

## PERU

### 76th

Peru ranks 76th among the 131 economies featured in the GII 2020.

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 Peru 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 Peru in the GII 2020 is between ranks 72 and 81.

Rankings of Peru (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	76	55	98
2019	69	48	86
2018	71	59	83

- Peru performs better in innovation inputs than innovation outputs in 2020.
- This year Peru ranks 55th in innovation inputs, lower than last year and higher compared to 2018.
- As for innovation outputs, Peru ranks 98th. This position is lower than last year and lower compared to 2018.

### 23rd

Peru ranks 23rd among the 37 upper middle-income group economies.

### 9th

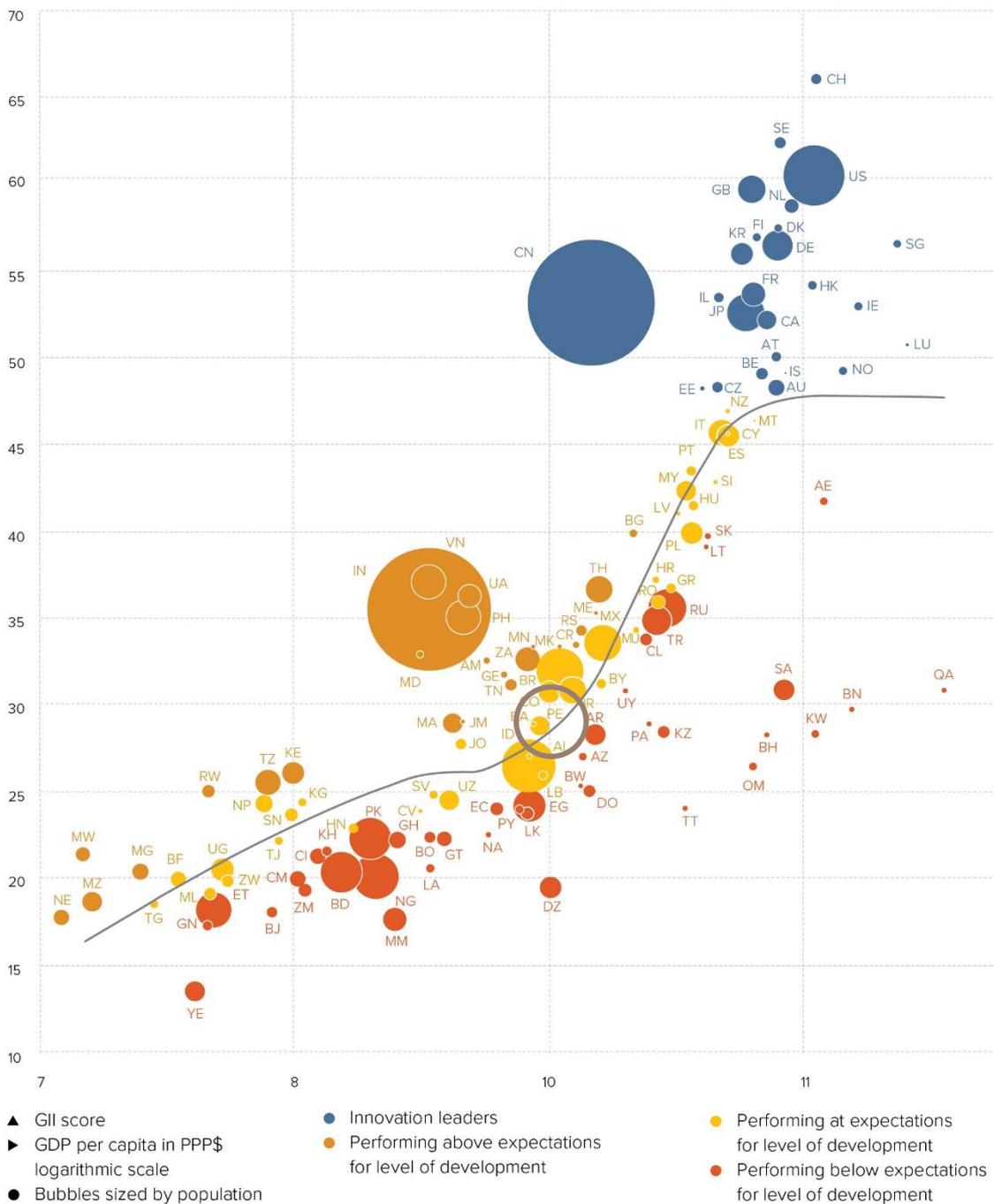
Peru ranks 9th among the 18 economies in Latin America and the Caribbean.

## 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, Peru's performance matches expectations for its level of development.

### The positive relationship between innovation and development

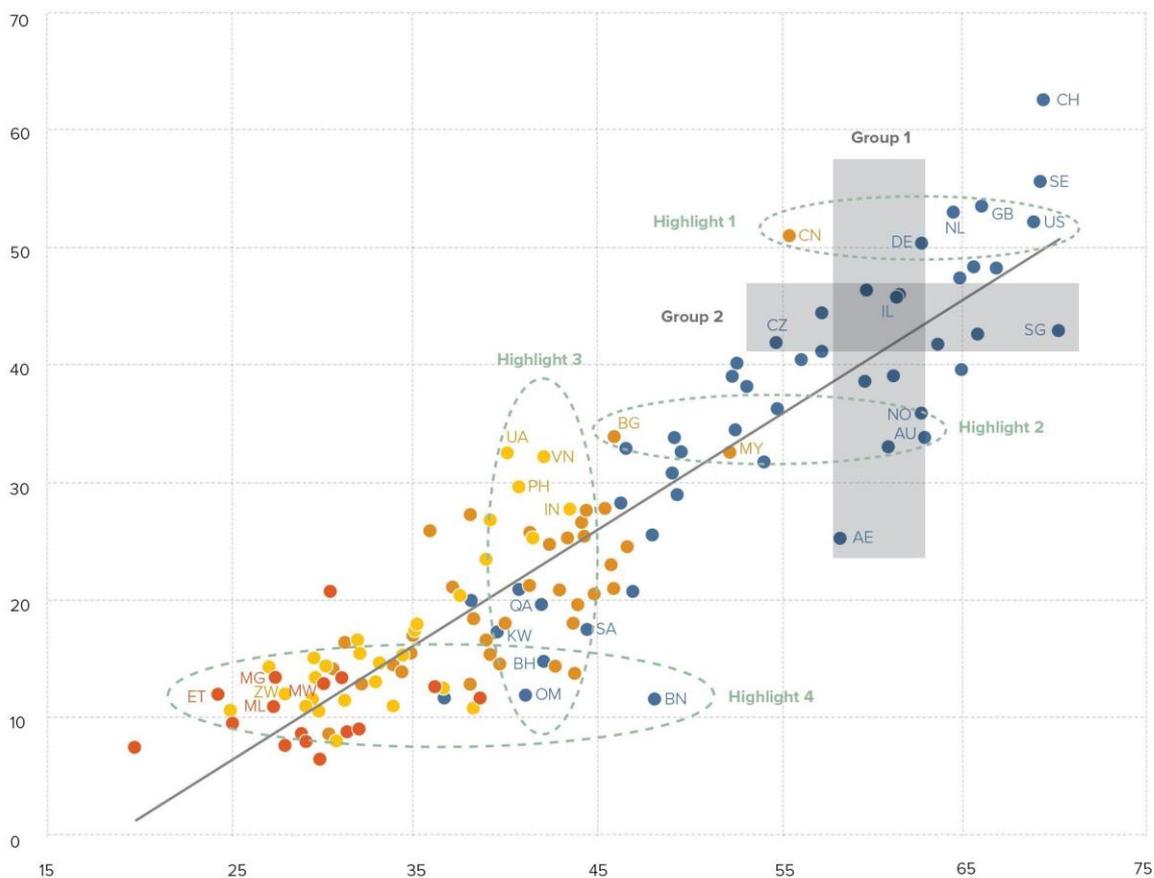


# EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

**Innovation input to output performance, 2020**

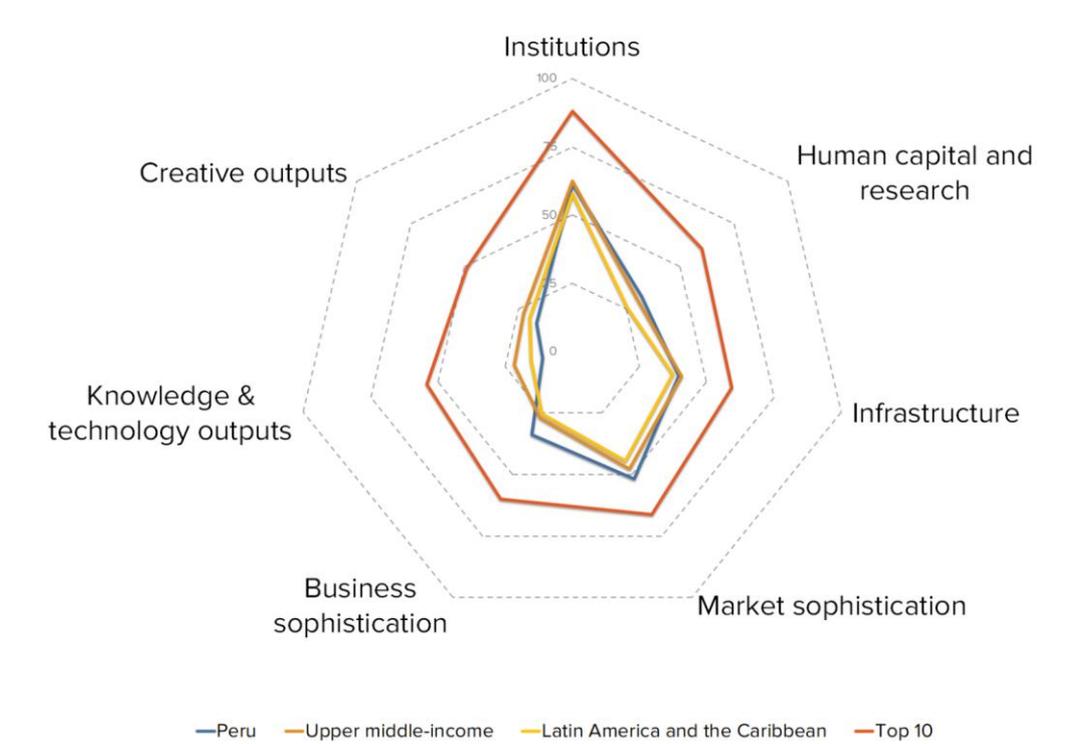


▲ Output score      ● High income group      ● Lower middle-income group      — Fitted values  
 ► Input score      ● Upper middle-income group      ● Low income group

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

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

## Peru's scores in the seven GII pillars



### Upper middle-income group economies

Peru has high scores in four out of the seven GII pillars: Human capital & research, Infrastructure, Market sophistication and Business sophistication, which are above average for the upper middle-income group.

Conversely, Peru scores below average for its income group in three pillars: Institutions, Knowledge & technology outputs and Creative outputs.

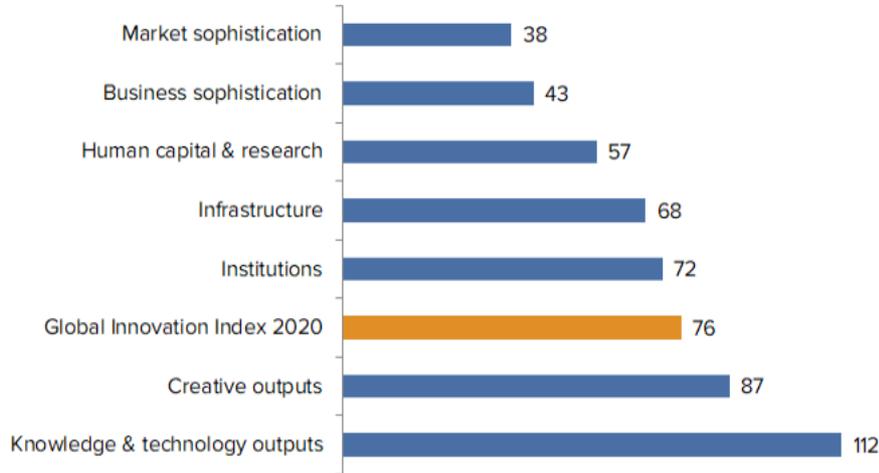
### Latin America and the Caribbean

Compared to other economies in Latin America and the Caribbean, Peru performs:

- above average in five out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Market sophistication and Business sophistication; and
- below average in two out of the seven GII pillars: Knowledge & technology outputs and Creative outputs.

## OVERVIEW OF PERU RANKINGS IN THE SEVEN GII AREAS

Peru performs best in Market sophistication and its weakest performance is in Knowledge & technology outputs.



\*The highest possible ranking in each pillar is 1.

## INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Peru in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal, salary weeks	36	2.1.4	PISA scales in reading, maths, & science	66
2.2	Tertiary education	13	2.3.2	Gross expenditure on R&D, % GDP	100
2.2.1	Tertiary enrolment, % gross	27	2.3.3	Global R&D companies, top 3, mn US\$	42
2.2.2	Graduates in science & engineering, %	16	4.2.3	Venture capital deals/bn PPP\$ GDP	73
3.1.4	E-participation*	36	5.2.1	University/industry research collaboration <sup>†</sup>	106
3.3.1	GDP/unit of energy use	12	5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	114
4	Market sophistication	38	6	Knowledge & technology outputs	112
4.1	Credit	23	6.1.4	Scientific & technical articles/bn PPP\$ GDP	118
4.1.3	Microfinance gross loans, % GDP	2	6.2.1	Growth rate of PPP\$ GDP/worker, %	104
4.3	Trade, competition, and market scale	31	6.3	Knowledge diffusion	118
4.3.1	Applied tariff rate, weighted avg., %	7	6.3.3	ICT services exports, % total trade	113
5.1.2	Firms offering formal training, %	5	7.3.4	Mobile app creation/bn PPP\$ GDP	88
6.2.2	New businesses/th pop. 15-64	37			
7.2.4	Printing and other media, % manufacturing	15			

## **STRENGTHS**

GII strengths for Peru are found in seven of the seven GII pillars.

- Institutions (72): exhibits strengths in the indicator Cost of redundancy dismissal (36).
- Human capital & research (57): shows strengths in the sub-pillar Tertiary education (13) and in the indicators Tertiary enrolment (27) and Graduates in science & engineering (16).
- Infrastructure (68): demonstrates strengths in the indicators E-participation (36) and GDP/unit of energy use (12).
- Market sophistication (38): exhibits strengths in the sub-pillars Credit (23) and Trade, competition, and market scale (31) and in the indicators Microfinance gross loans (2) and Applied tariff rate (7).
- Business sophistication (43): the indicator Firms offering formal training (5) is a strength.
- Knowledge & technology outputs (112): reveals strengths in the indicator New businesses (37).
- Creative outputs (87): demonstrates strengths in the indicator Printing and other media (15).

## **WEAKNESSES**

GII weaknesses for Peru are found in five of the seven GII pillars.

- Human capital & research (57): reveals weaknesses in the indicators PISA scales in reading, maths, & science (66), Gross expenditure on R&D (100) and Global R&D companies (42).
- Market sophistication (38): shows weaknesses in the indicator Venture capital deals (73).
- Business sophistication (43): demonstrates weaknesses in the indicators University/industry research collaboration (106) and JV–strategic alliance deals (114).
- Knowledge & technology outputs (112): exhibits weaknesses in the sub-pillar Knowledge diffusion (118) and in the indicators Scientific & technical articles (118), Growth rate (104) and ICT services exports (113).
- Creative outputs (87): shows weaknesses in the indicator Mobile app creation (88).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
98	55	Upper middle	LCN	32.5	478.3	12,850.2	69
			Score/Value Rank				Score/Value Rank
<b>INSTITUTIONS</b> ..... 61.4 72				<b>BUSINESS SOPHISTICATION</b> ..... 33.8 43			
<b>1.1</b>	<b>Political environment</b> .....	<b>51.2</b>	<b>87</b>	<b>5.1</b>	<b>Knowledge workers</b> .....	<b>57.4</b>	<b>[21]</b>
1.1.1	Political and operational stability*.....	64.3	83	5.1.1	Knowledge-intensive employment, %.....	24.4	61
1.1.2	Government effectiveness*.....	44.7	85	5.1.2	Firms offering formal training, %.....	65.9	5
<b>1.2</b>	<b>Regulatory environment</b> .....	<b>68.8</b>	<b>51</b>	5.1.3	GERD performed by business, % GDP.....	n/a	n/a
1.2.1	Regulatory quality*.....	55.5	45	5.1.4	GERD financed by business, %.....	n/a	n/a
1.2.2	Rule of law*.....	33.2	96	5.1.5	Females employed w/advanced degrees, %.....	16.3	41
1.2.3	Cost of redundancy dismissal, salary weeks.....	11.4	36	<b>5.2</b>	<b>Innovation linkages</b> .....	<b>16.5</b>	<b>99</b>
<b>1.3</b>	<b>Business environment</b> .....	<b>64.3</b>	<b>87</b>	5.2.1	University/industry research collaboration*.....	30.9	106
1.3.1	Ease of starting a business*.....	82.1	102	5.2.2	State of cluster development.....	40.1	96
1.3.2	Ease of resolving insolvency*.....	46.6	82	5.2.3	GERD financed by abroad, % GDP.....	n/a	n/a
				5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....	0.0	114
				5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....	0.0	85
<b>HUMAN CAPITAL &amp; RESEARCH</b> ..... 32.3 57				<b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS</b> .... 10.9 112			
<b>2.1</b>	<b>Education</b> .....	<b>37.6</b>	<b>86</b>	<b>5.3</b>	<b>Knowledge absorption</b> .....	<b>27.6</b>	<b>70</b>
2.1.1	Expenditure on education, % GDP.....	3.7	83	5.3.1	Intellectual property payments, % total trade.....	0.7	56
2.1.2	Government funding/pupil, secondary, % GDP/cap.....	14.6	81	5.3.2	High-tech imports, % total trade.....	8.1	57
2.1.3	School life expectancy, years.....	15.0	53	5.3.3	ICT services imports, % total trade.....	1.2	58
2.1.4	PISA scales in reading, maths, & science.....	401.5	66	5.3.4	FDI net inflows, % GDP.....	3.2	46
2.1.5	Pupil-teacher ratio, secondary.....	14.2	69	5.3.5	Research talent, % in business enterprise.....	n/a	n/a
<b>2.2</b>	<b>Tertiary education</b> .....	<b>53.2</b>	<b>13</b>	<b>6.1</b>	<b>Knowledge creation</b> .....	<b>6.7</b>	<b>92</b>
2.2.1	Tertiary enrolment, % gross.....	70.7	27	6.1.1	Patents by origin/bn PPP\$ GDP.....	0.2	103
2.2.2	Graduates in science & engineering, %.....	29.6	16	6.1.2	PCT patents by origin/bn PPP\$ GDP.....	0.1	78
2.2.3	Tertiary inbound mobility, %.....	n/a	n/a	6.1.3	Utility models by origin/bn PPP\$ GDP.....	0.5	37
<b>2.3</b>	<b>Research &amp; development (R&amp;D)</b> .....	<b>6.1</b>	<b>74</b>	6.1.4	Scientific & technical articles/bn PPP\$ GDP.....	2.1	118
2.3.1	Researchers, FTE/mn pop.....	n/a	n/a	6.1.5	Citable documents H-index.....	13.8	57
2.3.2	Gross expenditure on R&D, % GDP.....	0.1	100	<b>6.2</b>	<b>Knowledge impact</b> .....	<b>15.3</b>	<b>99</b>
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US.....	0.0	42	6.2.1	Growth rate of PPP\$ GDP/worker, %.....	-0.8	104
2.3.4	QS university ranking, average score top 3*.....	16.0	55	6.2.2	New businesses/th pop. 15-64.....	3.8	37
				6.2.3	Computer software spending, % GDP.....	0.0	67
				6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....	2.9	74
				6.2.5	High- and medium-high-tech manufacturing, %.....	10.5	79
<b>INFRASTRUCTURE</b> ..... 39.7 68				<b>CREATIVE OUTPUTS</b> ..... 16.6 87			
<b>3.1</b>	<b>Information &amp; communication technologies (ICTs)</b> ....	<b>65.7</b>	<b>70</b>	<b>7.1</b>	<b>Intangible assets</b> .....	<b>21.2</b>	<b>89</b>
3.1.1	ICT access*.....	50.9	89	7.1.1	Trademarks by origin/bn PPP\$ GDP.....	51.6	45
3.1.2	ICT use*.....	43.5	91	7.1.2	Global brand value, top 5,000, % GDP.....	6.8	64
3.1.3	Government's online service*.....	81.9	41	7.1.3	Industrial designs by origin/bn PPP\$ GDP.....	0.3	95
3.1.4	E-participation*.....	86.5	36	7.1.4	ICTs & organizational model creation*.....	48.6	86
<b>3.2</b>	<b>General infrastructure</b> .....	<b>19.1</b>	<b>105</b>	<b>7.2</b>	<b>Creative goods and services</b> .....	<b>10.1</b>	<b>76</b>
3.2.1	Electricity output, kWh/mn pop.....	1,645.0	85	7.2.1	Cultural & creative services exports, % total trade.....	0.1	82
3.2.2	Logistics performance*.....	29.2	82	7.2.2	National feature films/mn pop. 15-69.....	1.1	85
3.2.3	Gross capital formation, % GDP.....	22.1	77	7.2.3	Entertainment & Media market/th pop. 15-69.....	8.1	40
<b>3.3</b>	<b>Ecological sustainability</b> .....	<b>34.2</b>	<b>50</b>	7.2.4	Printing and other media, % manufacturing.....	2.0	15
3.3.1	GDP/unit of energy use.....	15.6	12	7.2.5	Creative goods exports, % total trade.....	0.3	71
3.3.2	Environmental performance*.....	44.0	79	<b>7.3</b>	<b>Online creativity</b> .....	<b>14.0</b>	<b>72</b>
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....	1.0	61	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....	5.2	53
				7.3.2	Country-code TLDs/th pop. 15-69.....	1.6	73
				7.3.3	Wikipedia edits/mn pop. 15-69.....	51.8	58
				7.3.4	Mobile app creation/bn PPP\$ GDP.....	0.1	88
<b>MARKET SOPHISTICATION</b> ..... 51.9 38							
<b>4.1</b>	<b>Credit</b> .....	<b>53.9</b>	<b>23</b>				
4.1.1	Ease of getting credit*.....	75.0	34				
4.1.2	Domestic credit to private sector, % GDP.....	44.0	75				
4.1.3	Microfinance gross loans, % GDP.....	5.8	2				
<b>4.2</b>	<b>Investment</b> .....	<b>29.5</b>	<b>95</b>				
4.2.1	Ease of protecting minority investors*.....	68.0	44				
4.2.2	Market capitalization, % GDP.....	43.8	36				
4.2.3	Venture capital deals/bn PPP\$ GDP.....	0.0	73				
<b>4.3</b>	<b>Trade, competition, and market scale</b> .....	<b>72.2</b>	<b>31</b>				
4.3.1	Applied tariff rate, weighted avg., %.....	0.7	7				
4.3.2	Intensity of local competition*.....	72.5	42				
4.3.3	Domestic market scale, bn PPP\$.....	478.3	44				

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 Appendix II for details, including the year of the data, at <http://globalinnovationindex.org>. 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 data that are either missing or outdated for Peru.

### Missing data

Code	Indicator name	Country year	Model year	Source
2.2.3	Tertiary inbound mobility, %	n/a	2017	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2017	UNESCO Institute for Statistics
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators

### Outdated data

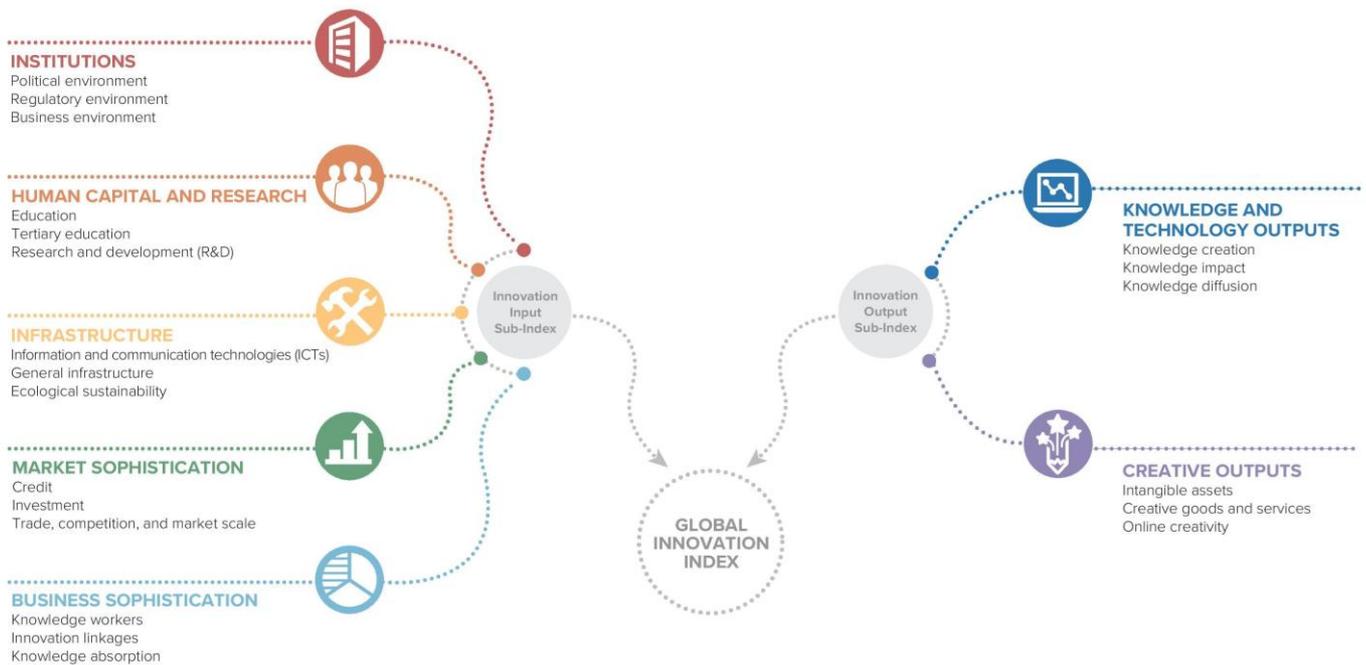
Code	Indicator name	Country year	Model year	Source
5.1.2	Firms offering formal training, %	2016	2018	World Bank
5.3.1	Intellectual property payments, % total trade	2017	2018	World Trade Organization
5.3.3	ICT services imports, % total trade	2017	2018	World Trade Organization
6.3.1	Intellectual property receipts, % total trade	2017	2018	World Trade Organization
6.3.3	ICT services exports, % total trade	2017	2018	World Trade Organization

## ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13<sup>th</sup> edition devoted to the theme *Who Will Finance Innovation?*

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.

### Framework of the Global Innovation Index 2020



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.

