobile app creation/bn PPP\$ GDP				● 26.1	120
4.3.2 Domestic industry diversification				69.3	96							
4.3.3 Domestic market scale, bn PPP\$				47.3	109							

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 Nicaragua.



> Nicaragua has missing data for twenty two indicators and outdated data for thirteen indicators.

> Missing data for Nicaragua

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2019	UNESCO Institute for Statistics
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
2.1.5	Pupil-teacher ratio, secondary	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
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
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization;

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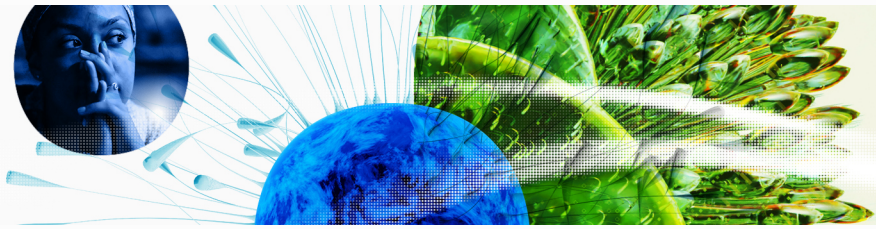


Code	Indicator name	Economy Year	Model Year	Source
				International Monetary Fund
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.2.1	Cultural and creative services exports, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development
7.2.2	National feature films/mn pop. 15-69	n/a	2021	OMDIA; United Nations, World Population Prospects
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 Nicaragua

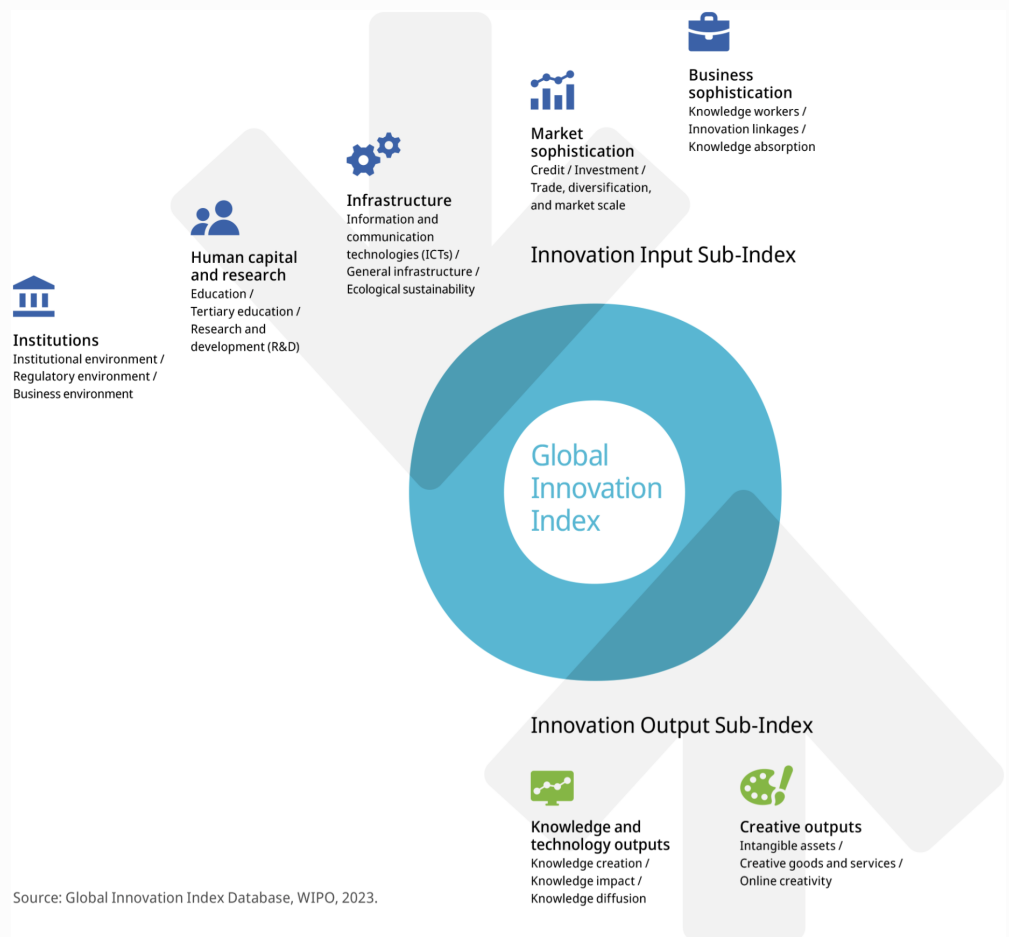
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
2.2.1	Tertiary enrolment, % gross	2015	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2015	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
5.1.1	Knowledge-intensive employment, %	2014	2022	International Labour Organization
5.1.2	Firms offering formal training, %	2016	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2014	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
6.1.1	Patents by origin/bn PPP\$ GDP	2014	2021	World Intellectual Property Organization; International Monetary Fund
7.1.2	Trademarks by origin/bn PPP\$ GDP	2013	2021	World Intellectual Property Organization; International Monetary Fund
7.1.4	Industrial designs by origin/bn PPP\$ GDP	2014	2021	World Intellectual Property Organization; International Monetary Fund
7.3.4	Mobile app creation/bn PPP\$ GDP	2021	2022	data.ia; 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.