UZBEKISTAN

86th  Uzbekistan ranks 86th among the 132 economies featured in the GII 2021.

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 Uzbekistan 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 Uzbekistan in the GII 2021 is between ranks 84 and 90.

### Rankings for Uzbekistan (2019–2021)

<table>
<thead>
<tr>
<th></th>
<th>GII</th>
<th>Innovation inputs</th>
<th>Innovation outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>86</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>2020</td>
<td>93</td>
<td>81</td>
<td>118</td>
</tr>
</tbody>
</table>

- Uzbekistan performs better in innovation inputs than innovation outputs in 2021.
- This year Uzbekistan ranks 75th in innovation inputs, higher than last year.
- As for innovation outputs, Uzbekistan ranks 100th. This position is higher than last year.

10th  Uzbekistan ranks 10th among the 34 lower middle-income group economies.

4th  Uzbekistan ranks 4th among the 10 economies in Central and Southern Asia.
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, Uzbekistan’s performance is at 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.

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

**Innovation input to output performance**
BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND CENTRAL AND SOUTHERN ASIA

The seven GII pillar scores for Uzbekistan

Lower middle-income group economies

Uzbekistan performs above the lower middle-income group average in five pillars, namely: Institutions; Human capital and research; Infrastructure; Market sophistication; and, Knowledge and technology outputs.

Central and Southern Asia

Uzbekistan performs above the regional average in four pillars, namely: Institutions; Human capital and research; Infrastructure; and, Market sophistication.
OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Uzbekistan performs best in Market sophistication and its weakest performance is in Business sophistication.

The seven GII pillar ranks for Uzbekistan

Market sophistication - 24
Infrastructure - 72
Human capital and research - 72
Knowledge and technology outputs - 77
Global Innovation Index 2021 - 86
Institutions - 94
Creative outputs - 113
Business sophistication - 123

Note: The highest possible ranking in each pillar is one.
The table below gives an overview of the strengths and weaknesses of Uzbekistan in the GII 2021.

### Strengths and weaknesses for Uzbekistan

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.1</td>
<td>Ease of starting a business</td>
<td>8</td>
<td>1.2.1</td>
<td>Regulatory quality</td>
<td>126</td>
</tr>
<tr>
<td>2.1.1</td>
<td>Expenditure on education, % GDP</td>
<td>28</td>
<td>2.2.3</td>
<td>Tertiary inbound mobility, %</td>
<td>105</td>
</tr>
<tr>
<td>2.1.5</td>
<td>Pupil-teacher ratio, secondary</td>
<td>37</td>
<td>2.3.3</td>
<td>Global corporate R&amp;D investors, top 3, mn US$</td>
<td>41</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Graduates in science and engineering, %</td>
<td>7</td>
<td>2.3.4</td>
<td>QS university ranking, top 3</td>
<td>74</td>
</tr>
<tr>
<td>3.1.3</td>
<td>Government’s online service</td>
<td>46</td>
<td>4.1.3</td>
<td>Microfinance gross loans, % GDP</td>
<td>80</td>
</tr>
<tr>
<td>3.2</td>
<td>General infrastructure</td>
<td>37</td>
<td>5.2.3</td>
<td>GERD financed by abroad, % GDP</td>
<td>97</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Gross capital formation, % GDP</td>
<td>7</td>
<td>6.1.2</td>
<td>PCT patents by origin/bn PPP$ GDP</td>
<td>98</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Ease of protecting minority investors</td>
<td>36</td>
<td>6.1.4</td>
<td>Scientific and technical articles/bn PPP$ GDP</td>
<td>125</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Domestic industry diversification</td>
<td>22</td>
<td>7.3.1</td>
<td>Generic top-level domains (TLDs)/th pop. 15–69</td>
<td>131</td>
</tr>
<tr>
<td>6.1.3</td>
<td>Utility models by origin/bn PPP$ GDP</td>
<td>22</td>
<td>7.3.4</td>
<td>Mobile app creation/bn PPP$ GDP</td>
<td>99</td>
</tr>
<tr>
<td>6.2</td>
<td>Knowledge impact</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2.1</td>
<td>Labor productivity growth, %</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Uzbekistan

### GII 2021 Rank

<table>
<thead>
<tr>
<th>Output rank</th>
<th>Input rank</th>
<th>Income</th>
<th>Region</th>
<th>Population (mn)</th>
<th>GDP, PPP$ (bn)</th>
<th>GDP per capita, PPP$</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>75</td>
<td>Lower middle</td>
<td>CSA</td>
<td>33.5</td>
<td>250.2</td>
<td>7,378</td>
</tr>
</tbody>
</table>

### Institutions

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
<th>Score/Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.8 94</td>
<td>14.8 [123]</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

#### 1.3 Business environment

1.3.1 Ease of starting a business
1.3.2 Ease of resolving insolvency

#### 2.3.1 Researchers, FTE/mn pop.

#### 2.3.2 Gross expenditure on R&D, % GDP

#### 2.3.3 ISO 14001 environmental certificates/bn PPP$ GDP

#### 2.3.4 QS university ranking, top 3*

#### 2.3.5 Research talent, % in businesses

#### 2.3.6 Patent families/bn PPP$ GDP

### Business sophistication

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
<th>Score/Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.8 [93]</td>
<td>19.0 98</td>
</tr>
</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 w/advanced degrees, %

#### 5.2 Innovation linkages

5.2.1 University-industry R&D collaboration
5.2.2 State of cluster development and depth
5.2.3 GERD financed by abroad, % GDP
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP
5.2.5 Patent families/bn PPP$ GDP

### Knowledge and technology outputs

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.6 77</td>
</tr>
</tbody>
</table>

#### 6.1 Knowledge creation

6.1.1 Patents by origin/bn PPP$ GDP
6.1.2 PCT patents by origin/bn PPP$ GDP
6.1.3 Utility models by origin/bn PPP$ GDP
6.1.4 Scientific and technical articles/bn PPP$ GDP
6.1.5 Citable documents H-index

#### 6.2 Knowledge impact

6.2.1 Labor productivity growth, %
6.2.2 New businesses/th pop. 15–64
6.2.3 Software spending, % GDP
6.2.4 ISO 9001 quality certificates/bn PPP$ GDP
6.2.5 High-tech manufacturing, %

### Creative outputs

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.3 113</td>
</tr>
</tbody>
</table>

#### 7.1 Intangible assets

7.1.1 Trademarks by origin/bn PPP$ GDP
7.1.2 Global brand value, top 5,000, % GDP
7.1.3 Industrial designs by origin/bn PPP$ GDP
7.1.4 ICTs and organizational model creation

#### 7.2 Creative goods and services

7.2.1 Cultural and creative services exports, % total trade
7.2.2 National feature films/mn pop. 15–69
7.2.3 Entertainment and media market/th pop. 15–69
7.2.4 Printing and other media, % manufacturing
7.2.5 Creative goods exports, % total trade

#### 7.3 Online creativity

7.3.1 Generic top-level domains (TLDs)/th pop. 15–69
7.3.2 Country-code TLDs/th pop. 15–69
7.3.3 Wikipedia edits/mn pop. 15–69
7.3.4 Mobile app creation/bn PPP$ GDP

### Human capital and research

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.4 72</td>
</tr>
</tbody>
</table>

#### 2.1 Education

2.1.1 Expenditure on education, % GDP
2.1.2 Government funding/pupil, secondary, % GDP/cap
2.1.3 School life expectancy, years
2.1.4 PISA scales in reading, maths and science
2.1.5 Pupil-teacher ratio, secondary

#### 2.2 Tertiary education

2.2.1 Tertiary enrolment, % gross
2.2.2 Graduates in science and engineering, %
2.2.3 Tertiary inbound mobility, %

#### 4.2.3 Venture capital investors, deals/bn PPP$ GDP

#### 4.2.2 Market capitalization, % GDP

### Infrastructure

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.4 72</td>
</tr>
</tbody>
</table>

#### 3.1 Information and 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
3.1.5 ICT services imports, % total trade

#### 3.2 General infrastructure

3.2.1 Electricity output, GWh/mn pop.
3.2.2 Logistics performance*
3.2.3 Tertiary inbound mobility, %

#### 6.1.1 Patents by origin/bn PPP$ GDP

#### 6.1.2 PCT patents by origin/bn PPP$ GDP

#### 6.1.3 Utility models by origin/bn PPP$ GDP

#### 6.1.4 Scientific and technical articles/bn PPP$ GDP

#### 6.1.5 Citable documents H-index

### Creative outputs

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
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<td>12.3 113</td>
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7.3.2 Country-code TLDs/th pop. 15–69
7.3.3 Wikipedia edits/mn pop. 15–69
7.3.4 Mobile app creation/bn PPP$ GDP

### Market sophistication

<table>
<thead>
<tr>
<th>Score/Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>56.9 24</td>
</tr>
</tbody>
</table>

#### 4.1 Ease of getting 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 investors, deals/bn PPP$ GDP
4.2.4 Venture capital recipients, deals/bn PPP$ GDP

### 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 IV 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 Uzbekistan.

### Missing data for Uzbekistan

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Economy year</th>
<th>Model year</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.2</td>
<td>Government funding/pupil, secondary, % GDP/cap</td>
<td>n/a</td>
<td>2017</td>
<td>UNESCO Institute for Statistics</td>
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<tr>
<td>2.1.4</td>
<td>PISA scales in reading, maths and science</td>
<td>n/a</td>
<td>2018</td>
<td>OECD Programme for International Student Assessment (PISA)</td>
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<tr>
<td>4.2.2</td>
<td>Market capitalization, % GDP</td>
<td>n/a</td>
<td>2019</td>
<td>World Federation of Exchanges</td>
</tr>
<tr>
<td>4.2.3</td>
<td>Venture capital investors, deals/bn PPP$ GDP</td>
<td>n/a</td>
<td>2020</td>
<td>Refinitiv Eikon</td>
</tr>
<tr>
<td>4.2.4</td>
<td>Venture capital recipients, deals/bn PPP$ GDP</td>
<td>n/a</td>
<td>2020</td>
<td>Refinitiv Eikon</td>
</tr>
<tr>
<td>5.1.1</td>
<td>Knowledge-intensive employment, %</td>
<td>n/a</td>
<td>2019</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>5.1.5</td>
<td>Females employed w/advanced degrees, %</td>
<td>n/a</td>
<td>2019</td>
<td>International Labour Organization</td>
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<tr>
<td>5.2.1</td>
<td>University-industry R&amp;D collaboration</td>
<td>n/a</td>
<td>2020</td>
<td>World Economic Forum</td>
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<tr>
<td>5.2.2</td>
<td>State of cluster development and depth</td>
<td>n/a</td>
<td>2020</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>6.2.3</td>
<td>Software spending, % GDP</td>
<td>n/a</td>
<td>2020</td>
<td>IHS Markit</td>
</tr>
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<td>7.1.2</td>
<td>Global brand value, top 5,000, % GDP</td>
<td>n/a</td>
<td>2020</td>
<td>Brand Finance</td>
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<td>7.1.4</td>
<td>ICTs and organizational model creation</td>
<td>n/a</td>
<td>2018</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>7.2.3</td>
<td>Entertainment and media market/th pop. 15–69</td>
<td>n/a</td>
<td>2020</td>
<td>PwC</td>
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</tbody>
</table>

### Outdated data for Uzbekistan

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Economy year</th>
<th>Model year</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3.1</td>
<td>Researchers, FTE/mn pop.</td>
<td>2018</td>
<td>2019</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
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<tr>
<td>Code</td>
<td>Indicator name</td>
<td>Economy year</td>
<td>Model year</td>
<td>Source</td>
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<tr>
<td>--------</td>
<td>---------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Gross expenditure on R&amp;D, % GDP</td>
<td>2018</td>
<td>2019</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Applied tariff rate, weighted avg., %</td>
<td>2015</td>
<td>2019</td>
<td>World Bank</td>
</tr>
<tr>
<td>5.1.3</td>
<td>GERD performed by business, % GDP</td>
<td>2018</td>
<td>2019</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
</tr>
<tr>
<td>5.3.5</td>
<td>Research talent, % in businesses</td>
<td>2018</td>
<td>2019</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
</tr>
</tbody>
</table>
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.

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.