Global Innovation Index 2025

Paraguay ranking in the Global Innovation Index 2025

Paraguay ranks 103rd among the 139 economies featured in the GII 2025.

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.

Paraguay ranks 33rd among the 36 Upper middle-income group economies.

Paraguay ranks 14th among the 21 economies in Latin America and the Caribbean.

Paraguay GII Ranking (2020-2025)

The table shows the rankings of Paraguay over the past six 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 Paraguay in the GII 2025 is between ranks 95 and 107.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	97th	98th	92nd
2021	88th	90th	87th
2022	91st	94th	84th
2023	98th	101st	92nd
2024	93rd	98th	90th
2025	103rd	97th	103rd

Paraguay performs worse in innovation outputs than innovation inputs in 2025.

This year **Paraguay ranks 97th in innovation inputs.** This position is higher than last year.

Paraguay ranks 103rd in innovation outputs. This position is lower than last year.

Paraguay has no clusters in the world's top innovation clusters of the Global Innovation Index.

Global Innovation Index 2025

> Global Innovation Tracker

The Global Innovation Tracker 2025 shows what is the current state of innovation in Paraguay, how rapidly is technology being embraced and what are the resulting societal impacts.

For Paraguay, 4 indicators have improved in the short-term and 3 indicators have worsened.

Science and innovation investment

	Scientific publications	R&D investments	Venture capital deal numbers	International patent filings
Short term	▼ -1.7 % 2023 - 2024	▼ -16.9 % 2021 - 2022	0 % 2023 - 2024	n/a
Long term (annual growth)	▲ 13.8 % 2014 - 2024	▲ 9.6 % 2012 - 2022	0 % 2020 - 2024	n/a

Technology adoption

	Safe sanitation	Connectivity		Robots	Electric vehicles
		Fixed broadband	5G		
Short term	▲ 0.2% 2023 - 2024	▲ 16.9% 2022 - 2023	n/a	n/a	n/a
Long term (annual growth)	▲ 0.7% 2014 - 2024	▲ 18.9% 2013 - 2023	n/a	n/a	n/a
Penetration	58.5 per 100 inhabitants in 2024	12.9 per 100 inhabitants in 2023	n/a	n/a	n/a

Socioeconomic impact

	Labor productivity	Life expectancy	Temperature change
Short term	▲ 2.8 % 2023 - 2024	▲ 2.1 % 2022 - 2023	+ 2.4 °C 2024
Long term (annual growth)	▲ 1.2 % 2014 - 2024	▲ 0.1 % 2013 - 2023	+ 1.3 °C 2014
Level	38,940 USD in 2024	73.8 years in 2023	n/a

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the countries. from 1951–1980. Figures are rounded.

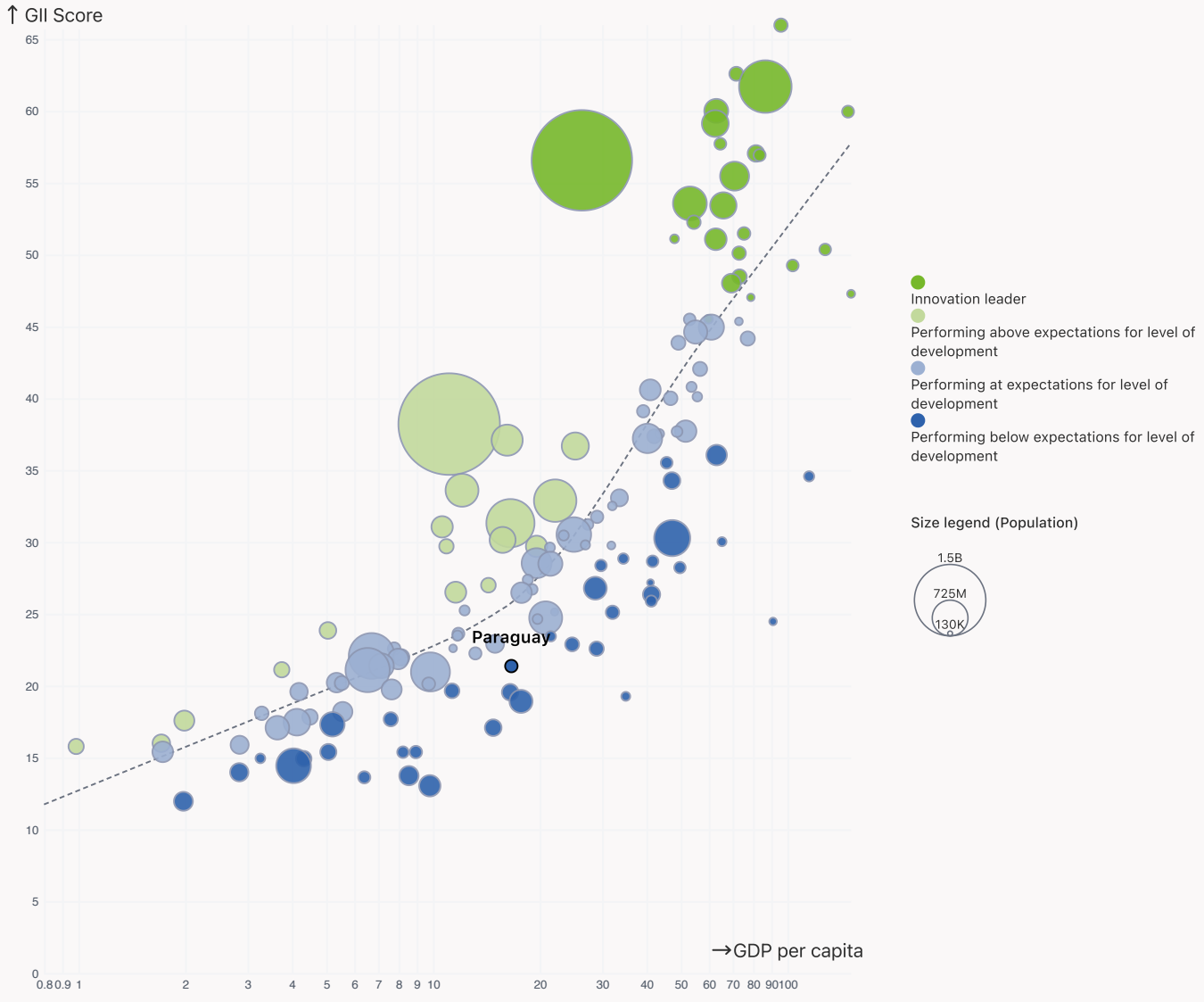
Global Innovation Index 2025

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 Paraguay performs below expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2025

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.

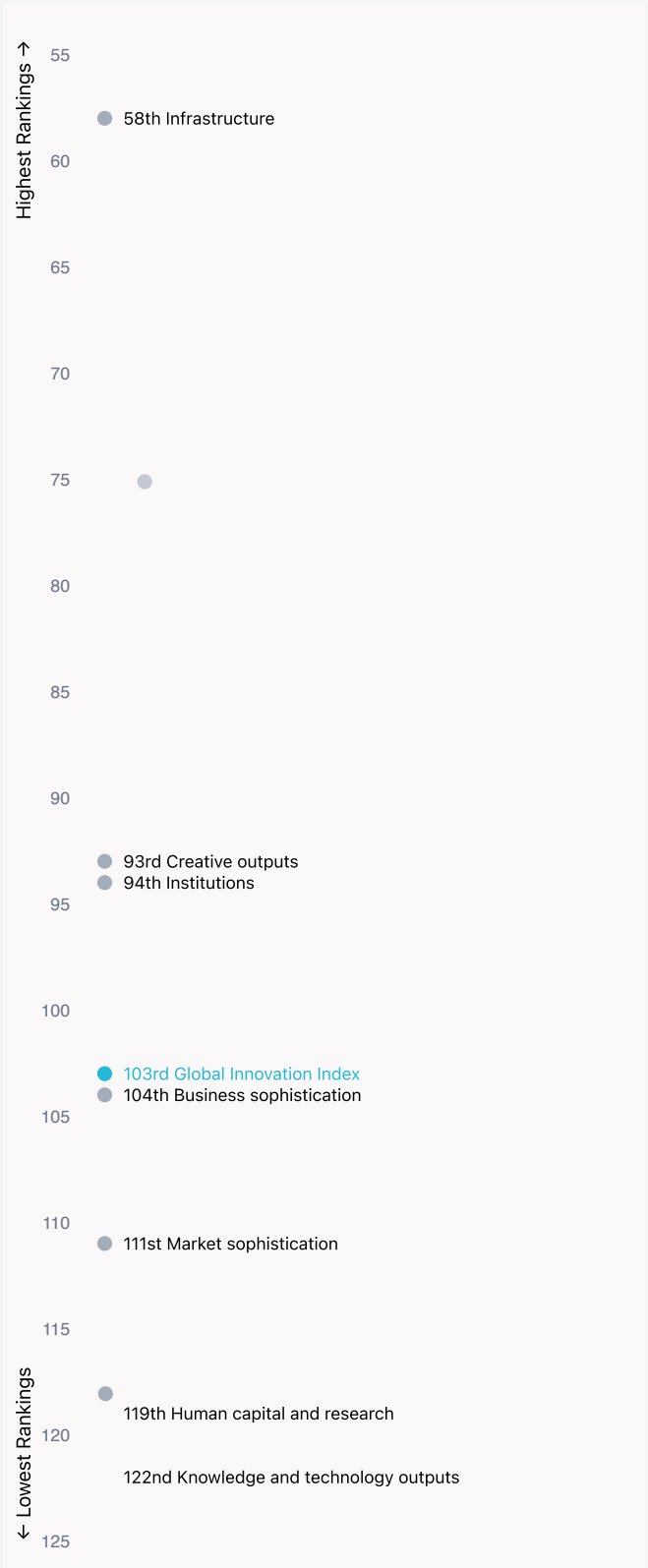
Paraguay produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

Global Innovation Index 2025

Overview of Paraguay's rankings in the seven areas of the GII in 2025

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



Highest Rankings

Paraguay ranks highest in Infrastructure (58th), Creative outputs (93rd) and Institutions (94th).

Lowest Rankings

Paraguay ranks lowest in Knowledge and technology outputs (122nd), Human capital and research (119th) and Market sophistication (111st).

The full WIPO Intellectual Property Statistics profile for Paraguay can be found on https://www.wipo.int/edocs/statistics-country-profile/en/py.pdf

Global Innovation Index 2025

Benchmark of Paraguay against other economy groupings for each of the seven areas of the GII Index

The charts shows the relative position of Paraguay (blue bar) against other economy groupings (grey bars)

Upper middle-income economies

Paraguay performs above the Upper middle-income group average in Infrastructure.

Latin America and the Caribbean

Paraguay performs above the regional average in Institutions, Infrastructure.

Institutions

- Top 10 | Score: 78.63
- Upper middle-income | Score: 44.7
- Paraguay | Score: 39.56
- LCN | Score: 38.69

Human capital and research

- Top 10 | Score: 59.30
- Upper middle-income | Score: 29.7
- LCN | Score: 26.83
- Paraguay | Score: 17.32

Infrastructure

- Top 10 | Score: 61.36
- Paraguay | Score: 45.88
- Upper middle-income | Score: 41.1
- LCN | Score: 36.36

Market sophistication

- Top 10 | Score: 61.82
- Upper middle-income | Score: 34.8
- LCN | Score: 29.96
- Paraguay | Score: 25.60

Business sophistication

- Top 10 | Score: 59.10
- Upper middle-income | Score: 27.7
- LCN | Score: 25.00
- Paraguay | Score: 23.10

Knowledge and technology outputs

- Top 10 | Score: 54.93
- Upper middle-income | Score: 20.0
- LCN | Score: 15.29
- Paraguay | Score: 9.31

Creative outputs

- Top 10 | Score: 55.98
- Upper middle-income | Score: 22.6
- LCN | Score: 17.22
- Paraguay | Score: 15.54

Global Innovation Index 2025

Innovation strengths and weaknesses in Paraguay

The table below gives an overview of the indicator strengths and weaknesses of Paraguay in the GII 2025.

Paraguay's best-ranked innovation strengths are **Low-carbon energy use, %** (rank 2), **Trademarks by origin/bn PPP$ GDP** (rank 4) and **High-tech imports, % total trade** (rank 5).

Strengths

Rank	Code	Indicator name
2	3.3.2	Low-carbon energy use, %
4	7.1.2	Trademarks by origin/bn PPP$ GDP
5	5.3.2	High-tech imports, % total trade
31	3.2.1	Electricity output, GWh/mn pop.
45	5.1.3	Youth demographic dividend, %
50	3.3.1	GDP/unit of energy use
51	6.2.1	Labor productivity growth, %
60	4.1.2	Domestic credit to private sector, % GDP
64	6.3.5	ISO 9001 quality/bn PPP$ GDP
70	1.3.1	Policy stability for doing business[†]

Weaknesses

Rank	Code	Indicator name
139	5.3.3	ICT services imports, % total trade
138	6.3.4	ICT services exports, % total trade
127	6.3.1	Intellectual property receipts, % total trade
123	4.2.2	Venture capital (VC) received, deal count/bn PPP$ GDP
120	7.2.1	Cultural and creative services exports, % total trade
111	6.2.4	High-tech manufacturing
81	7.1.3	Global brand value, top 5,000, % GDP
80	2.3.4	QS university ranking, top 3*
53	6.2.2	Unicorn valuation, % GDP
44	2.3.3	Global corporate R&D investors, top 3, mn USD

Global Innovation Index 2025

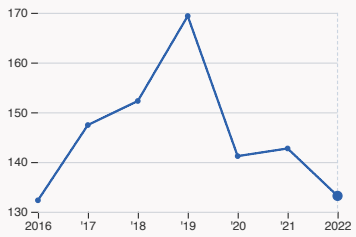
Paraguay's innovation system

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

Innovation inputs in Paraguay

2.1.1 Expenditure on education

was equal to 3.41 % GDP in 2023, up by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 96.

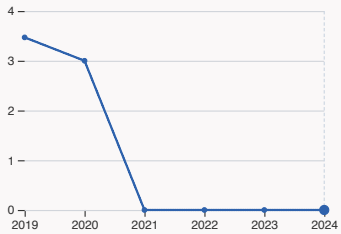


2.3.1 Researchers

was equal to 133.2 FTE per million population in 2022, down by 6.68% from the year prior – and equivalent to an indicator rank of 88.

2.3.2 Gross expenditure on R&D

was equal to 0.12 % GDP in 2022, down by 0.03 percentage points from the year prior – and equivalent to an indicator rank of 99.



2.3.4 QS university ranking

The country does not have any universities in the QS world universities ranking in 2024.

4.3.2 Domestic industry diversification

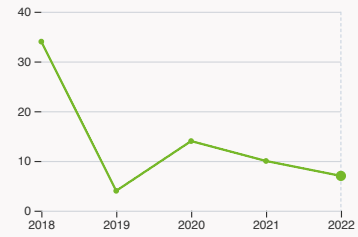
was equal to an index score of 0.25 in 2023, up by 3.74% from the year prior – and equivalent to an indicator rank of 95.

5.1.1 Knowledge-intensive employment

was equal to 20.16 % in 2024, down by 0.7 percentage points from the year prior – and equivalent to an indicator rank of 78.

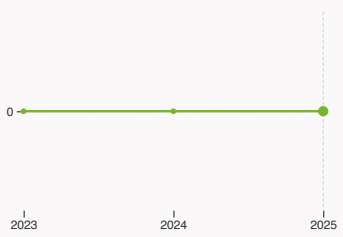
Global Innovation Index 2025

Innovation outputs in Paraguay



6.1.1 Patents by origin

was equal to 7 patents in 2022, down by 30% from the year prior – and equivalent to an indicator rank of 120.

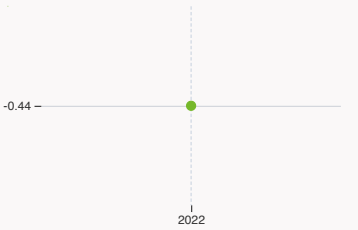


6.2.2 Unicorn valuation

The country does not have unicorns in 2025.

6.2.4 High-tech manufacturing

was equal to 374.82 high-tech manufacturing output in million USD in 2023, up by 6.21% from the year prior – and equivalent to an indicator rank of 111.

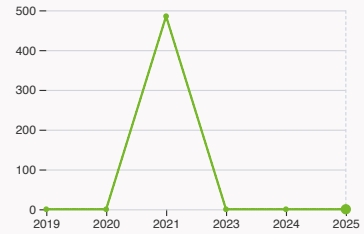


6.3.2 Production and export complexity

was equal to a score of -0.44 in 2022 – and equivalent to an indicator rank of 89.

6.3.3 High-tech exports

was equal to 162.87 million USD in 2023, down by 9.35% from the year prior – and equivalent to an indicator rank of 81.



7.1.3 Global brand value, top 5,000

The country does not have any brands that make the top 5,000 ranking in 2025.

7.3.3 Mobile app creation

was equal to 4.37 million global downloads of mobile apps in 2024, up by 3.31% from the year prior – and equivalent to an indicator rank of 91.

Global Innovation Index 2025

Paraguay's innovation top performers

Data not available for 2.3.3 Global corporate R&D investors, 6.2.2 Top Unicorn Companies, 7.1.1 Top 15 intangible-asset intensive companies and 7.1.3 Global brand value, top 5,000.

Disclaimer: This section contains only the top performers per country. For the complete list, please visit the GII Innovation Ecosystems and Data Explorer website.

2.3.4 QS university ranking of Paraguay’s top universities

Rank	University	Score
1001-1200	UNIVERSIDAD NACIONAL DE ASUNCION	8.90

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2024).
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'.

5.2.3 University industry and international engagement, top 5 universities

Rank	University	Score
1	UNIVERSIDAD NACIONAL DE ASUNCION	34.35

Source: Times Higher Education (THE), World University Rankings 2025.
Note: Rank corresponds to within economy ranks. The score is calculated as the average of the International Outlook score (encompassing international staff, students, and co-authorship) and the industry score (reflecting industry income and patent citations). The 2025 ranking corresponds to data from the academic year that ended in 2022.

Paraguay

GII 2025 rank **103**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
103	97	Upper middle	Latin America and the Caribbean	6.9	127.4	16,642.2

	Score / Value	Rank	
Institutions	**39.6**	**94**	
1.1 Institutional environment	**45.2**	**89**	
1.1.1 Operational stability for businesses*	58.7	77	
1.1.2 Government effectiveness*	31.7	98	
1.2 Regulatory environment	**41.5**	**89**	
1.2.1 Regulatory quality*	44.9	77	
1.2.2 Rule of law*	38.1	105	
1.3 Business environment	**32**	**96**	
1.3.1 Policy stability for doing business†	45.8	70	●
1.3.2 Entrepreneurship policies and culture†	18.2	80	
Human capital and research	**17.3**	**119**	◇
2.1 Education	**33.9**	**121**	◇
2.1.1 Expenditure on education, % GDP	3.4	96	
2.1.2 Government funding/pupil, secondary, % GDP/cap	13.4	75	
2.1.3 School life expectancy, years	n/a	n/a	
2.1.4 PISA scales in reading, maths and science	359.7	80	
2.1.5 Pupil–teacher ratio, secondary	15.4	84	
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)	**0.8**	**106**	
2.3.1 Researchers, FTE/mn pop.	133.2	88	◇
2.3.2 Gross expenditure on R&D, % GDP	0.1	99	
2.3.3 Global corporate R&D investors, top 3, mn USD	0	44	○ ◇
2.3.4 QS university ranking, top 3*	0	80	○ ◇
Infrastructure	**45.9**	**58**	
3.1 Information and communication technologies (ICTs)	**65.3**	**92**	
3.1.1 ICT access*	68.4	98	◇
3.1.2 ICT use*	67.1	95	
3.1.3 Government's online service*	60.4	79	
3.2 General infrastructure	**29.6**	**83**	
3.2.1 Electricity output, GWh/mn pop.	6,505.9	31	●
3.2.2 Logistics performance*	27.3	76	
3.2.3 Gross capital formation, % GDP	23	78	
3.3 Ecological sustainability	**42.7**	**13**	
3.3.1 GDP/unit of energy use	12.6	50	●
3.3.2 Low-carbon energy use, %	81.4	2	●
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.4	96	
Market sophistication	**25.6**	**111**	
4.1 Credit	**15.2**	**103**	
4.1.1 Finance for startups and scaleups†	12	91	◇
4.1.2 Domestic credit to private sector, % GDP	52.6	60	●
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**0.7**	**119**	
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) received, deal count/bn PPP$ GDP	0.008	123	○ ◇
4.2.3 Late-stage VC deal count, % global VC	0.002	102	
4.2.4 VC investors, deal count/bn PPP$ GDP	0.06	82	
4.2.5 VC investor co-participation/bn PPP$ GDP	0.01	101	
4.3 Trade, diversification and market scale	**60.9**	**94**	
4.3.1 Applied tariff rate, weighted avg., %	3.3	80	
4.3.2 Domestic industry diversification	62.3	95	◇
4.3.3 Domestic market scale, bn PPP$	127.4	88	

	Score / Value	Rank	
Business sophistication	**23.1**	**104**	
5.1 Knowledge workers	**28.6**	**103**	
5.1.1 Knowledge-intensive employment, %	20.2	78	
5.1.2 Females employed w/advanced degrees, %	9.5	76	
5.1.3 Youth demographic dividend, %	45	45	●
5.1.4 GERD performed by business, % GDP	n/a	n/a	
5.1.5 GERD financed by business, %	0.8	91	◇
5.2 Innovation linkages	**11.3**	**125**	◇
5.2.1 Public research–industry co-publications, %	1.2	79	
5.2.2 University–industry R&D collaboration†	8.9	130	◇
5.2.3 University industry & international engagement, top 5*	10.9	91	
5.2.4 State of cluster development†	25	118	
5.2.5 Patent families/bn PPP$ GDP	0.02	79	
5.3 Knowledge absorption	**29.4**	**57**	
5.3.1 Intellectual property payments, % total trade	0.1	115	◇
5.3.2 High-tech imports, % total trade	22	5	●
5.3.3 ICT services imports, % total trade	0.01	139	○ ◇
5.3.4 FDI net inflows, % GDP	1.3	104	
5.3.5 Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs	**9.3**	**122**	◇
6.1 Knowledge creation	**2.3**	**126**	
6.1.1 Patents by origin/bn PPP$ GDP	0.06	120	
6.1.2 PCT patents by inventor origin/bn PPP$ GDP	n/a	n/a	
6.1.3 Utility models by origin/bn PPP$ GDP	0.06	57	
6.1.4 Scientific and technical articles/bn PPP$ GDP	1.8	130	◇
6.1.5 Citable documents H-index	3.5	120	
6.2 Knowledge impact	**14.5**	**123**	◇
6.2.1 Labor productivity growth, %	1.3	51	●
6.2.2 Unicorn valuation, % GDP	0	53	○ ◇
6.2.3 Software spending, % GDP	0.05	111	
6.2.4 High-tech manufacturing	1.7	111	○ ◇
6.3 Knowledge diffusion	**11.1**	**98**	
6.3.1 Intellectual property receipts, % total trade	0	127	○ ◇
6.3.2 Production and export complexity	39	89	
6.3.3 High-tech exports, % total trade	0.9	81	
6.3.4 ICT services exports, % total trade	0.08	138	○
6.3.5 ISO 9001 quality/bn PPP$ GDP	3.9	64	●
Creative outputs	**15.5**	**93**	
7.1 Intangible assets	**20.5**	**79**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	119	4	●
7.1.3 Global brand value, top 5,000, % GDP	0	81	○ ◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.09	116	
7.2 Creative goods and services	**0.5**	**[132]**	
7.2.1 Cultural and creative services exports, % total trade	0.002	120	○
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 Creative goods exports, % total trade	0.08	101	
7.3 Online creativity	**20.6**	**97**	
7.3.1 Top-level domains (TLDs)/th pop. 15–69	1.9	88	
7.3.2 GitHub commits/mn pop. 15–69	3.1	96	
7.3.3 Mobile app creation/bn PPP$ GDP	56.8	91	

NOTES: ● indicates a strength ○ a weakness ◆ an income group strength ◇ an income group weakness * an index † a survey question 🕓 that the economy's data is outdated. Square brackets [ ] indicate the the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level, n/a represents missing values, a dash - indicates an indicator which is not relevant to this economy and thus not considered for DMC thresholds.

Global Innovation Index 2025

Data Availability

The following tables list indicators that are either missing or outdated for Paraguay.

Paraguay has missing data for twelve indicators and outdated data for nine indicators.

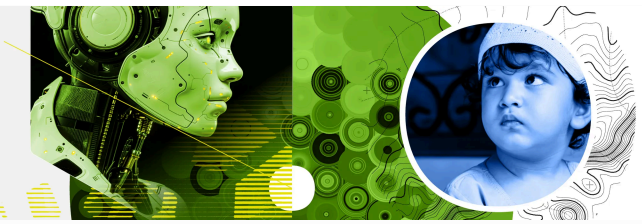
Missing data for Paraguay

Code	Indicator name	Economy year	Model year	Source
2.1.3	School life expectancy, years	n/a	2023	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	n/a	2023	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	n/a	2022	UNESCO Institute for Statistics; Eurostat; OECD
2.2.3	Tertiary inbound mobility, %	n/a	2023	UNESCO Institute for Statistics
4.1.3	Loans from microfinance institutions, % GDP	n/a	2023	International Monetary Fund, Financial Access Survey (FAS)
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
5.1.4	GERD performed by business, % GDP	n/a	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	n/a	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.2	PCT patents by inventor origin/bn PPP$ GDP	n/a	2024	World Intellectual Property Organization; International Monetary Fund
7.1.1	Intangible asset intensity, top 15, %	n/a	2024	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2023	OMDIA; United Nations, World Population Prospects
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2024	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

Outdated data for Paraguay

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture†	2019	2024	Global Entrepreneurship Monitor
2.1.5	Pupil–teacher ratio, secondary	2018	2023	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2022	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2022	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.1	Electricity output, GWh/mn pop.	2022	2023	International Energy Agency

Global Innovation Index 2025



Code	Indicator name	Economy year	Model year	Source
4.1.1	Finance for startups and scaleups[+]	2019	2024	Global Entrepreneurship Monitor
5.1.2	Females employed w/advanced degrees, %	2017	2024	International Labour Organization
6.1.1	Patents by origin/bn PPP$ GDP	2022	2023	World Intellectual Property Organization; International Monetary Fund
6.1.3	Utility models by origin/bn PPP$ GDP	2022	2023	World Intellectual Property Organization; International Monetary Fund

Global Innovation Index 2025

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 140 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.