NICARAGUA

108th Nicaragua ranks 108th among the 132 economies featured in the GII 2022.

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.

The following table shows the rankings of Nicaragua over the past three years, noting that 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 2022 is between ranks 103 and 109.

Rankings for Nicaragua (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020			
2021			
2022	108	99	112

- Nicaragua performs better in innovation inputs than innovation outputs in 2022.
- This year Nicaragua ranks 99th in innovation inputs and was not ranked last year.
- As for innovation outputs, Nicaragua ranks 112th .

24th Nicaragua ranks 24th among the 36 lower-middle-income group economies.

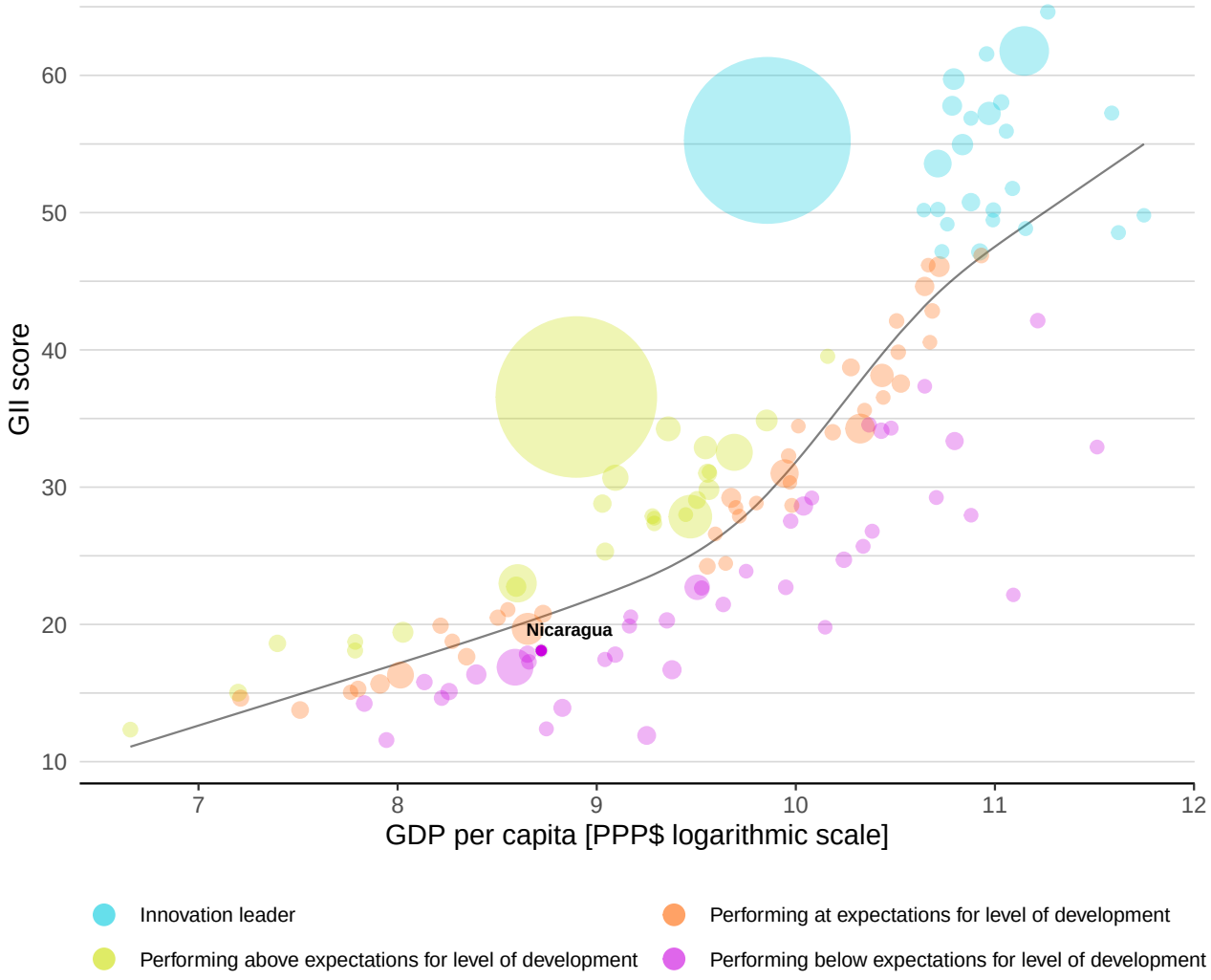
16th Nicaragua ranks 16th among the 18 economies in Latin America and the Caribbean.

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.

The positive relationship between innovation and development

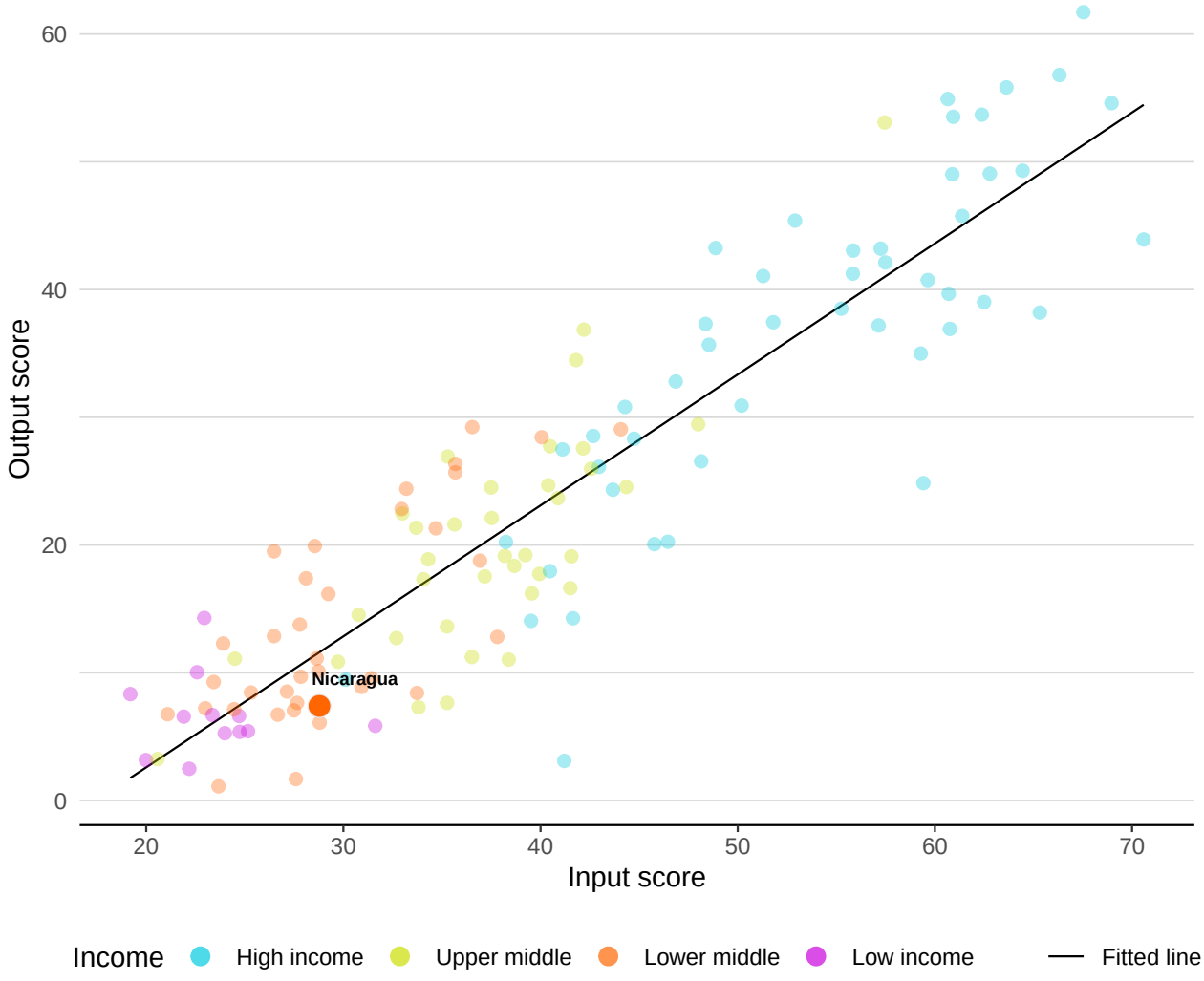


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Innovation input to output performance



BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND LATIN AMERICA AND THE CARIBBEAN

The seven GII pillar scores for Nicaragua

Lower-middle-income group economies

Nicaragua performs above the lower-middle-income group average in two pillars, namely: Market sophistication; and, Business sophistication.

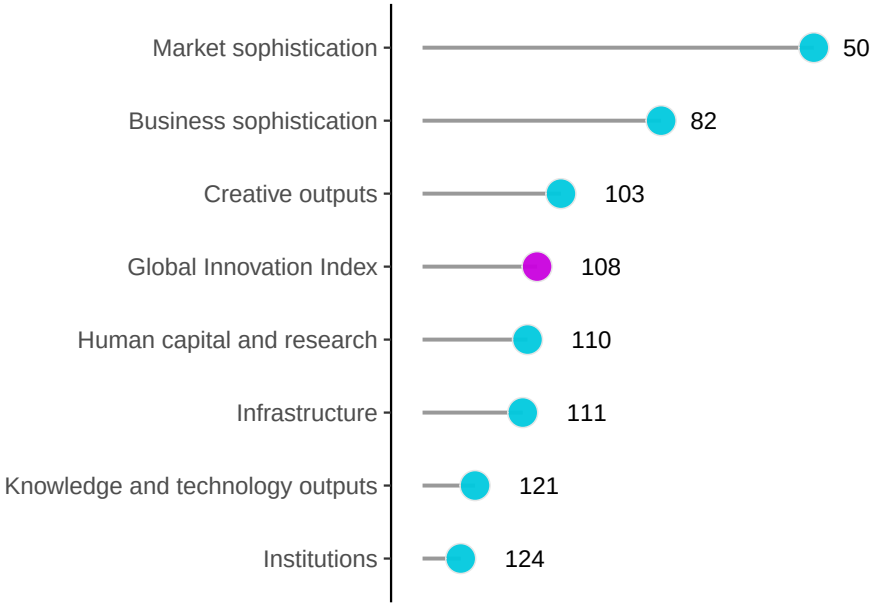
Latin America and the Caribbean

Nicaragua performs above the regional average in Market sophistication.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Nicaragua performs best in Market sophistication and its weakest performance is in Institutions.

The seven GII pillar ranks for Nicaragua



Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Nicaragua can be found at:

https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=NI.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Nicaragua in the GII 2022.

Strengths and weaknesses for Nicaragua

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redundancy dismissal	60	1.3.1	Policies for doing business	127
2.1.1	Expenditure on education, % GDP	55	2.3.3	Global corporate R&D investors, top 3, mn USD	38
4.1.3	Loans from microfinance institutions, % GDP	12	2.3.4	QS university ranking, top 3	72
4.3.1	Applied tariff rate, weighted avg., %	58	5.2.1	University-industry R&D collaboration	125
5.1.2	Firms offering formal training, %	12	5.2.2	State of cluster development and depth	125
5.3.4	FDI net inflows, % GDP	25	5.2.5	Patent families/bn PPP$ GDP	101
6.3.4	ICT services exports, % total trade	37	6.1.2	PCT patents by origin/bn PPP$ GDP	101
7.1.2	Trademarks by origin/bn PPP$ GDP	60	6.3.1	Intellectual property receipts, % total trade	113
7.2.5	Creative goods exports, % total trade	50	7.1.3	Global brand value, top 5,000, % GDP	77
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	69	7.1.4	Industrial designs by origin/bn PPP$ GDP	121

GII 2022 rank

Nicaragua

108

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
112	99	Lower middle	LCN	6.7	40.1	6,133

		Score/ Value	Rank
Institutions		**37.9**	**124** ◇
1.1	**Political environment**	45.3	114
1.1.1	Political and operational stability*	56.4	108
1.1.2	Government effectiveness*	34.3	111
1.2	**Regulatory environment**	53.9	97
1.2.1	Regulatory quality*	28.5	109
1.2.2	Rule of law*	14.5	127 ◇
1.2.3	Cost of redundancy dismissal	14.9	60 ●
1.3	**Business environment**	14.5	[128]
1.3.1	Policies for doing business†	14.5	127 ○ ◇
1.3.2	Entrepreneurship policies and culture*	n/a	n/a
Human capital and research		**16.9**	**[110]**
2.1	**Education**	39.7	[97]
2.1.1	Expenditure on education, % GDP	4.6	55 ●
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a
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	n/a	n/a
2.2	**Tertiary education**	10.7	[109]
2.2.1	Tertiary enrolment, % gross	19.6	97
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)**	0.4	109
2.3.1	Researchers, FTE/mn pop.	n/a	n/a
2.3.2	Gross expenditure on R&D, % GDP ◴	0.1	104
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38 ○ ◇
2.3.4	QS university ranking, top 3*	0.0	72 ○ ◇
Infrastructure		**28.2**	**111**
3.1	**Information and communication technologies (ICTs)**	50.6	103
3.1.1	ICT access*	60.8	114
3.1.2	ICT use*	34.4	107
3.1.3	Government's online service*	54.7	95
3.1.4	E-participation*	52.4	96
3.2	**General infrastructure**	14.3	123 ◇
3.2.1	Electricity output, GWh/mn pop. ◴	697.7	103
3.2.2	Logistics performance*	n/a	n/a
3.2.3	Gross capital formation, % GDP	20.0	92
3.3	**Ecological sustainability**	19.8	94
3.3.1	GDP/unit of energy use	8.3	88
3.3.2	Environmental performance*	37.7	80
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.2	107
Market sophistication		**37.2**	**50** ●
4.1	**Credit**	24.9	73
4.1.1	Finance for startups and scaleups*	n/a	n/a
4.1.2	Domestic credit to private sector, % GDP	30.0	93
4.1.3	Loans from microfinance institutions, % GDP	2.8	12 ●
4.2	**Investment**	n/a	[n/a]
4.2.1	Market capitalization, % GDP	n/a	n/a
4.2.2	Venture capital investors, deals/bn PPP$ GDP	n/a	n/a
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	n/a	n/a
4.2.4	Venture capital received, value, % GDP	n/a	n/a
4.3	**Trade, diversification, and market scale**	49.5	82
4.3.1	Applied tariff rate, weighted avg., %	1.8	58 ● ◆
4.3.2	Domestic industry diversification	59.6	97
4.3.3	Domestic market scale, bn PPP$	40.1	113

		Score/ Value	Rank
Business sophistication		**23.7**	**82**
5.1	**Knowledge workers**	36.2	[55]
5.1.1	Knowledge-intensive employment, % ◴	13.8	94
5.1.2	Firms offering formal training, % ◴	57.3	12 ● ◆
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, % ◴	6.1	90
5.2	**Innovation linkages**	14.9	122 ◇
5.2.1	University-industry R&D collaboration†	22.4	125 ○ ◇
5.2.2	State of cluster development and depth†	30.8	125 ○ ◇
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	69
5.2.5	Patent families/bn PPP$ GDP	0.0	101 ○ ◇
5.3	**Knowledge absorption**	19.9	112
5.3.1	Intellectual property payments, % total trade	0.0	113
5.3.2	High-tech imports, % total trade	7.5	81
5.3.3	ICT services imports, % total trade	0.4	120
5.3.4	FDI net inflows, % GDP	4.0	25 ●
5.3.5	Research talent, % in businesses	n/a	n/a
Knowledge and technology outputs		**7.3**	**121**
6.1	**Knowledge creation**	1.5	126
6.1.1	Patents by origin/bn PPP$ GDP ◴	0.0	124
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	101 ○ ◇
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a
6.1.4	Scientific and technical articles/bn PPP$ GDP	2.5	123
6.1.5	Citable documents H-index	3.0	118
6.2	**Knowledge impact**	8.1	[119]
6.2.1	Labor productivity growth, %	n/a	n/a
6.2.2	New businesses/th pop. 15–64	n/a	n/a
6.2.3	Software spending, % GDP	0.1	97
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	1.4	98
6.2.5	High-tech manufacturing, %	12.8	80
6.3	**Knowledge diffusion**	12.1	94
6.3.1	Intellectual property receipts, % total trade	0.0	113 ○ ◇
6.3.2	Production and export complexity	21.0	99
6.3.3	High-tech exports, % total trade	0.2	110
6.3.4	ICT services exports, % total trade	3.3	37 ●
Creative outputs		**7.5**	**103**
7.1	**Intangible assets**	9.7	103
7.1.1	Intangible asset intensity, top 15, %	n/a	n/a
7.1.2	Trademarks by origin/bn PPP$ GDP ◴	41.0	60 ●
7.1.3	Global brand value, top 5,000, % GDP	0.0	77 ○ ◇
7.1.4	Industrial designs by origin/bn PPP$ GDP ◴	0.0	121 ○ ◇
7.2	**Creative goods and services**	9.6	[84]
7.2.1	Cultural and creative services exports, % total trade	n/a	n/a
7.2.2	National feature films/mn pop. 15–69	n/a	n/a
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a
7.2.4	Printing and other media, % manufacturing	n/a	n/a
7.2.5	Creative goods exports, % total trade	0.8	50 ●
7.3	**Online creativity**	1.0	101
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	2.7	69 ● ◆
7.3.2	Country-code TLDs/th pop. 15–69	0.3	105
7.3.3	GitHub commit pushes received/mn pop. 15–69	1.0	103
7.3.4	Mobile app creation/bn PPP$ GDP	0.0	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/global_innovation_index/en/2022. 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.

Missing data for Nicaragua

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2018	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2019	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	2019	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	n/a	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2020	UNESCO Institute for Statistics
3.2.2	Logistics performance	n/a	2018	Logistics Performance Index, World Bank
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges
4.2.2	Venture capital investors, deals/bn PPP$ GDP	n/a	2021	Refinitiv
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	n/a	2021	Refinitiv
4.2.4	Venture capital received, value, % GDP	n/a	2021	Refinitiv
5.1.3	GERD performed by business, % GDP	n/a	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	n/a	2019	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, % GDP	n/a	2019	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2020	World Intellectual Property Organization
6.2.1	Labor productivity growth, %	n/a	2021	The Conference Board
6.2.2	New businesses/th pop. 15–64	n/a	2020	World Bank, Enterpreneurship Database
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
7.2.1	Cultural and creative services exports, % total trade	n/a	2020	World Trade Organization and United Nations Conference on Trade and Development
7.2.2	National feature films/mn pop. 15–69	n/a	2019	OMDIA
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO
7.2.4	Printing and other media, % manufacturing	n/a	2019	United Nations Industrial Development Organization

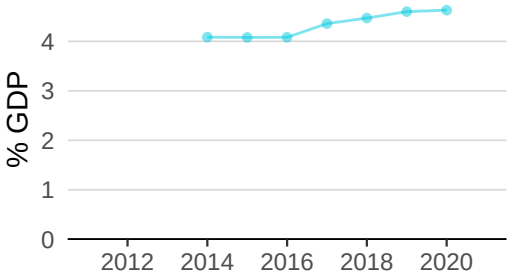
Outdated data for Nicaragua

Code	Indicator name	Economy year	Model year	Source
2.3.2	Gross expenditure on R&D, % GDP	2015	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
5.1.1	Knowledge-intensive employment, %	2014	2021	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	2021	International Labour Organization
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	2020	2021	Refinitiv
6.1.1	Patents by origin/bn PPP$ GDP	2014	2020	World Intellectual Property Organization
7.1.2	Trademarks by origin/bn PPP$ GDP	2013	2020	World Intellectual Property Organization
7.1.4	Industrial designs by origin/bn PPP$ GDP	2014	2020	World Intellectual Property Organization

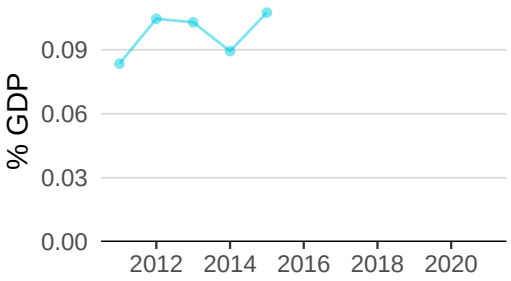
NICARAGUA'S INNOVATION SYSTEM

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

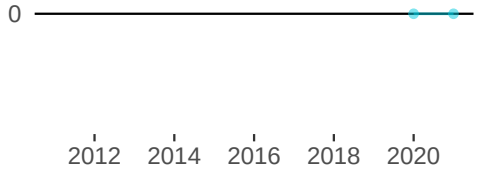
Innovation inputs



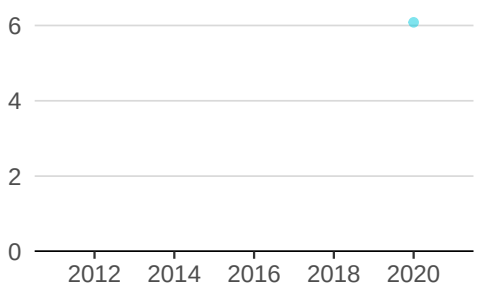
2.1.1 Expenditure on education was equal to 4.6% GDP in 2020–up by 1 percentage point from the year prior–and equivalent to an indicator rank of 55.



2.3.2 Gross expenditure on R&D was equal to 0.1% GDP in 2015–up by 20 percentage points from the year prior–and equivalent to an indicator rank of 104.

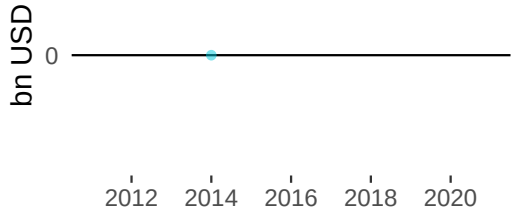


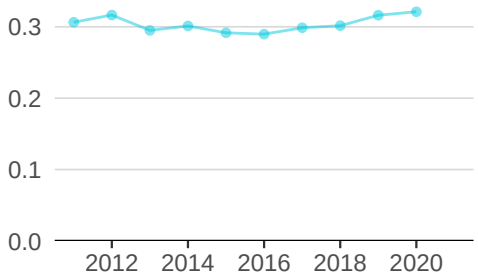
2.3.4 QS university ranking was equal to 0.0 in 2021–effectively unchanged from the year prior–and equivalent to an indicator rank of 72.



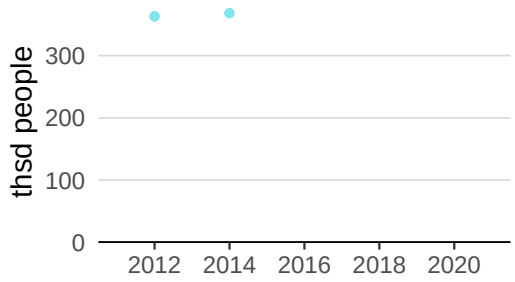
3.1.1 ICT access was equal to 6.1 in 2020 and equivalent to an indicator rank of 114.

4.2.4 Venture capital received was equal to 0.0 bn USD in 2014 .



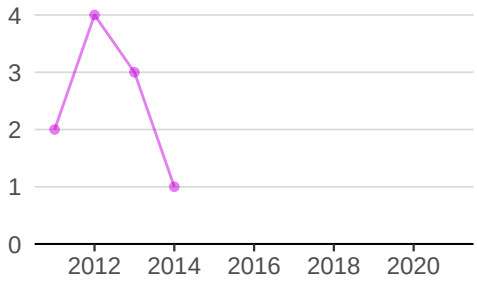


4.3.2 Domestic industry diversification was equal to 0.3 in 2020–up by 2 percentage points from the year prior–and equivalent to an indicator rank of 97.

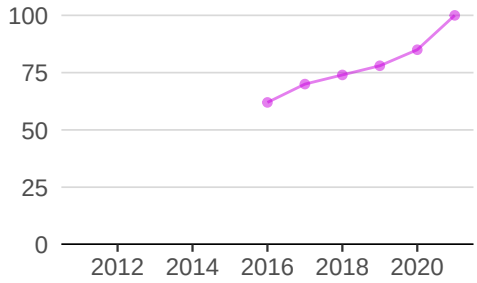


5.1.1 Knowledge-intensive employment was equal to 368.3 thsd people in 2014 and equivalent to an indicator rank of 94.

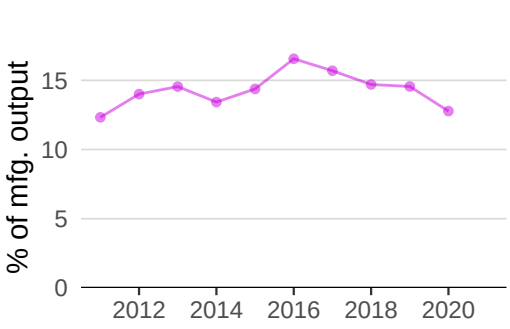
Innovation outputs



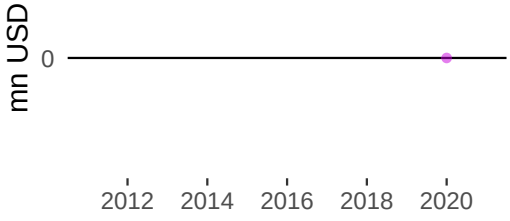
6.1.1 Patents by origin was equal to 1.0 in 2014–down by 67 percentage points from the year prior–and equivalent to an indicator rank of 124.



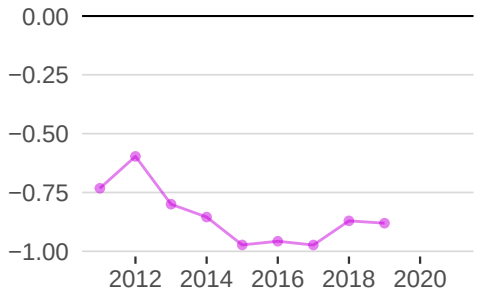
6.1.5 Citable documents H-index was equal to 100.0 in 2021–up by 18 percentage points from the year prior–and equivalent to an indicator rank of 118.



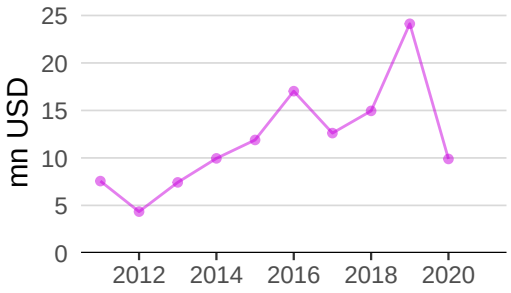
6.2.5 High-tech manufacturing was equal to 12.8% of mfg. output in 2020–down by 12 percentage points from the year prior–and equivalent to an indicator rank of 80.



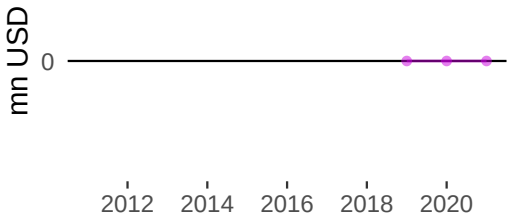
6.3.1 Intellectual property receipts was equal to 0.0 mn USD in 2020 and equivalent to an indicator rank of 113.



6.3.2 Production and export complexity was equal to -0.9 in 2019–down by 1 percentage point from the year prior–and equivalent to an indicator rank of 99.



6.3.3 High-tech exports was equal to 9.9 mn USD in 2020–down by 59 percentage points from the year prior–and equivalent to an indicator rank of 110.



7.1.3 Global brand value was equal to 0.0 mn USD in 2021–effectively unchanged from the year prior–and equivalent to an indicator rank of 77.

NICARAGUA'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank

No observations

Source: European Commission's Joint Research Centre (https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard).

2.3.4 QS university ranking

University	Score	Rank

No observations

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2022).

7.1.1 Intangible asset intensity, top 15

Firm	Rank

No observations

Source: Brand Finance (https://brandirectory.com/reports/gift-2021).

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank

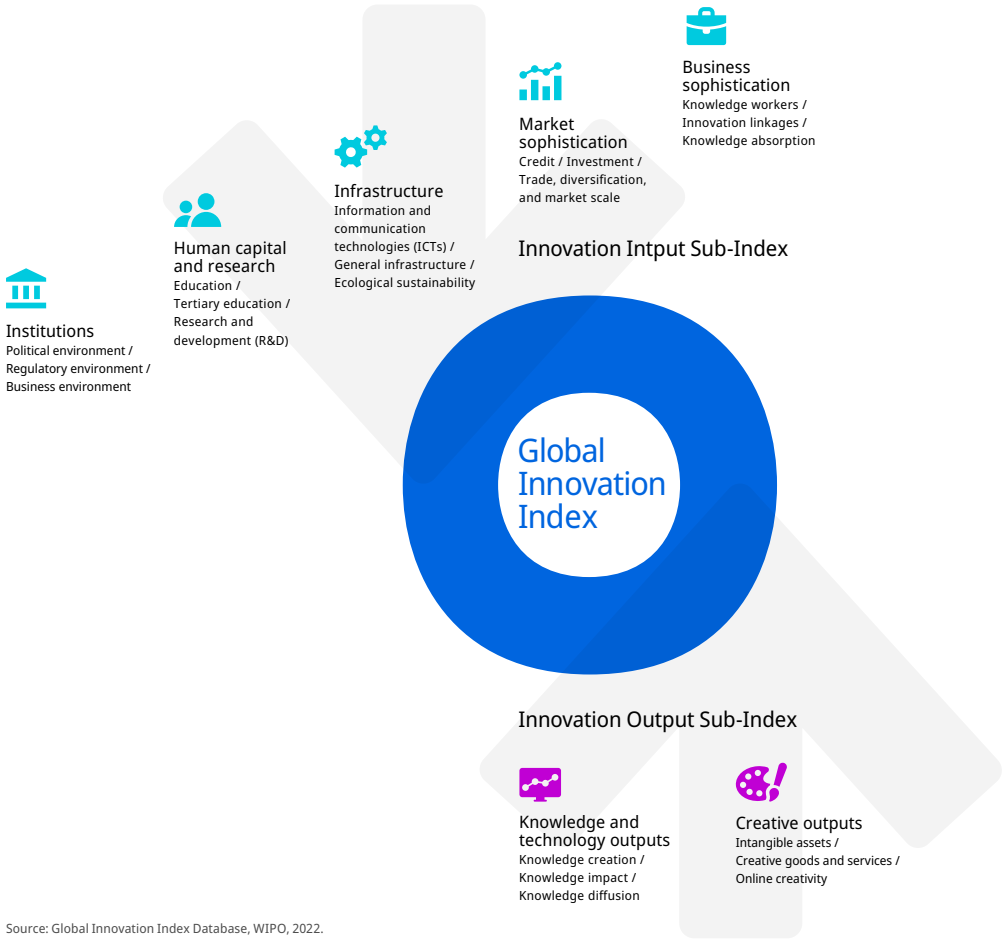
No observations

Source: Brand Finance (https://brandirectory.com).

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.

Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a “tool for action” for economies that incorporate the GII into their innovation agendas.



Source: Global Innovation Index Database, WIPO, 2022.

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.