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.

<table>
<thead>
<tr>
<th></th>
<th>GII</th>
<th>Innovation inputs</th>
<th>Innovation outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>76</td>
<td>55</td>
<td>98</td>
</tr>
<tr>
<td>2019</td>
<td>69</td>
<td>48</td>
<td>86</td>
</tr>
<tr>
<td>2018</td>
<td>71</td>
<td>59</td>
<td>83</td>
</tr>
</tbody>
</table>

- 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.
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.
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.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code</strong></td>
<td><strong>Indicator name</strong></td>
</tr>
<tr>
<td>1.2.3</td>
<td>Cost of redundancy dismissal, salary weeks</td>
</tr>
<tr>
<td>2.2</td>
<td>Tertiary education</td>
</tr>
<tr>
<td>2.2.1</td>
<td>Tertiary enrolment, % gross</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Graduates in science &amp; engineering, %</td>
</tr>
<tr>
<td>3.1.4</td>
<td>E-participation*</td>
</tr>
<tr>
<td>3.3.1</td>
<td>GDP/unit of energy use</td>
</tr>
<tr>
<td>4</td>
<td>Market sophistication</td>
</tr>
<tr>
<td>4.1</td>
<td>Credit</td>
</tr>
<tr>
<td>4.1.3</td>
<td>Microfinance gross loans, % GDP</td>
</tr>
<tr>
<td>4.3</td>
<td>Trade, competition, and market scale</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Applied tariff rate, weighted avg., %</td>
</tr>
<tr>
<td>5.1.2</td>
<td>Firms offering formal training, %</td>
</tr>
<tr>
<td>6.2.2</td>
<td>New businesses/th pop. 15–64</td>
</tr>
<tr>
<td>7.2.4</td>
<td>Printing and other media, % manufacturing</td>
</tr>
</tbody>
</table>
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).
## PERU

### GI 2020 rank

<table>
<thead>
<tr>
<th>Output rank</th>
<th>Input rank</th>
<th>Income Region</th>
<th>Population (mn)</th>
<th>GDP, PPP$</th>
<th>GDP per capita, PPP$</th>
<th>GI 2019 rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>55</td>
<td>Upper middle</td>
<td>LCN</td>
<td>32.5</td>
<td>12,850.2</td>
<td>69</td>
</tr>
</tbody>
</table>

### INSTITUTIONS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>61.4</td>
<td>72</td>
</tr>
</tbody>
</table>

1.1 Political environment...
1.1.1 Political and operational stability*
1.1.2 Government effectiveness...
1.2 Regulatory environment...
1.2.1 Regulatory quality...
1.2.2 Rule of law...
1.2.3 Cost of redundancy dismissal, salary weeks...
1.3 Business environment...
1.3.1 Ease of starting a business*
1.3.2 Ease of resolving insolvency*

### HUMAN CAPITAL & RESEARCH

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.3</td>
<td>57</td>
</tr>
</tbody>
</table>

2.1 Education...
2.1.1 Expenditure on education, % GDP...
2.1.2 Government funding/pupil, secondary, % GDP/pcap...
2.1.3 School life expectancy, years...
2.1.4 PISA scales in reading, maths, & science...
2.1.5 pupil-teacher ratio, secondary...
2.2 Tertiary education...
2.2.1 Tertiary enrolment, % gross...
2.2.2 Graduates in science & engineering, %...
2.2.3 Tertiary inbound mobility, %...
2.3 Research & development (R&D).
2.3.1 Researchers, FTE/mn pop...
2.3.2 Gross expenditure on R&D, % GDP...
2.3.3 Global R&D companies, avg. exp. top 3, mn S$us...
2.3.4 QS university ranking, average score top 3'

### INFRASTRUCTURE

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>39.7</td>
<td>68</td>
</tr>
</tbody>
</table>

3.1 Information & communication technologies (ICTs)...
3.1.1 ICT access*
3.1.2 ICT use*
3.1.3 Government's online service*
3.1.4 E-participation*
3.2 General infrastructure...
3.2.1 Electricity output, kWh/mn pop...
3.2.2 Logistics performance*
3.2.3 Gross capital formation, % GDP...
3.3 Ecological sustainability...
3.3.1 Government's environmental performance*
3.3.2 ISO 14001 environmental certificates/tn PPP$ GDP...

### MARKET SOPHISTICATION

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.9</td>
<td>38</td>
</tr>
</tbody>
</table>

4.1 Credit...
4.1.1 Ease of getting credit*
4.1.2 Domestic credit to private sector, % GDP...
4.1.3 Microfinance gross loans, % GDP...
4.2 Investment...
4.2.1 Ease of protecting minority investors*
4.2.2 Market capitalization, % GDP...
4.2.3 Venture capital deals/tn PPP$ GDP...
4.3 Trade, competition, and market scale...
4.3.1 Applied tariff rate, weighted avg, %...
4.3.2 Intensity of local competition...
4.3.3 Domestic market scale, bn PPP$...

### BUSINESS SOPHISTICATION

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.8</td>
<td>43</td>
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</tbody>
</table>

5.1 Knowledge workers...
5.1.1 Knowledge-intensive employment, %...
5.1.2 Firms offering formal training, %...
5.1.3 GERD performed by business, % GDP...
5.1.4 GERD financed by business, %...
5.1.5 Females employed with advanced degrees, %
5.2 Innovation linkages...
5.2.1 Universities/industry research collaboration...
5.2.2 State of cluster development...
5.2.3 GERD financed by abroad, % GDP...
5.2.4 JV-strategic alliance deals/tn PPP$ GDP...
5.2.5 Patent families x 24 offices/tn PPP$ GDP...

### KNOWLEDGE & TECHNOLOGY OUTPUTS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.9</td>
<td>112</td>
</tr>
</tbody>
</table>

6.1 Knowledge creation...
6.1.1 Patents by origin/tn PPP$ GDP...
6.1.2 PCT patents by origin/tn PPP$ GDP...
6.1.3 Utility models by origin/tn PPP$ GDP...
6.1.4 Scientific & technical articles/tn PPP$ GDP...
6.1.5 Citable documents H-index...
6.2 Knowledge impact...
6.2.1 Growth rate of PPP$ GDP/worker...
6.2.2 New businesses/tn pop. 15-64...
6.2.3 Computer software spending, % GDP...
6.2.4 ISO 9001 quality certificates/tn PPP$ GDP...
6.2.5 High-end & medium-high-tech manufacturing, % GDP...

### CREATIVE OUTPUTS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.6</td>
<td>87</td>
</tr>
</tbody>
</table>

7.1 Intangible assets...
7.1.1 Trademarks by origin/tn PPP$ GDP...
7.1.2 Brand value, top 500, % GDP...
7.1.3 Industrial designs by origin/tn PPP$ GDP...
7.1.4 ICTs & organizational model creation...
7.2 Creative goods and services...
7.2.1 Cultural & creative services exports, % total trade...
7.2.2 National feature films/tn pop. 15-66...
7.2.3 Music, sound/tn pop. 15-66...
7.2.4 Print and other media, % manufacturing...
7.2.5 Creative goods exports, % total trade...
7.3 Online creativity...
7.3.1 Generic top-level domains (TLDs)/tn pop. 15-69...
7.3.2 Country-code TLDs/tn pop. 15-69...
7.3.3 Wikipedia articles/tn pop. 15-69...
7.3.4 Mobile app creation/tn PPP$ GDP...

### NOTES

* indicates a strength; o 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 I for details, including the year of the data, at http://globalinnovationindex.org. Square brackets [ ] indicate that the data minimum coverage (MIC) 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

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

### Outdated data

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Country</th>
<th>Model</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.2</td>
<td>Firms offering formal training, %</td>
<td>2016</td>
<td>2018</td>
<td>World Bank</td>
</tr>
<tr>
<td>5.3.1</td>
<td>Intellectual property payments, % total trade</td>
<td>2017</td>
<td>2018</td>
<td>World Trade Organization</td>
</tr>
<tr>
<td>5.3.3</td>
<td>ICT services imports, % total trade</td>
<td>2017</td>
<td>2018</td>
<td>World Trade Organization</td>
</tr>
<tr>
<td>6.3.1</td>
<td>Intellectual property receipts, % total trade</td>
<td>2017</td>
<td>2018</td>
<td>World Trade Organization</td>
</tr>
<tr>
<td>6.3.3</td>
<td>ICT services exports, % total trade</td>
<td>2017</td>
<td>2018</td>
<td>World Trade Organization</td>
</tr>
</tbody>
</table>
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 13th 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.

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.