Global Innovation Index 2022

COSTA RICA

68th Costa Rica ranks 68th 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 Costa Rica 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 Costa Rica in the GII 2022 is between ranks 61 and 70.

Rankings for Costa Rica (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	56	66	51
2021	56	66	49
2022	68	67	71

- Costa Rica performs better in innovation inputs than innovation outputs in 2022.
- This year Costa Rica ranks 67th in innovation inputs, lower than both 2021 and 2020.
- As for innovation outputs, Costa Rica ranks 71st. This position is lower than both 2021 and 2020.

18th Costa Rica ranks 18th among the 36 upper-middle-income group economies.

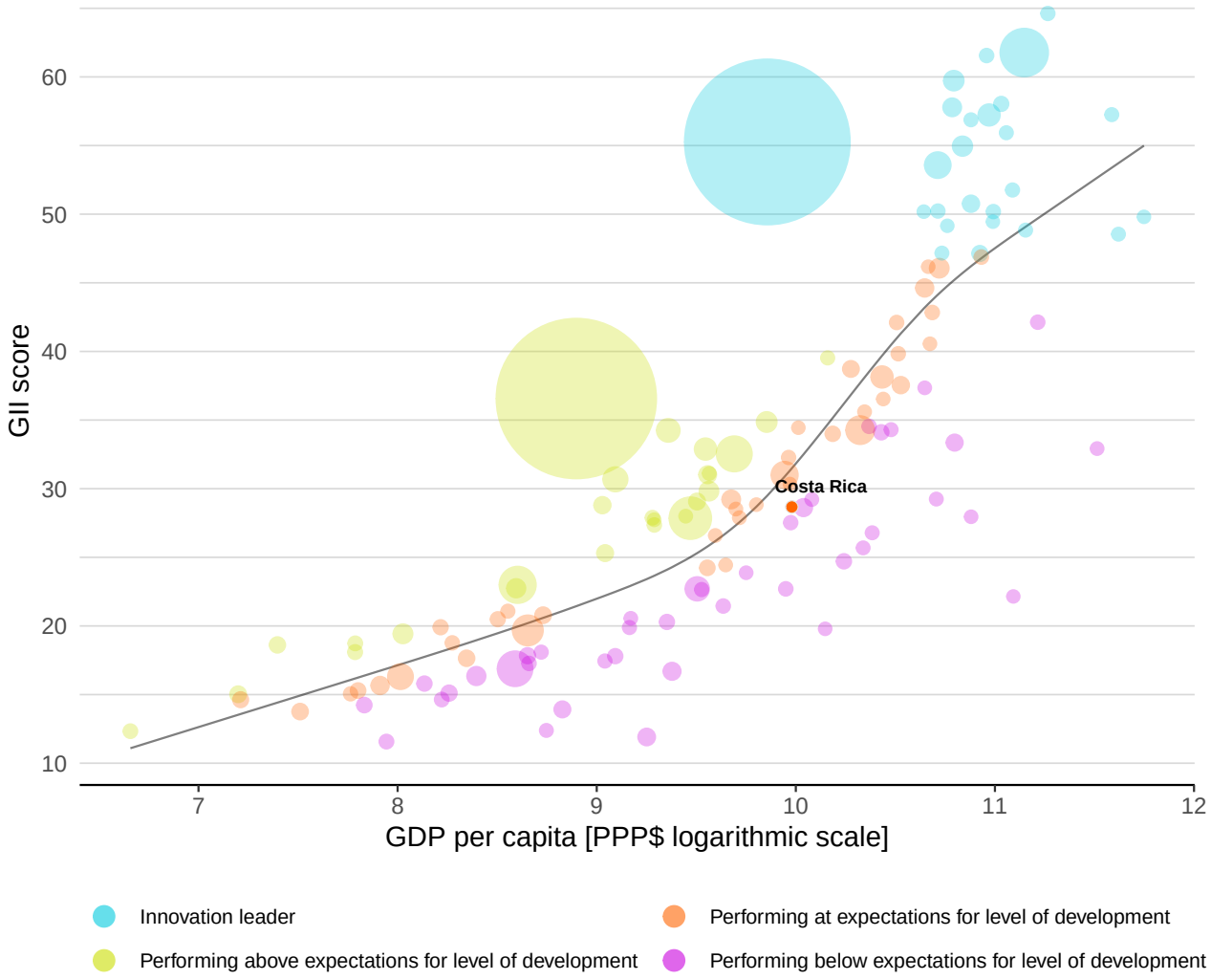
7th Costa Rica ranks 7th among the 18 economies in Latin America and the Caribbean.

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, Costa Rica's performance is at expectations for its level of development.

The positive relationship between innovation and development

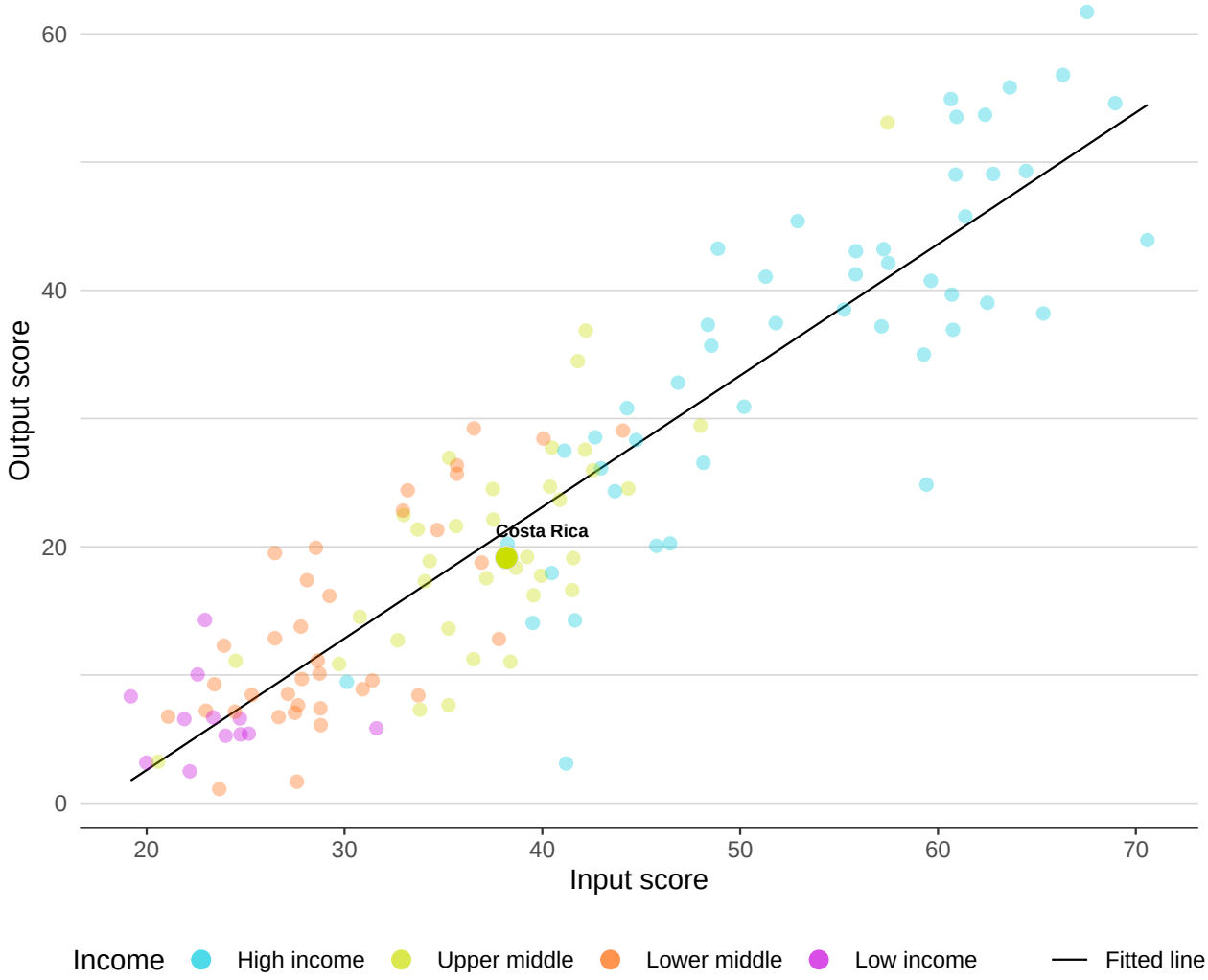


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

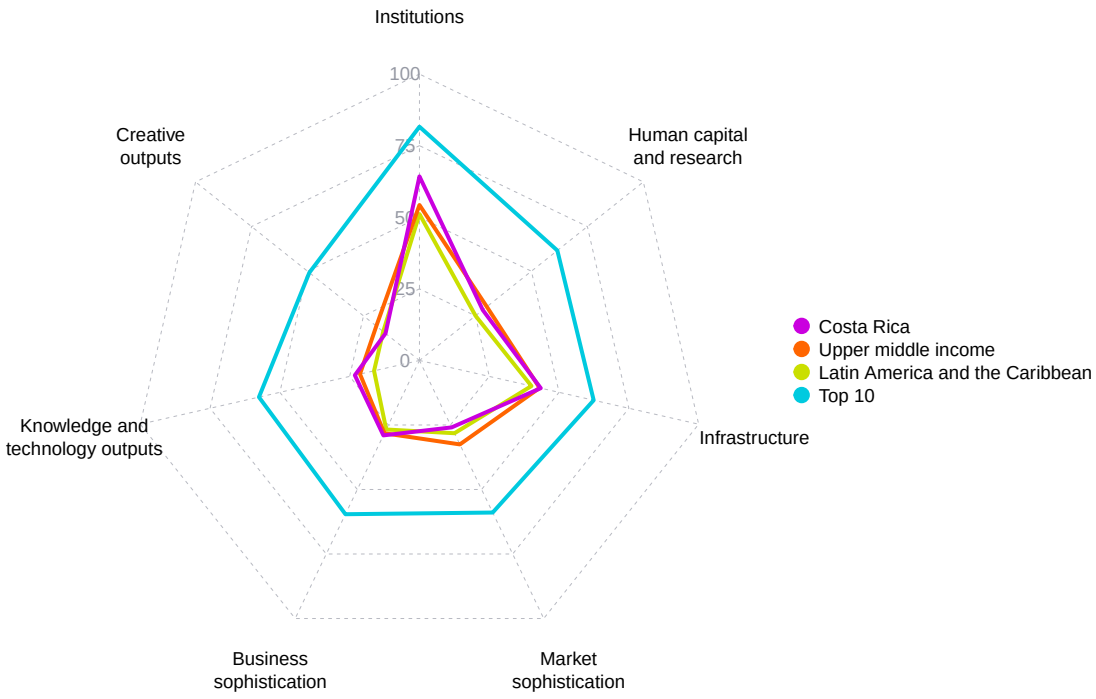
Costa Rica produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



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

The seven GII pillar scores for Costa Rica



Upper-middle-income group economies

Costa Rica performs above the upper-middle-income group average in four pillars, namely: Institutions; Infrastructure; Business sophistication; and, Knowledge and technology outputs.

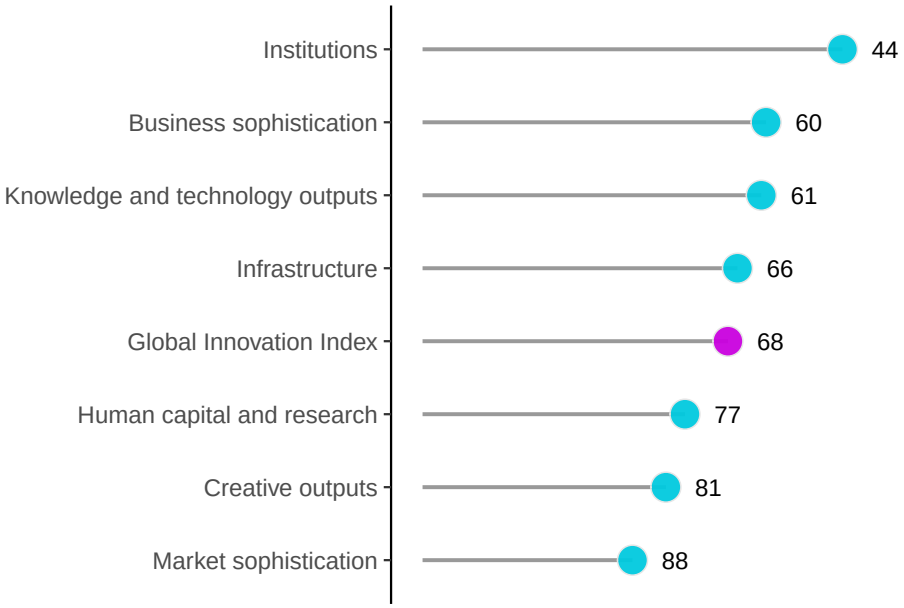
Latin America and the Caribbean

Costa Rica performs above the regional average in five pillars, namely: Institutions; Human capital and research; Infrastructure; Business sophistication; and, Knowledge and technology outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

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

The seven GII pillar ranks for Costa Rica



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

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Costa Rica

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
2.1.1	Expenditure on education, % GDP	10	2.2.2	Graduates in science and engineering, %	90
2.1.3	School life expectancy, years	23	2.3.3	Global corporate R&D investors, top 3, mn USD	38
3.3.1	GDP/unit of energy use	12	3.2.3	Gross capital formation, % GDP	99
5.3.1	Intellectual property payments, % total trade	6	4.2.1	Market capitalization, % GDP	79
5.3.2	High-tech imports, % total trade	29	4.2.3	Venture capital recipients, deals/bn PPP$ GDP	85
5.3.4	FDI net inflows, % GDP	23	4.2.4	Venture capital received, value, % GDP	92
6.3.3	High-tech exports, % total trade	33	5.1.4	GERD financed by business, %	86
6.3.4	ICT services exports, % total trade	8	6.1.1	Patents by origin/bn PPP$ GDP	109
7.1.2	Trademarks by origin/bn PPP$ GDP	20	7.1.3	Global brand value, top 5,000, % GDP	77
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	36	7.1.4	Industrial designs by origin/bn PPP$ GDP	113

GII 2022 rank

Costa Rica

68

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
71	67	Upper middle	LCN	5.1	111.9	21,592

		Score/ Value	Rank	
Institutions		**64.3**	**44**	◆
1.1	**Political environment**	63.3	54	
1.1.1	Political and operational stability*	69.1	63	
1.1.2	Government effectiveness*	57.5	52	
1.2	**Regulatory environment**	68.7	55	
1.2.1	Regulatory quality*	56.2	51	
1.2.2	Rule of law*	60.9	42	◆
1.2.3	Cost of redundancy dismissal	18.7	78	
1.3	**Business environment**	60.9	[33]	
1.3.1	Policies for doing business†	60.9	36	◆
1.3.2	Entrepreneurship policies and culture*	n/a	n/a	
Human capital and research		**28.3**	**77**	
2.1	**Education**	58.2	45	
2.1.1	Expenditure on education, % GDP	6.7	10	● ◆
2.1.2	Government funding/pupil, secondary, % GDP/cap	23.5	31	
2.1.3	School life expectancy, years	16.5	23	● ◆
2.1.4	PISA scales in reading, maths and science	414.8	59	
2.1.5	Pupil-teacher ratio, secondary	12.8	54	
2.2	**Tertiary education**	21.0	89	
2.2.1	Tertiary enrolment, % gross	57.7	56	
2.2.2	Graduates in science and engineering, %	16.2	90	○
2.2.3	Tertiary inbound mobility, %	1.2	87	
2.3	**Research and development (R&D)**	5.7	69	
2.3.1	Researchers, FTE/mn pop.	345.1	79	
2.3.2	Gross expenditure on R&D, % GDP	0.4	69	
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38	○ ◇
2.3.4	QS university ranking, top 3*	11.6	59	
Infrastructure		**43.4**	**66**	
3.1	**Information and communication technologies (ICTs)**	73.0	65	
3.1.1	ICT access*	91.3	36	
3.1.2	ICT use*	67.0	59	
3.1.3	Government's online service*	68.2	72	
3.1.4	E-participation*	65.5	77	
3.2	**General infrastructure**	22.8	92	
3.2.1	Electricity output, GWh/mn pop.	2,169.0	78	
3.2.2	Logistics performance*	34.4	72	
3.2.3	Gross capital formation, % GDP	19.0	99	○
3.3	**Ecological sustainability**	34.6	43	
3.3.1	GDP/unit of energy use	17.2	12	● ◆
3.3.2	Environmental performance*	46.3	53	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	1.3	63	
Market sophistication		**25.9**	**88**	
4.1	**Credit**	21.8	[83]	
4.1.1	Finance for startups and scaleups*	n/a	n/a	
4.1.2	Domestic credit to private sector, % GDP	60.7	56	
4.1.3	Loans from microfinance institutions, % GDP	n/a	n/a	
4.2	**Investment**	1.5	106	○
4.2.1	Market capitalization, % GDP	3.5	79	○
4.2.2	Venture capital investors, deals/bn PPP$ GDP	0.0	74	
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	0.0	85	○
4.2.4	Venture capital received, value, % GDP	0.0	92	○
4.3	**Trade, diversification, and market scale**	54.5	73	
4.3.1	Applied tariff rate, weighted avg., %	1.5	48	
4.3.2	Domestic industry diversification	71.0	84	
4.3.3	Domestic market scale, bn PPP$	111.9	84	

		Score/ Value	Rank	
Business sophistication		**29.0**	**60**	
5.1	**Knowledge workers**	19.1	98	◇
5.1.1	Knowledge-intensive employment, %	22.0	68	
5.1.2	Firms offering formal training, %	n/a	n/a	
5.1.3	GERD performed by business, % GDP	0.1	58	
5.1.4	GERD financed by business, %	2.3	86	○ ◇
5.1.5	Females employed w/advanced degrees, %	11.7	66	
5.2	**Innovation linkages**	21.2	80	
5.2.1	University-industry R&D collaboration†	45.3	59	
5.2.2	State of cluster development and depth†	52.5	43	
5.2.3	GERD financed by abroad, % GDP	0.0	78	
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	90	
5.2.5	Patent families/bn PPP$ GDP	0.1	62	
5.3	**Knowledge absorption**	46.9	21	● ◆
5.3.1	Intellectual property payments, % total trade	3.1	6	● ◆
5.3.2	High-tech imports, % total trade	10.8	29	●
5.3.3	ICT services imports, % total trade	1.5	60	
5.3.4	FDI net inflows, % GDP	4.2	23	●
5.3.5	Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs		**23.1**	**61**	
6.1	**Knowledge creation**	5.3	106	○
6.1.1	Patents by origin/bn PPP$ GDP	0.1	109	○
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	78	
6.1.3	Utility models by origin/bn PPP$ GDP	0.1	61	
6.1.4	Scientific and technical articles/bn PPP$ GDP	9.7	91	
6.1.5	Citable documents H-index	9.9	73	
6.2	**Knowledge impact**	25.0	73	
6.2.1	Labor productivity growth, %	1.4	51	
6.2.2	New businesses/th pop. 15–64	3.6	38	
6.2.3	Software spending, % GDP	0.3	38	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	3.3	72	
6.2.5	High-tech manufacturing, %	13.8	78	
6.3	**Knowledge diffusion**	39.1	29	● ◆
6.3.1	Intellectual property receipts, % total trade	0.0	78	
6.3.2	Production and export complexity	50.6	44	
6.3.3	High-tech exports, % total trade	5.8	33	●
6.3.4	ICT services exports, % total trade	7.7	8	● ◆
Creative outputs		**15.2**	**81**	
7.1	**Intangible assets**	20.4	79	
7.1.1	Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2	Trademarks by origin/bn PPP$ GDP	82.0	20	●
7.1.3	Global brand value, top 5,000, % GDP	0.0	77	○ ◇
7.1.4	Industrial designs by origin/bn PPP$ GDP	0.1	113	○
7.2	**Creative goods and services**	13.7	70	
7.2.1	Cultural and creative services exports, % total trade	0.7	40	
7.2.2	National feature films/mn pop. 15–69	1.4	53	
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	1.2	33	
7.2.5	Creative goods exports, % total trade	0.2	81	
7.3	**Online creativity**	6.1	58	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	11.5	36	●
7.3.2	Country-code TLDs/th pop. 15–69	1.4	77	
7.3.3	GitHub commit pushes received/mn pop. 15–69	9.3	46	
7.3.4	Mobile app creation/bn PPP$ GDP	2.1	71	

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 Costa Rica.

Missing data for Costa Rica

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
4.1.3	Loans from microfinance institutions, % GDP	n/a	2020	International Monetary Fund, Financial Access Survey (FAS)
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO

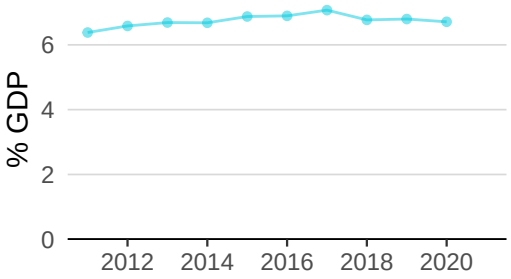
Outdated data for Costa Rica

Code	Indicator name	Economy year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	2018	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2018	2020	UNESCO Institute for Statistics
5.1.3	GERD performed by business, % GDP	2018	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	2018	2019	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, % GDP	2018	2019	UNESCO Institute for Statistics

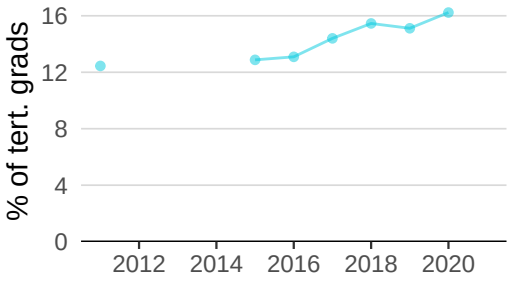
COSTA RICA'S INNOVATION SYSTEM

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

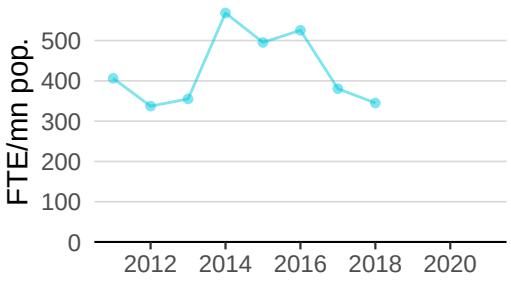
Innovation inputs



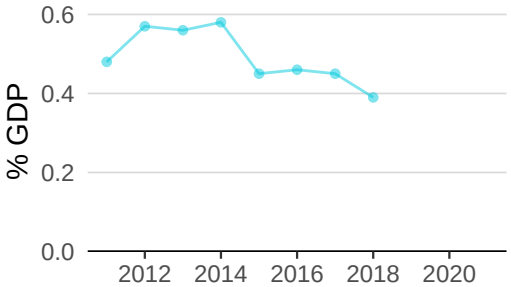
2.1.1 Expenditure on education was equal to 6.7% GDP in 2020–down by 1 percentage point from the year prior–and equivalent to an indicator rank of 10.



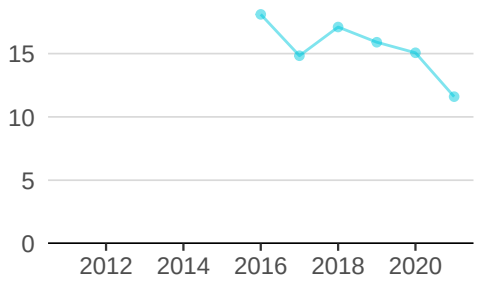
2.2.2 Graduates in science and engineering was equal to 16.2% of tert. grads in 2020–up by 7 percentage points from the year prior–and equivalent to an indicator rank of 90.



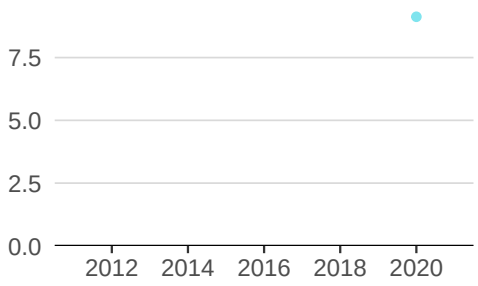
2.3.1 Researchers was equal to 345.1 FTE/mn pop. in 2018–down by 9 percentage points from the year prior–and equivalent to an indicator rank of 79.



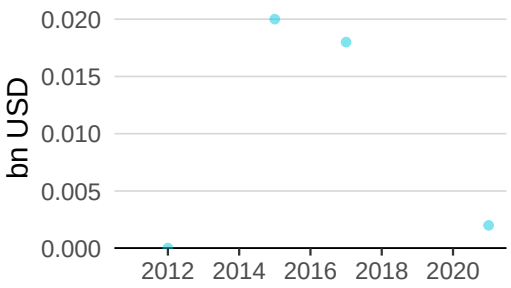
2.3.2 Gross expenditure on R&D was equal to 0.4% GDP in 2018–down by 13 percentage points from the year prior–and equivalent to an indicator rank of 69.



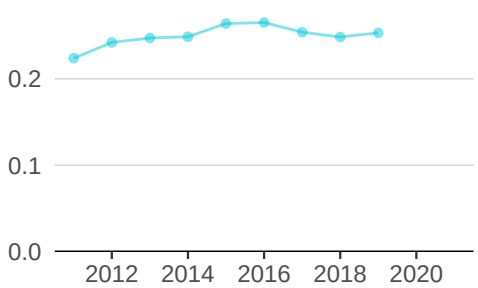
2.3.4 QS university ranking was equal to 11.6 in 2021–down by 23 percentage points from the year prior–and equivalent to an indicator rank of 59.



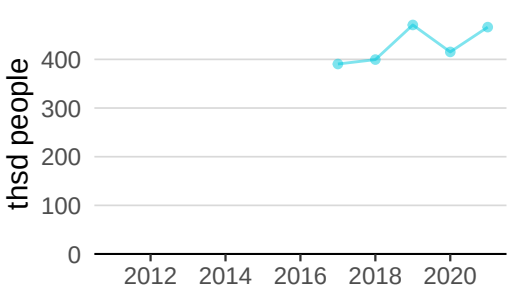
3.1.1 ICT access was equal to 9.1 in 2020 and equivalent to an indicator rank of 36.



4.2.4 Venture capital received was equal to 0.0 bn USD in 2021 and equivalent to an indicator rank of 92.

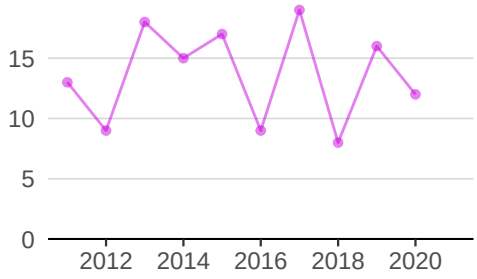


4.3.2 Domestic industry diversification was equal to 0.3 in 2019–up by 2 percentage points from the year prior–and equivalent to an indicator rank of 84.

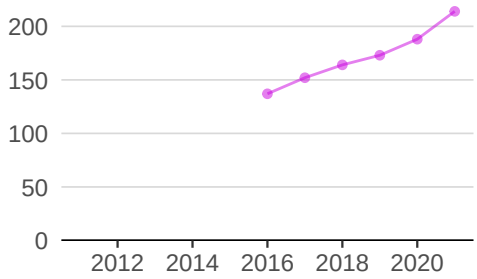


5.1.1 Knowledge-intensive employment was equal to 466.2 thsd people in 2021–up by 12 percentage points from the year prior–and equivalent to an indicator rank of 68.

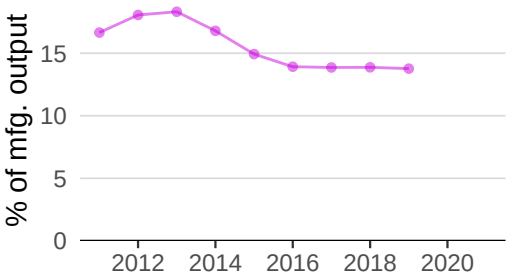
Innovation outputs



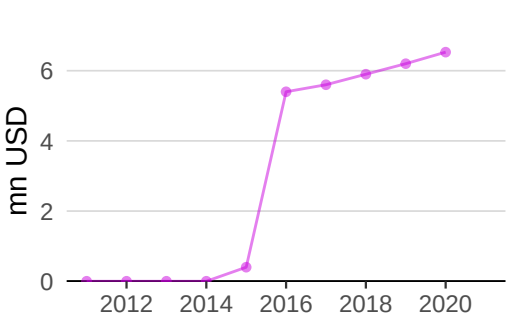
6.1.1 Patents by origin was equal to 12.0 in 2020–down by 25 percentage points from the year prior–and equivalent to an indicator rank of 109.



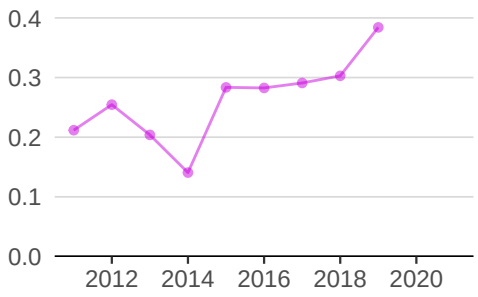
6.1.5 Citable documents H-index was equal to 214.0 in 2021–up by 14 percentage points from the year prior–and equivalent to an indicator rank of 73.



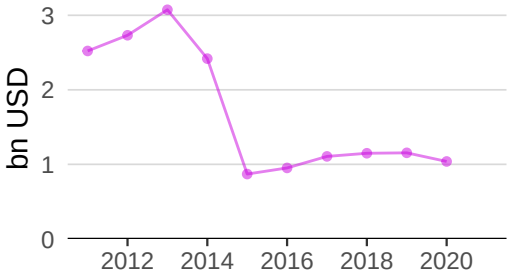
6.2.5 High-tech manufacturing was equal to 13.8% of mfg. output in 2019–down by 1 percentage point from the year prior–and equivalent to an indicator rank of 78.



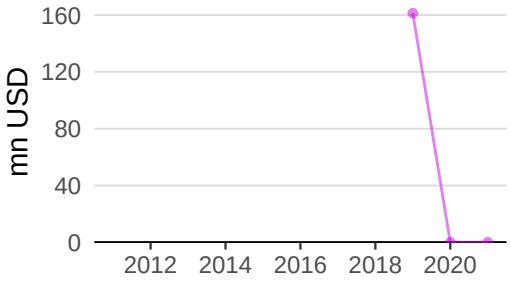
6.3.1 Intellectual property receipts was equal to 6.5 mn USD in 2020–up by 5 percentage points from the year prior–and equivalent to an indicator rank of 78.



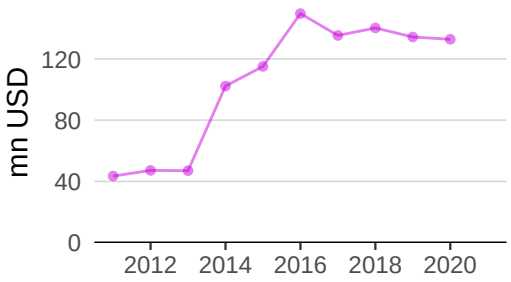
6.3.2 Production and export complexity was equal to 0.4 in 2019–up by 27 percentage points from the year prior–and equivalent to an indicator rank of 44.



6.3.3 High-tech exports was equal to 1.0 bn USD in 2020–down by 10 percentage points from the year prior–and equivalent to an indicator rank of 33.



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.



7.2.1 Cultural and creative services exports was equal to 132.8 mn USD in 2020–down by 1 percentage point from the year prior–and equivalent to an indicator rank of 40.

COSTA RICA'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
UNIVERSIDAD DE COSTA RICA	22.6	531-540
TECNOLÓGICO DE COSTA RICA	12.2	801-1000

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2022).
Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100]. Ranks can represent a single value "x", a tie "x=" or a range "x-y".

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

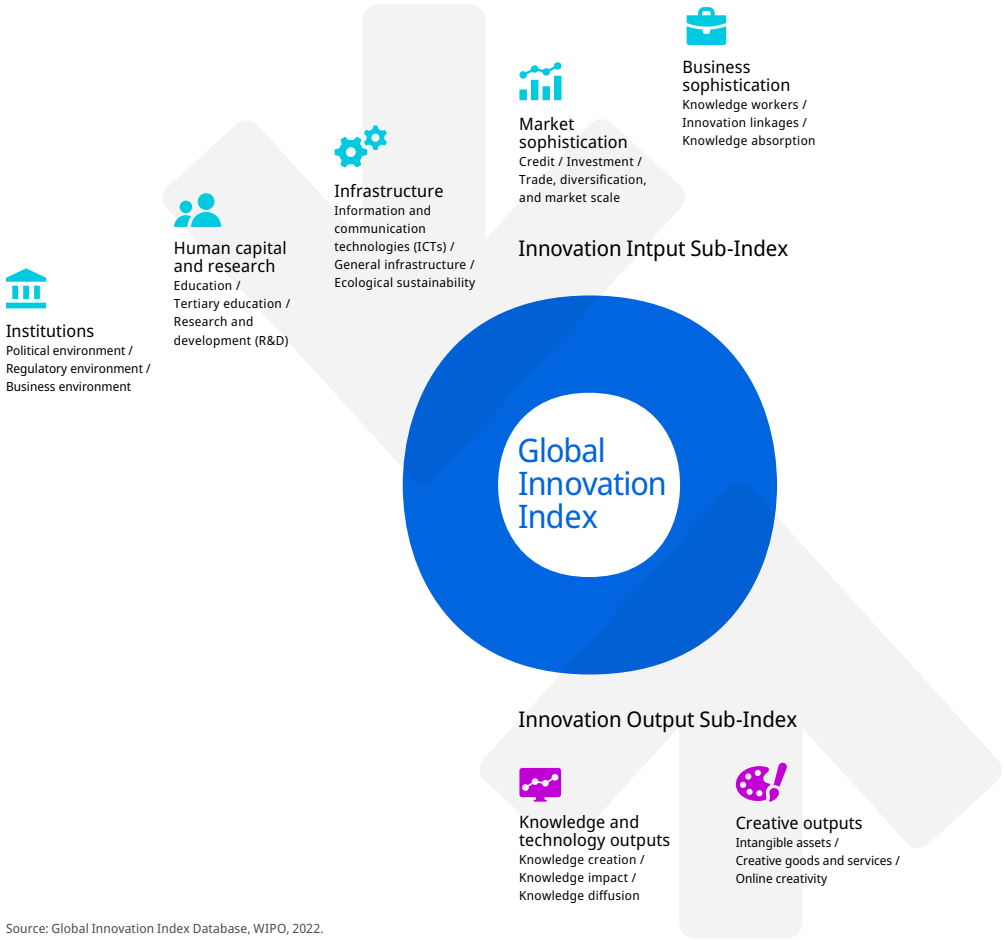
No observations

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.