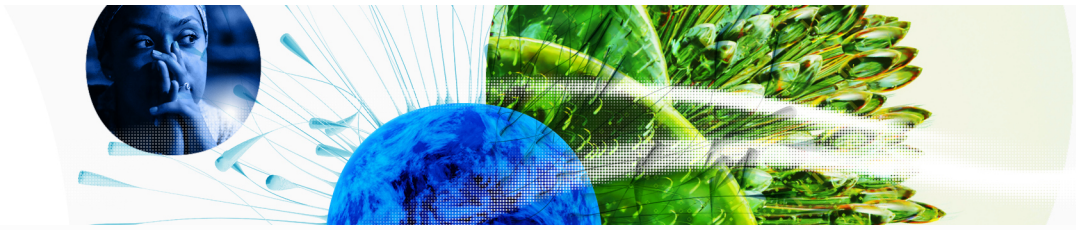
Global Innovation Index 2023



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**.

Peru ranking in the Global Innovation Index 2023

> Peru ranks 76th among the 132 economies featured in the GII 2023.

> Peru ranks 21st among the 33 upper-middle-income group economies.

> Peru ranks 8th among the 19 economies in Latin America and the Caribbean.

> Peru GII Ranking (2020-2023)

The table shows the rankings of Peru 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 Peru in the GII 2023 is between ranks 72 and 84.

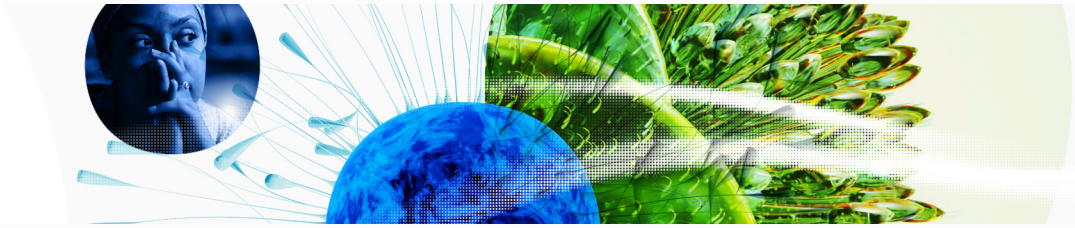
	GII Position	Innovation Inputs	Innovation Outputs
2020	76th	55th	98th
2021	70th	52nd	82nd
2022	65th	52nd	81st
2023	76th	60th	84th

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

This year **Peru ranks 60th in innovation inputs.** This position is lower than last year.

Peru ranks 84th in innovation outputs. This position is lower than last year.

Global Innovation Index 2023

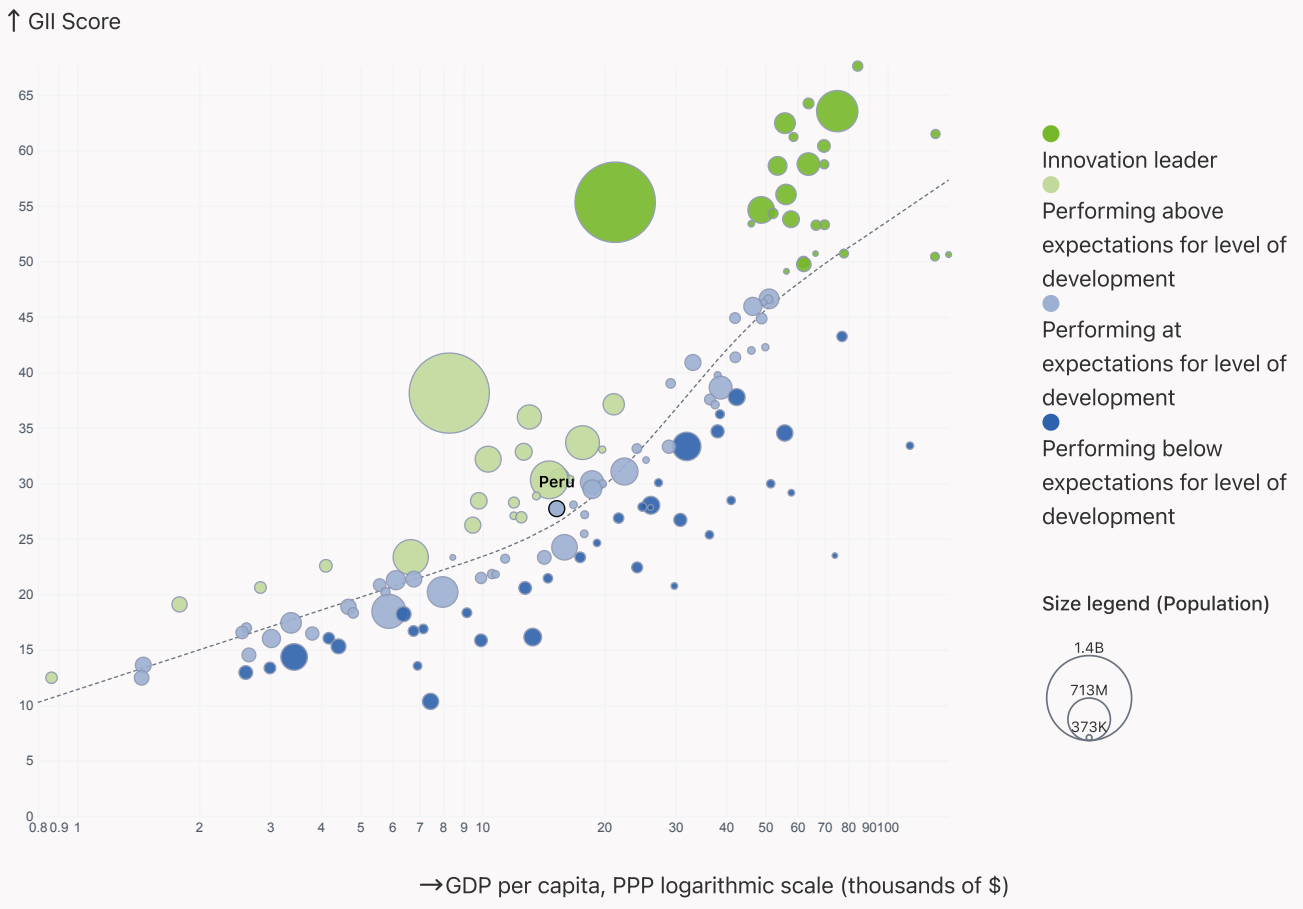


→ Expected vs. observed innovation performance

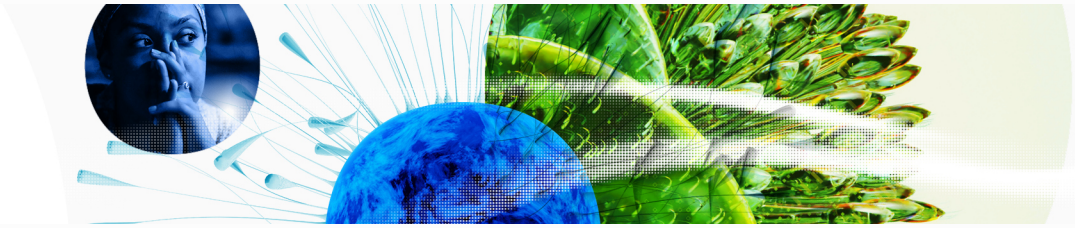
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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

> Relative to GDP, Peru's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2023

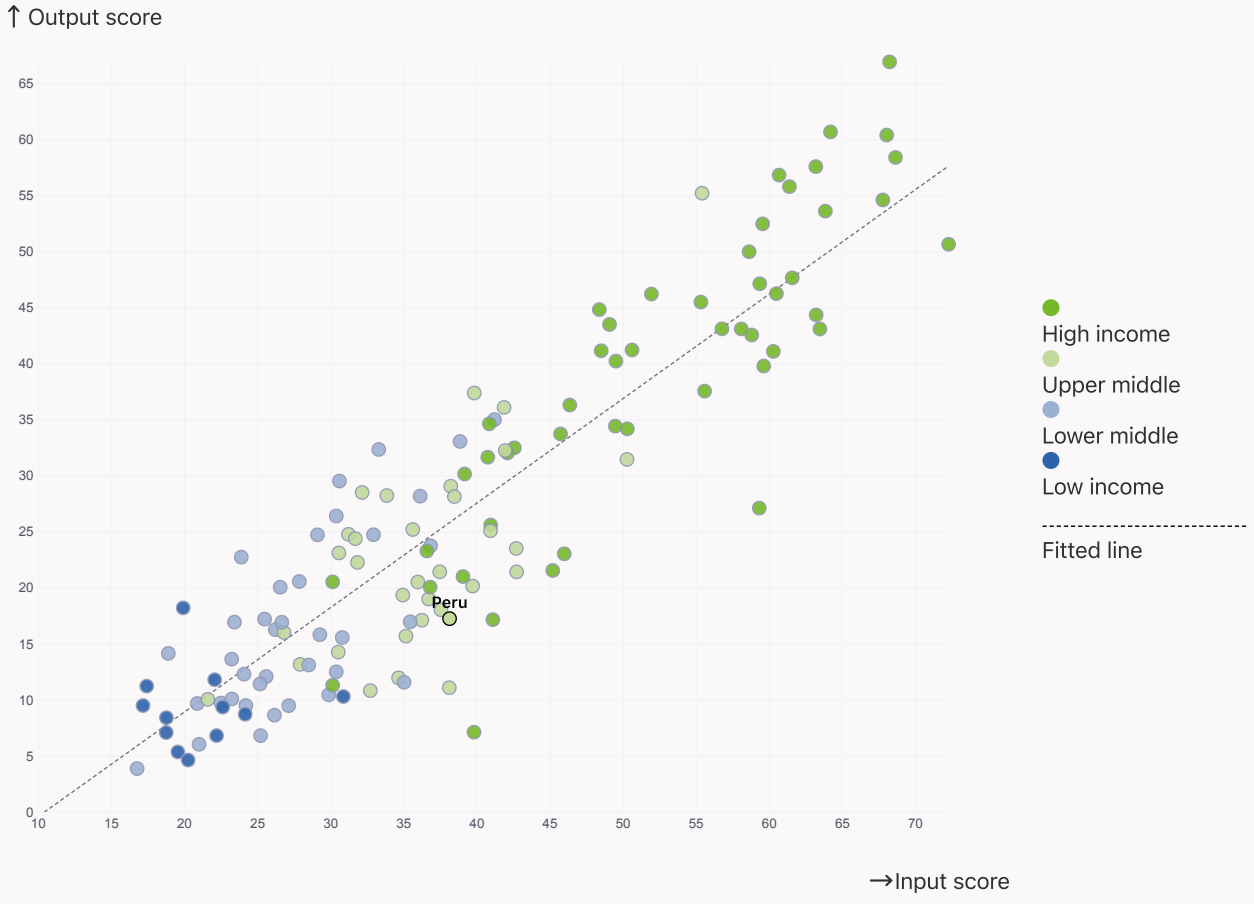


→ Effectively translating innovation investments into innovation outputs

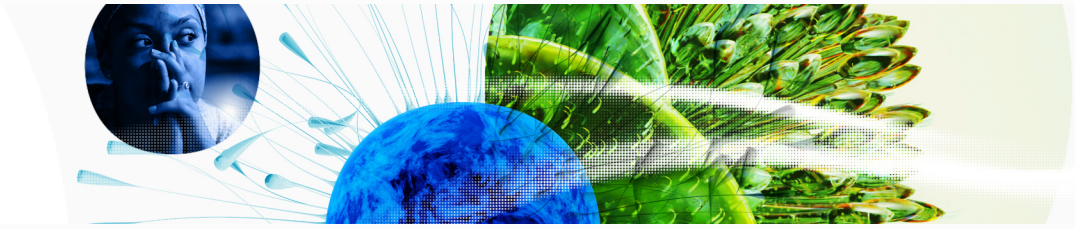
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

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

> Relationship between innovation inputs and outputs

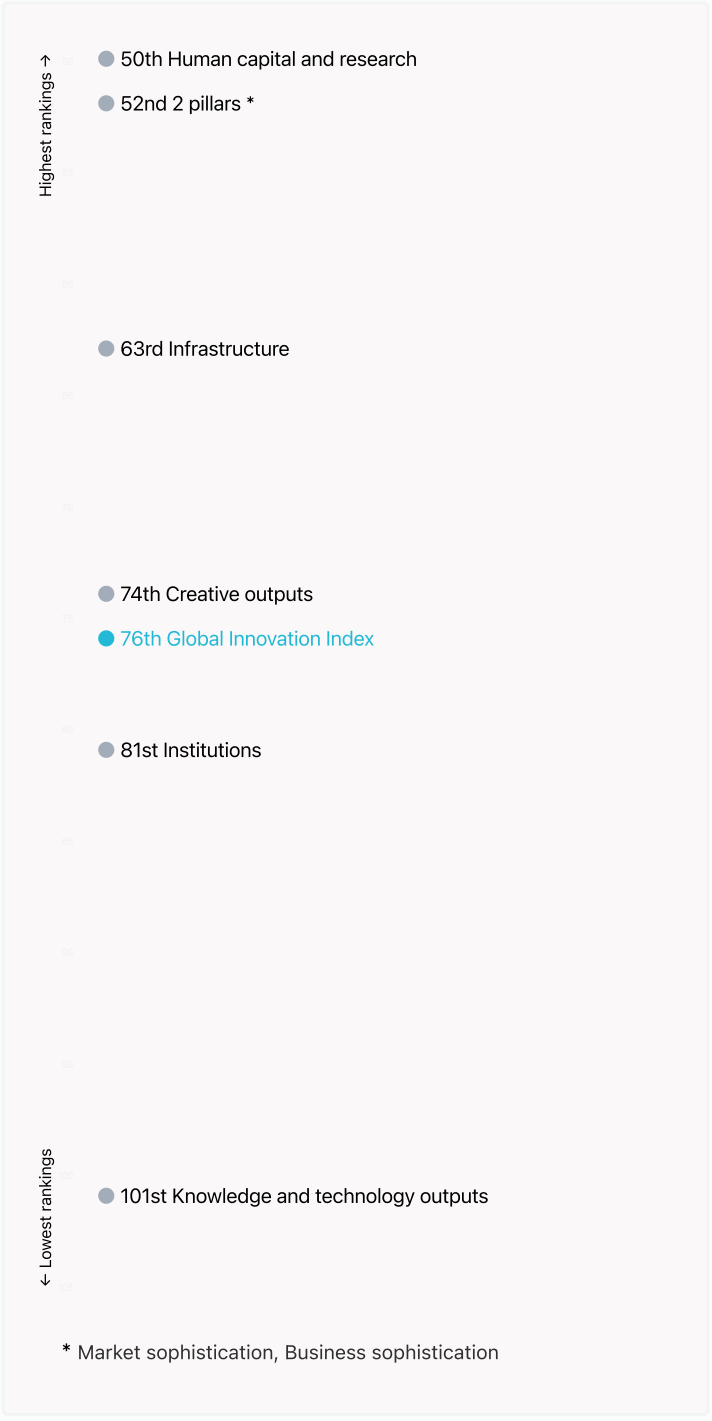


Global Innovation Index 2023



→ Overview of Peru'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 Peru are those that rank above the GII (shown in blue) and the weakest are those that rank below.



> Highest rankings

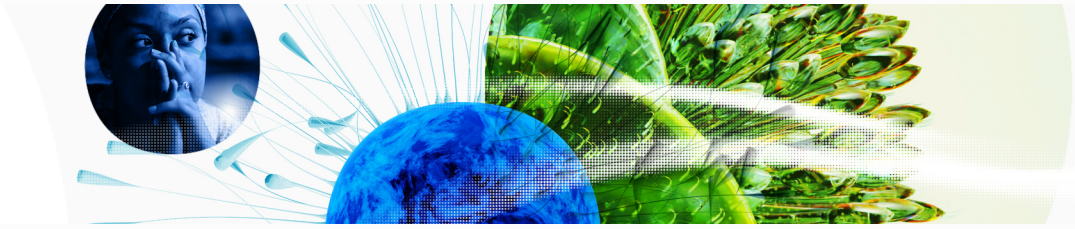
Peru ranks highest in Human capital and research (50th), Market sophistication, Business sophistication (52nd), Infrastructure (63rd) and Creative outputs (74th).

> Lowest rankings

Peru ranks lowest in Knowledge and technology outputs (101st), Institutions (81st) and Creative outputs (74th).

The full WIPO Intellectual Property Statistics profile for Peru can be found on this link.

Global Innovation Index 2023



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

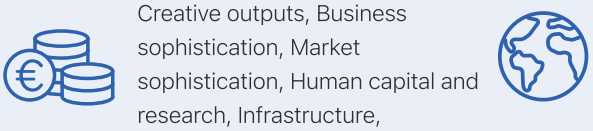
The charts shows the relative position of Peru (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

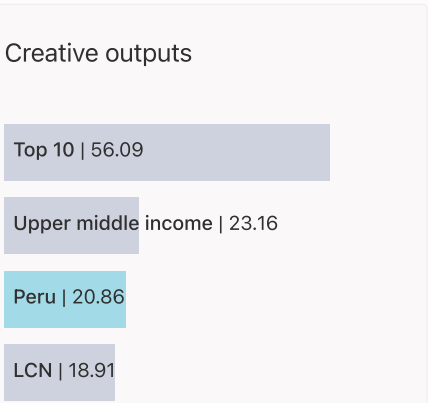
> Upper-Middle-Income economies

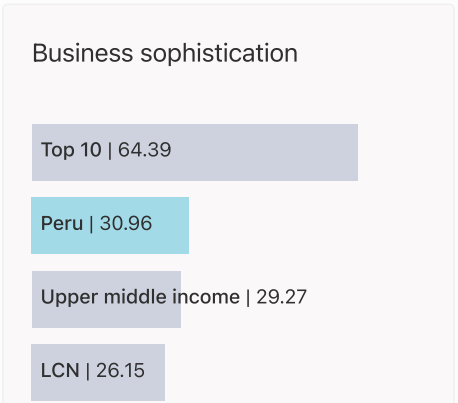
Peru performs below the upper-middle-income group average in Knowledge and technology outputs, Creative outputs, Institutions.

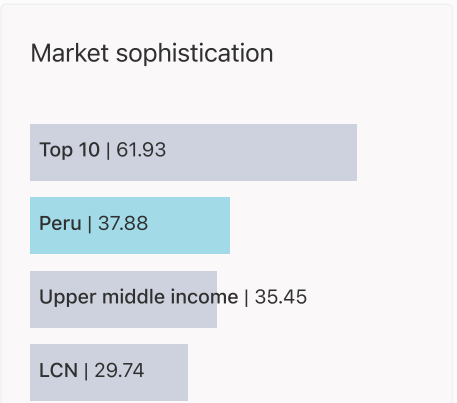
> Latin America And The Caribbean

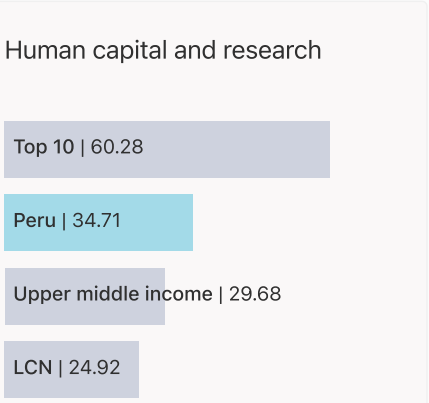
Peru performs above the regional average in Creative outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure, Institutions.

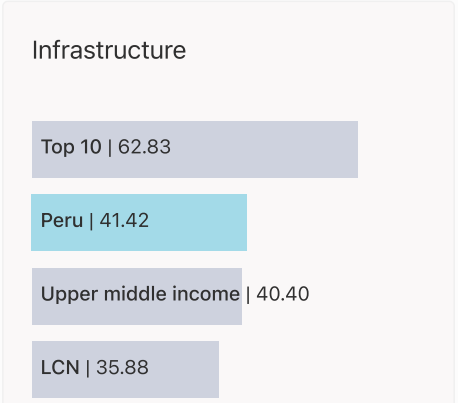


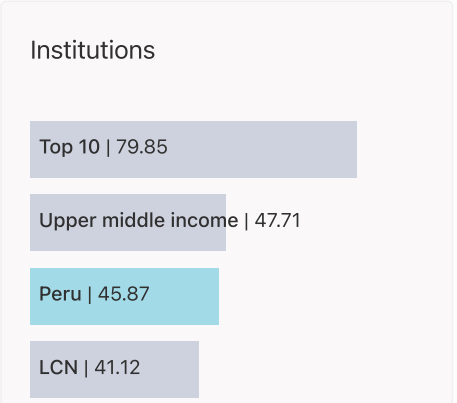




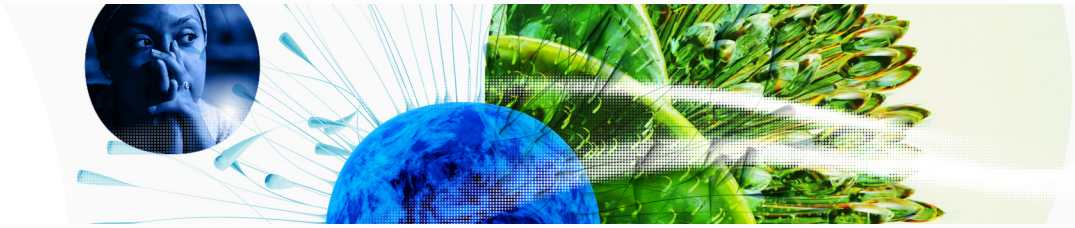








Global Innovation Index 2023



→ Innovation strengths and weaknesses in Peru

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

> Peru's main innovation strengths are **Firms offering formal training, %** (rank 5), **Loans from microfinance institutions, % GDP** (rank 5) and **Applied tariff rate, weighted avg., %** (rank 6).

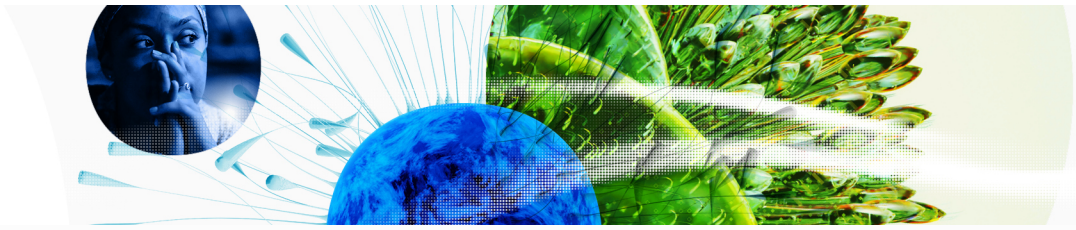
Strengths

Rank	Code	Indicator name
5	5.1.2	Firms offering formal training, %
5	4.1.3	Loans from microfinance institutions, % GDP
6	4.3.1	Applied tariff rate, weighted avg., %
19	3.3.1	GDP/unit of energy use
21	2.2.2	Graduates in science and engineering, %
22	3.1.4	E-participation
34	2.2.1	Tertiary enrolment, % gross
35	7.1.2	Trademarks by origin/bn PPP$ GDP
37	1.2.3	Cost of redundancy dismissal
37	3.1.3	Government's online service

Weaknesses

Rank	Code	Indicator name
125	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP
120	6.3.4	ICT services exports, % total trade
119	5.2.1	University-industry R&D collaboration
106	7.1.4	Industrial designs by origin/bn PPP$ GDP
102	6.3.2	Production and export complexity
93	4.2.3	VC recipients, deals/bn PPP$ GDP
88	4.2.2	Venture capital (VC) investors, deals/bn PPP$ GDP
80	7.2.2	National feature films/mn pop. 15-69
48	6.2.2	Unicorn valuation, % GDP
40	2.3.3	Global corporate R&D investors, top 3, mn US$

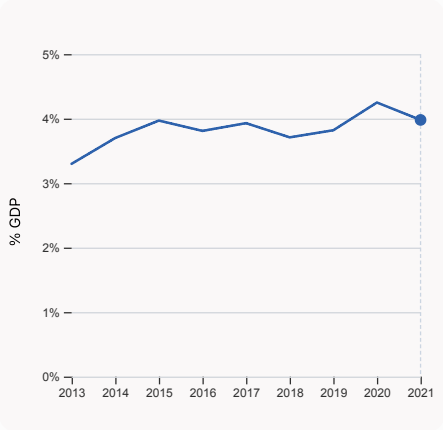
Global Innovation Index 2023



→ Peru's innovation system

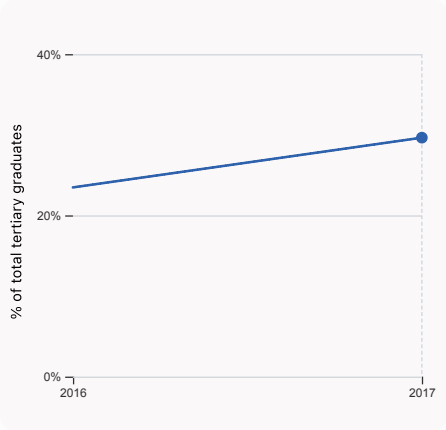
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Peru



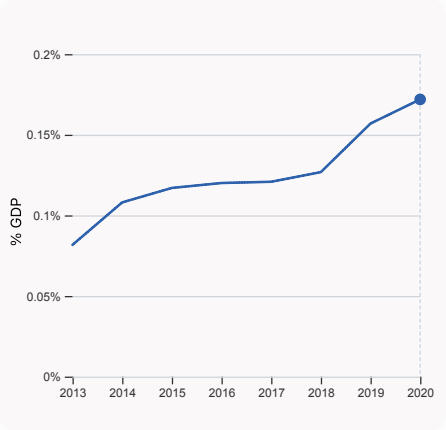
2.1.1 Expenditure on education, % GDP

was equal to 3.98% GDP in 2021, down by 0.27 percentage points from the year prior – and equivalent to an indicator rank of 72.



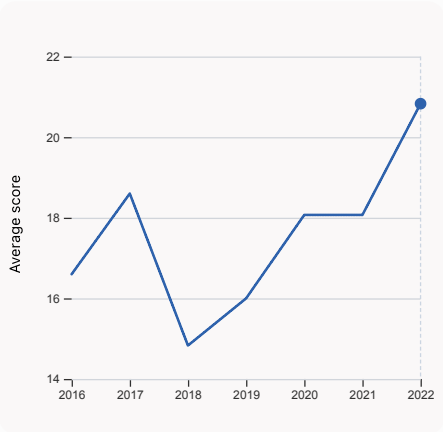
2.2.2 Graduates in science and engineering, %

was equal to 29.64% of total tertiary graduates in 2017, up by 6.17 percentage points from the year prior – and equivalent to an indicator rank of 21.



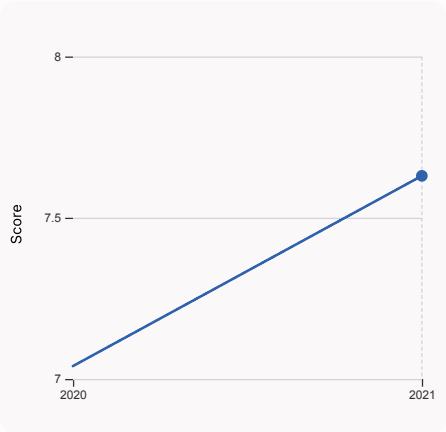
2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.172% GDP in 2020, up by 0.015 percentage points from the year prior – and equivalent to an indicator rank of 92.



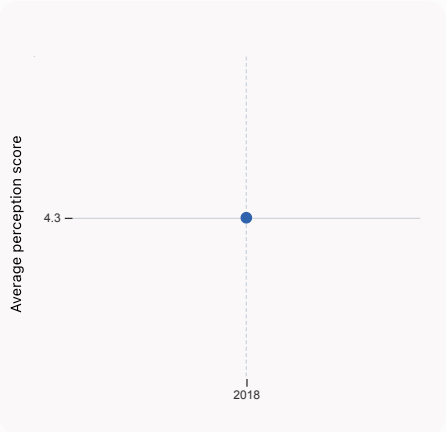
2.3.4 QS university ranking, top 3

was equal to an average score of 20.83 for the top 3 universities in 2022, up by 15.27% from the year prior – and equivalent to an indicator rank of 50.



3.1.1 ICT access

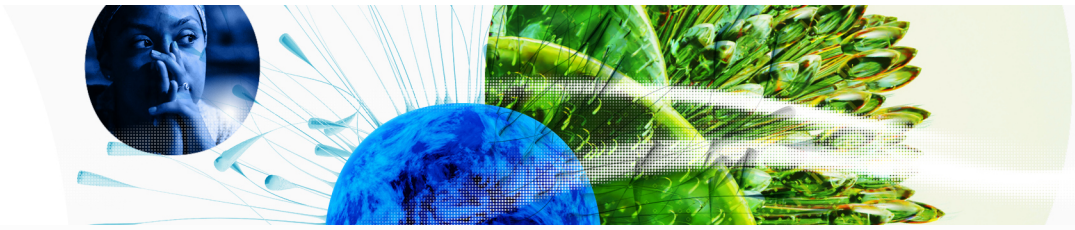
was equal to a score of 7.63 in 2021, up by 8.38% from the year prior – and equivalent to an indicator rank of 94.

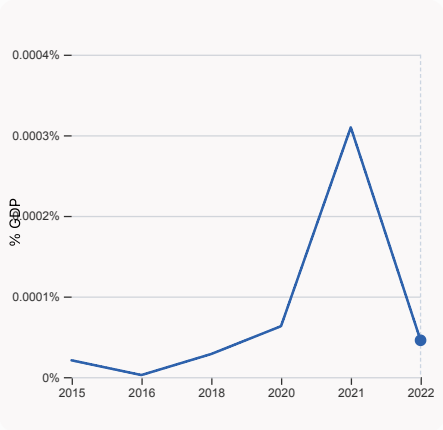


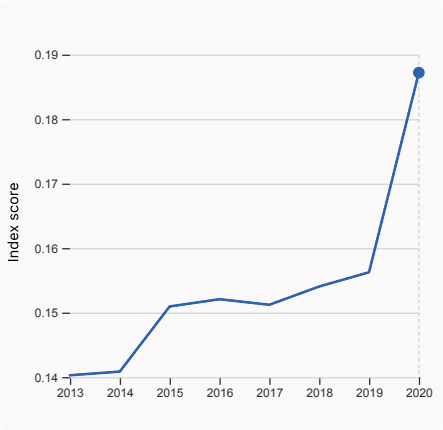
4.1.1 Finance for startups and scaleups

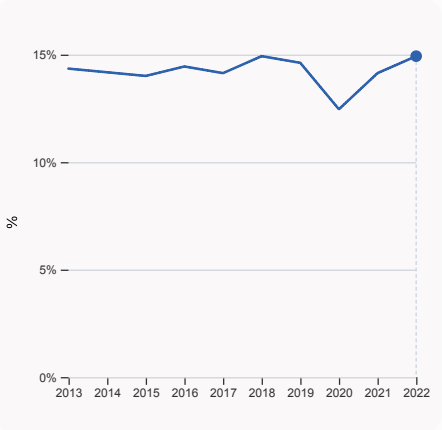
was equal to an average perception score of 4.3 in 2018, equivalent to an indicator rank of 54.

Global Innovation Index 2023









4.2.4 VC received, value, % GDP

was equal to 0.00005% GDP in 2022, down by 0.00026 percentage points from the year prior – and equivalent to an indicator rank of 77.

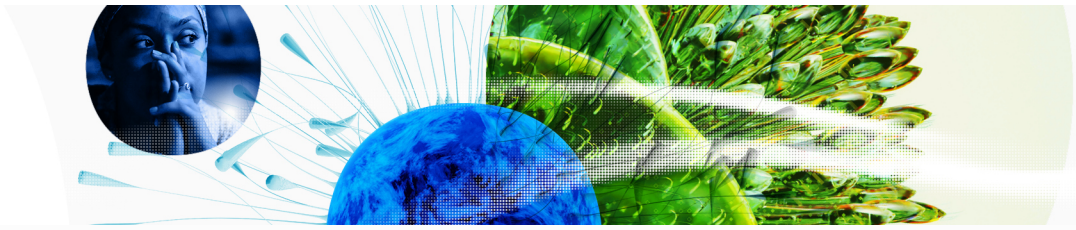
4.3.2 Domestic industry diversification

was equal to an index score of 0.187 in 2020, up by 19.81% from the year prior – and equivalent to an indicator rank of 64.

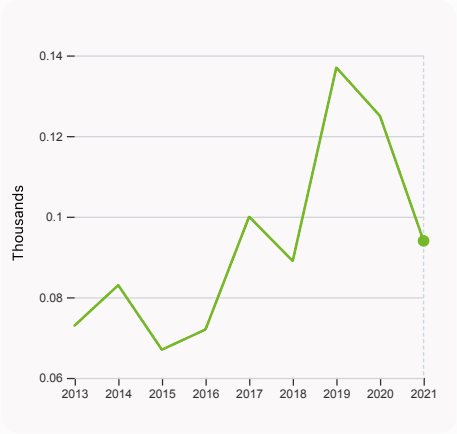
5.1.1 Knowledge-intensive employment, %

was equal to 14.93% in 2022, up by 0.79 percentage points from the year prior – and equivalent to an indicator rank of 89.

Global Innovation Index 2023

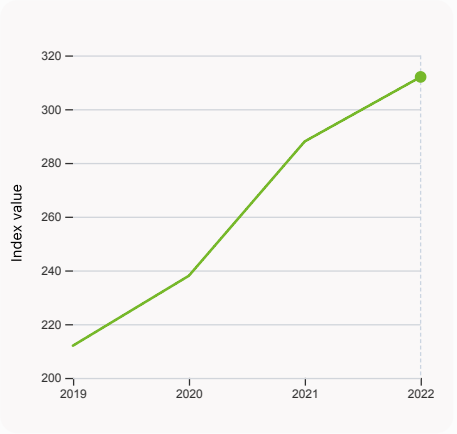


> Innovation outputs in Peru



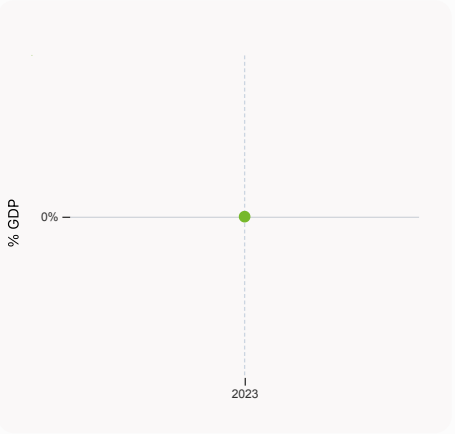
6.1.1 Patents by origin

was equal to 0.094 Thousands in 2021, down by 24.8% from the year prior – and equivalent to an indicator rank of 102.



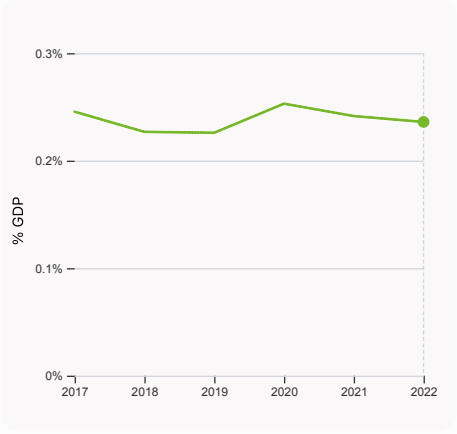
6.1.5 Citable documents H-index

was equal to an index value of 312 in 2022, up by 8.33% from the year prior – and equivalent to an indicator rank of 56.



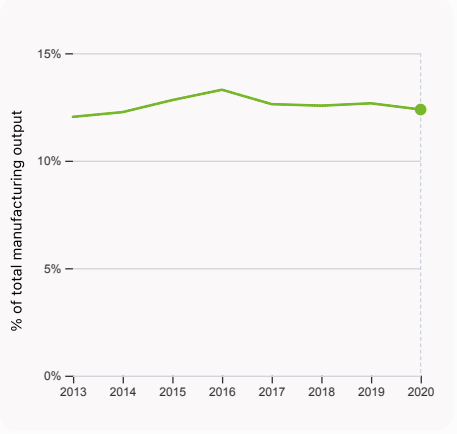
6.2.2 Unicorn valuation, % GDP

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



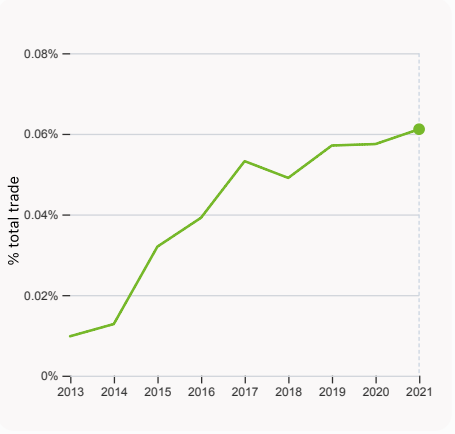
6.2.3 Software spending, % GDP

was equal to 0.236% GDP in 2022, down by 0.0055 percentage points from the year prior – and equivalent to an indicator rank of 63.



6.2.4 High-tech manufacturing, %

was equal to 12.38% of total manufacturing output in 2020, down by 0.29 percentage points from the year prior – and equivalent to an indicator rank of 84.



6.3.1 Intellectual property receipts, % total trade

was equal to 0.061% total trade in 2021, up by 0.0037 percentage points from the year prior – and equivalent to an indicator rank of 68.

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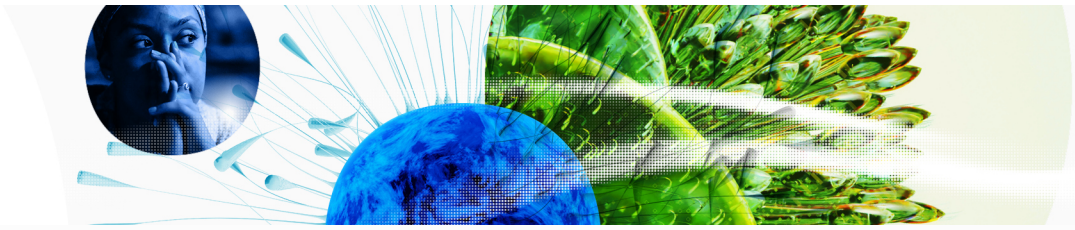
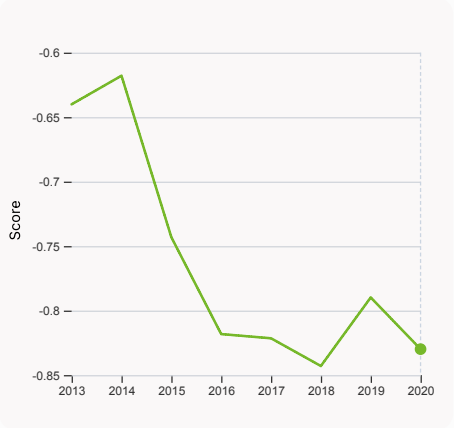
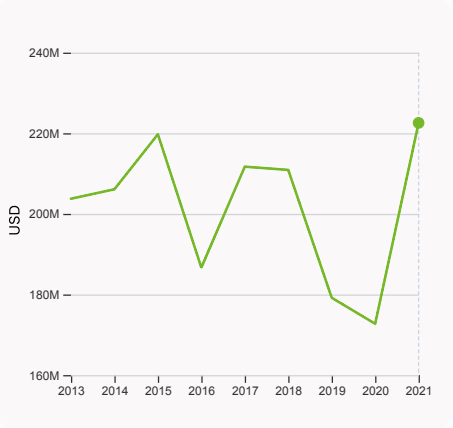




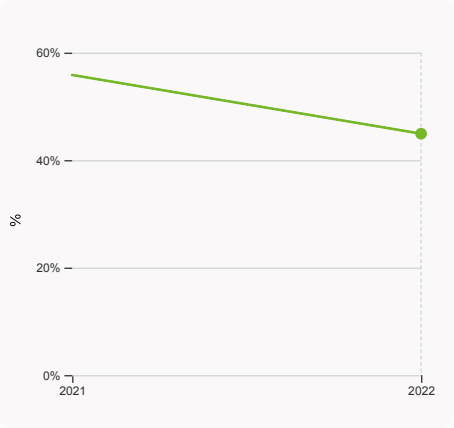
6.3.2 Production and export complexity

was equal to a score of -0.83 in 2020, down by 5.075% from the year prior – and equivalent to an indicator rank of 102.



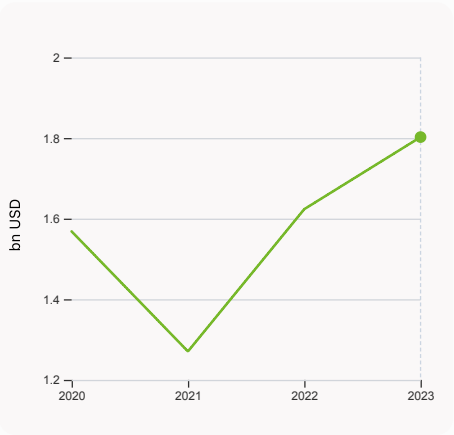
6.3.3 High-tech exports

was equal to 222,576,204 USD in 2021, up by 28.85% from the year prior – and equivalent to an indicator rank of 95.



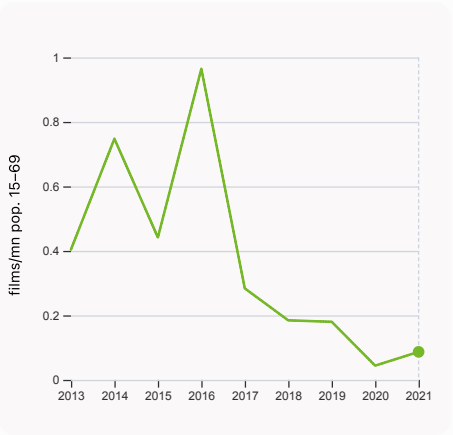
7.1.1 Intangible asset intensity, top 15, %

was equal to 44.92% in 2022, down by 10.93 percentage points from the year prior – and equivalent to an indicator rank of 58.



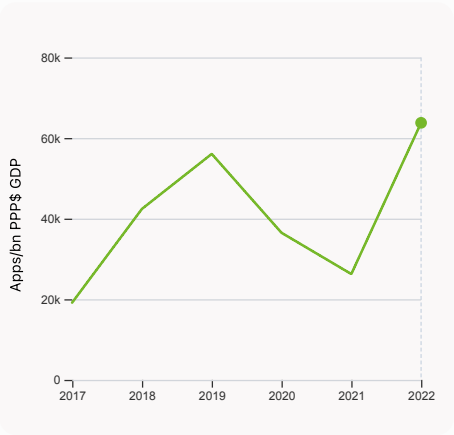
7.1.3 Global brand value, top 5,000

was equal to 1.802 bn USD in 2023, up by 11.015% from the year prior – and equivalent to an indicator rank of 58.



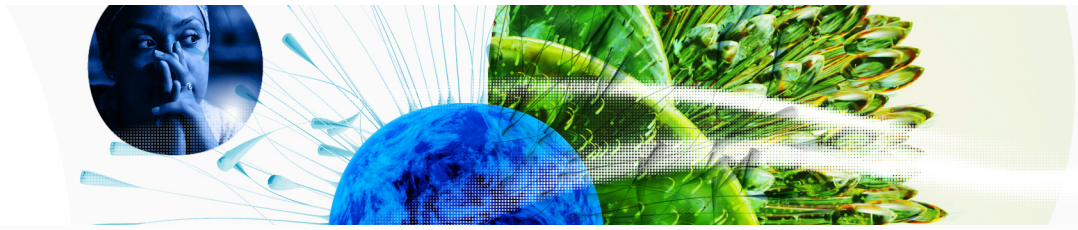
7.2.2 National feature films/mn pop. 15-69

was equal to 0.087 films/mn pop. 15–69 in 2021, up by 96.68% from the year prior – and equivalent to an indicator rank of 80.



7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 63,774.67 Apps/bn PPP$ GDP in 2022, up by 142.86% from the year prior – and equivalent to an indicator rank of 85.



→ Peru's innovation top performers

> 2.3.4 QS university ranking of Peru's top universities

Rank	University	Score
363	PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU	30.20
651-700	UNIVERSIDAD PERUANA CAYETANO HEREDIA	19.20
801-1000	UNIVERSIDAD NACIONAL MAYOR DE SAN MARCOS	13.10

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2023).
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 Top 15 intangible-asset intensive companies in Peru

Rank	Firm	Intensity, %
1	CREDICORP LTD	41.24
2	INRETAIL PERU CORP	60.83
3	BANCO INTERNACIONAL DEL PERU SAA INTERBANK	46.77

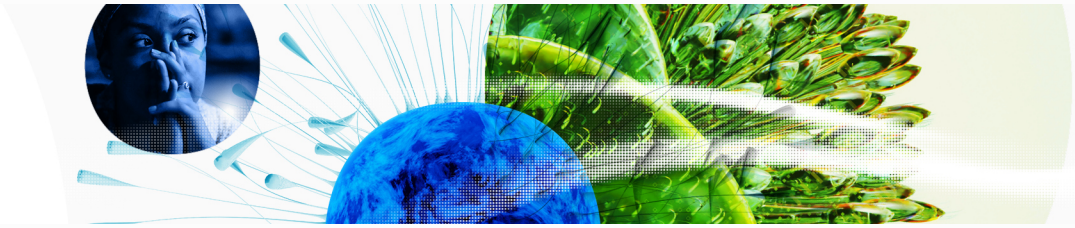
Source: Brand Finance (https://brandirectory.com/reports/gift-2022).
Note: Brand Finance only provides within economy ranks.

> 7.1.3 Top 5,000 companies in Peru with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	SCC	Mining, Iron & Steel	588.1
2	BCP	Banking	573.3
3	PILSEN CALLAO	Beers	329.4

Source: Brand Finance (https://brandirectory.com).
Note: Rank corresponds to within economy ranks.

Global Innovation Index 2023



Peru

GII 2023 rank **76**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
84	60	Upper middle	LCN	34.0	521.8	15,273.2

	Score / Value	Rank
Institutions	**45.9**	**81**
1.1 Institutional environment	**34.9**	**93**
1.1.1 Operational stability for businesses*	40.3	94
1.1.2 Government effectiveness*	29.5	88
1.2 Regulatory environment	**63.8**	**64**
1.2.1 Regulatory quality*	44.2	68
1.2.2 Rule of law*	24.6	94
1.2.3 Cost of redundancy dismissal	11.4	37 ●
1.3 Business environment	**38.9**	**91**
1.3.1 Policies for doing business†	32.4	101
1.3.2 Entrepreneurship policies and culture†	45.3	41
Human capital and research	**34.7**	**50**
2.1 Education	**43.5**	**85**
2.1.1 Expenditure on education, % GDP	4.0	72
2.1.2 Government funding/pupil, secondary, % GDP/cap	15.5	73
2.1.3 School life expectancy, years	15.0	53
2.1.4 PISA scales in reading, maths and science	401.5	66
2.1.5 Pupil-teacher ratio, secondary	13.9	69
2.2 Tertiary education	**52.6**	**7**
2.2.1 Tertiary enrolment, % gross	70.7	34 ●
2.2.2 Graduates in science and engineering, %	29.6	21 ●
2.2.3 Tertiary inbound mobility, %	n/a	n/a
2.3 Research and development (R&D)	**8.0**	**67**
2.3.1 Researchers, FTE/mn pop.	n/a	n/a
2.3.2 Gross expenditure on R&D, % GDP	0.2	92
2.3.3 Global corporate R&D investors, top 3, mn US$	0.0	40 ○ ◇
2.3.4 QS university ranking, top 3*	21.1	50
Infrastructure	**41.4**	**63**
3.1 Information and communication technologies (ICTs)	**69.9**	**66**
3.1.1 ICT access*	64.4	94 ◇
3.1.2 ICT use*	60.7	92
3.1.3 Government's online service*	79.0	37 ●
3.1.4 E-participation*	75.6	22 ●
3.2 General infrastructure	**23.8**	**78**
3.2.1 Electricity output, GWh/mn pop.	1,742.6	88
3.2.2 Logistics performance*	40.9	60
3.2.3 Gross capital formation, % GDP	25.2	52
3.3 Ecological sustainability	**30.5**	**51**
3.3.1 GDP/unit of energy use	16.3	19 ●
3.3.2 Environmental performance*	35.4	74
3.3.3 ISO 14001 environment/bn PPP$ GDP	1.9	49
Market sophistication	**37.9**	**52**
4.1 Credit	**44.8**	**36**
4.1.1 Finance for startups and scaleups†	44.3	54
4.1.2 Domestic credit to private sector, % GDP	55.2	66
4.1.3 Loans from microfinance institutions, % GDP	6.0	5 ●
4.2 Investment	**4.9**	**78**
4.2.1 Market capitalization, % GDP	42.8	39
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	0.0	88 ○
4.2.3 VC recipients, deals/bn PPP$ GDP	0.0	93 ○
4.2.4 VC received, value, % GDP	0.0	77
4.3 Trade, diversification, and market scale	**64.0**	**34**
4.3.1 Applied tariff rate, weighted avg., %	0.7	6 ●
4.3.2 Domestic industry diversification	85.1	64
4.3.3 Domestic market scale, bn PPP$	521.8	45

	Score / Value	Rank
Business sophistication	**31.0**	**52**
5.1 Knowledge workers	**48.4**	**33**
5.1.1 Knowledge-intensive employment, %	14.9	89 ◇
5.1.2 Firms offering formal training, %	65.9	5 ●
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, %	11.5	67
5.2 Innovation linkages	**11.6**	**110** ◇
5.2.1 University-industry R&D collaboration†	19.8	119 ○ ◇
5.2.2 State of cluster development†	25.4	106
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	125 ○
5.2.5 Patent families/bn PPP$ GDP	0.0	79
5.3 Knowledge absorption	**32.9**	**69**
5.3.1 Intellectual property payments, % total trade	0.7	53
5.3.2 High-tech imports, % total trade	9.2	46
5.3.3 ICT services imports, % total trade	1.2	71
5.3.4 FDI net inflows, % GDP	1.9	75
5.3.5 Research talent, % in businesses	n/a	n/a
Knowledge and technology outputs	**13.6**	**101**
6.1 Knowledge creation	**8.1**	**93**
6.1.1 Patents by origin/bn PPP$ GDP	0.2	102
6.1.2 PCT patents by origin/bn PPP$ GDP	0.1	70
6.1.3 Utility models by origin/bn PPP$ GDP	0.4	35
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a
6.1.5 Citable documents H-index	15.0	56
6.2 Knowledge impact	**21.6**	**94**
6.2.1 Labor productivity growth, %	0.6	75
6.2.2 Unicorn valuation, % GDP	0.0	48 ○ ◇
6.2.3 Software spending, % GDP	0.2	63
6.2.4 High-tech manufacturing, %	12.4	84
6.3 Knowledge diffusion	**11.1**	**101** ◇
6.3.1 Intellectual property receipts, % total trade	0.1	68
6.3.2 Production and export complexity	35.1	102 ○ ◇
6.3.3 High-tech exports, % total trade	0.4	95
6.3.4 ICT services exports, % total trade	0.2	120 ○
6.3.5 ISO 9001 quality/bn PPP$ GDP	3.8	66
Creative outputs	**20.9**	**74**
7.1 Intangible assets	**31.3**	**67**
7.1.1 Intangible asset intensity, top 15, %	44.9	58
7.1.2 Trademarks by origin/bn PPP$ GDP	62.3	35 ●
7.1.3 Global brand value, top 5,000	0.7	58
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.2	106 ○
7.2 Creative goods and services	**3.1**	**95**
7.2.1 Cultural and creative services exports, % total trade	n/a	n/a
7.2.2 National feature films/mn pop. 15-69	0.1	80 ○ ◇
7.2.3 Entertainment and media market/th pop. 15-69	6.2	39
7.2.4 Creative goods exports, % total trade	0.2	73
7.3 Online creativity	**17.8**	**78**
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	5.7	54
7.3.2 Country-code TLDs/th pop. 15-69	1.8	74
7.3.3 GitHub commits/mn pop. 15-69	4.7	72
7.3.4 Mobile app creation/bn PPP$ GDP	59.0	85

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.

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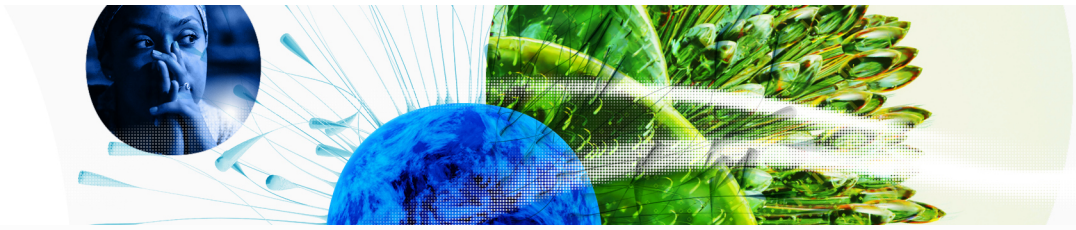

→ Data availability

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

> Peru has missing data for seven indicators and outdated data for seven indicators.

> Missing data for Peru

Code	Indicator name	Economy Year	Model Year	Source
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
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
7.2.1	Cultural and creative services exports, % total trade	n/a	2021	World Trade Organization and United Nations Conference on Trade and Development

> Outdated data for Peru

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	2018	2022	Global Entrepreneurship Monitor
2.1.3	School life expectancy, years	2017	2020	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2017	2020	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2017	2020	UNESCO Institute for Statistics; Eurostat; OECD
2.3.2	Gross expenditure on R&D, % GDP	2020	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
4.1.1	Finance for startups and scaleups	2018	2022	Global Entrepreneurship Monitor
5.1.2	Firms offering formal training, %	2017	2019	World Bank Enterprise Surveys

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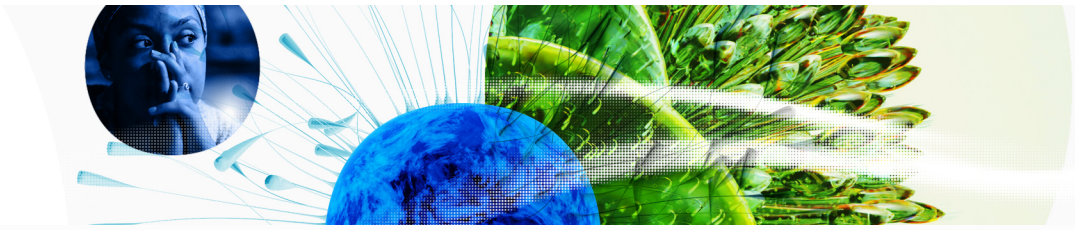

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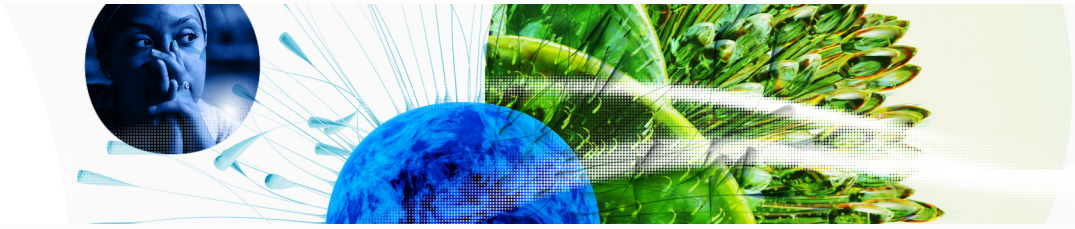

About the Global Innovation Index

- 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.

Source: Global Innovation Index Database, WIPO, 2023.

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.