

Global Innovation Index 2023

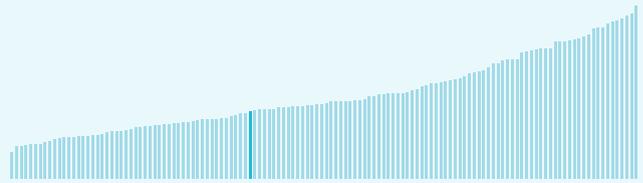


The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation.**

Uzbekistan ranking in the Global Innovation Index 2023

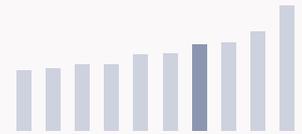
> Uzbekistan ranks **82nd** among the 132 economies featured in the GII 2023.



> Uzbekistan ranks **10th** among the 37 lower-middle-income group economies.



> Uzbekistan ranks **4th** among the 10 economies in Central and Southern Asia.



> Uzbekistan GII Ranking (2020-2023)

The table shows the rankings of Uzbekistan 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 Uzbekistan in the GII 2023 is between ranks 78 and 84.

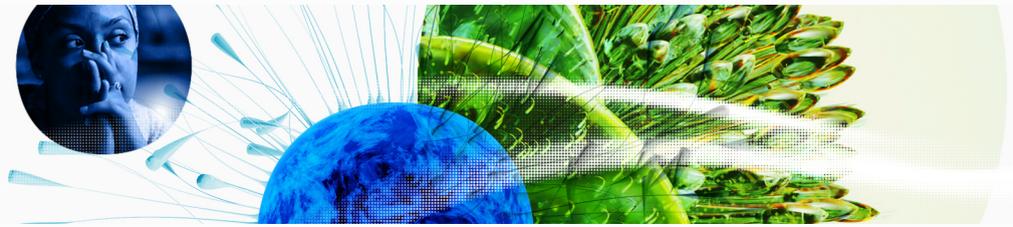
	GII Position	Innovation Inputs	Innovation Outputs
2020	93rd	81st	118th
2021	86th	75th	100th
2022	82nd	68th	91st
2023	82nd	72nd	88th

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

This year Uzbekistan ranks 72nd in innovation inputs. This position is lower than last year.

Uzbekistan ranks 88th in innovation outputs. This position is higher than last year.

Global Innovation Index 2023



→ Expected vs. observed innovation performance

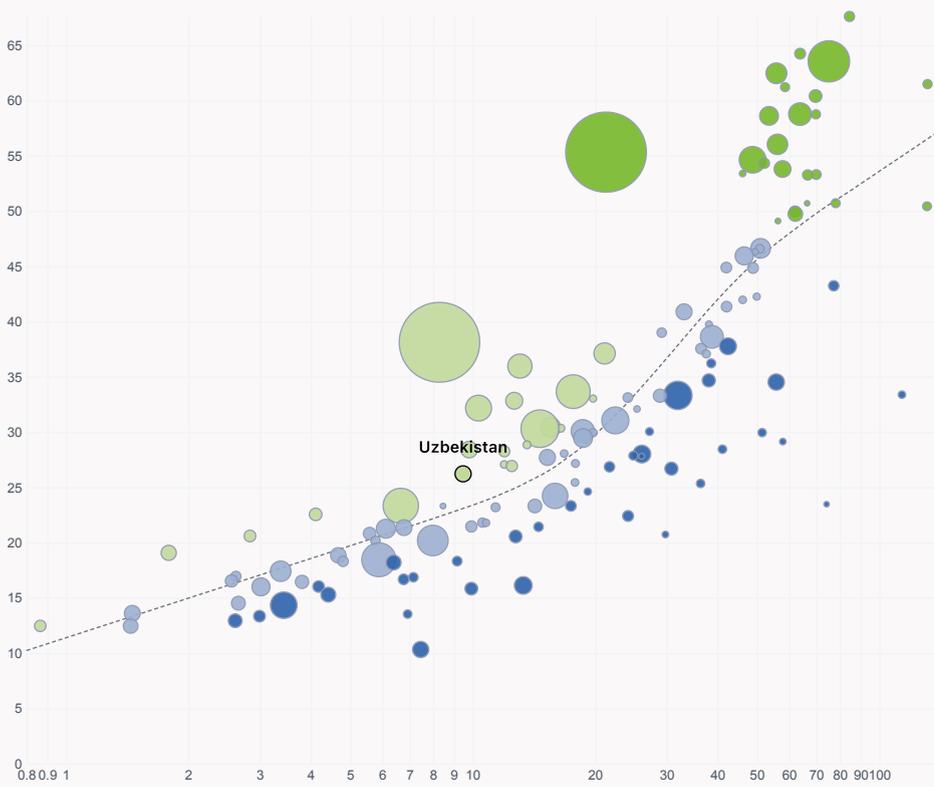
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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



> Relative to GDP, Uzbekistan is performing above expectations for its level of development.

> Innovation overperformers relative to their economic development

↑ GII Score



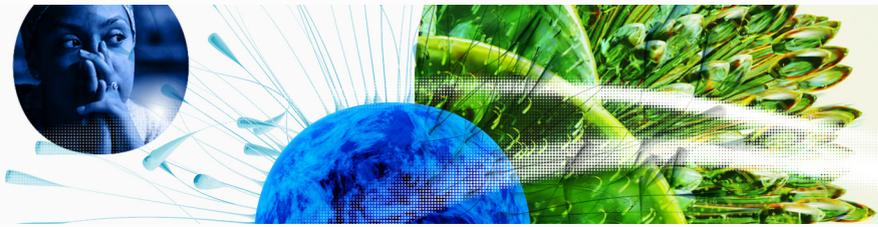
- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



→ GDP per capita, PPP logarithmic scale (thousands of \$)

Global Innovation Index 2023



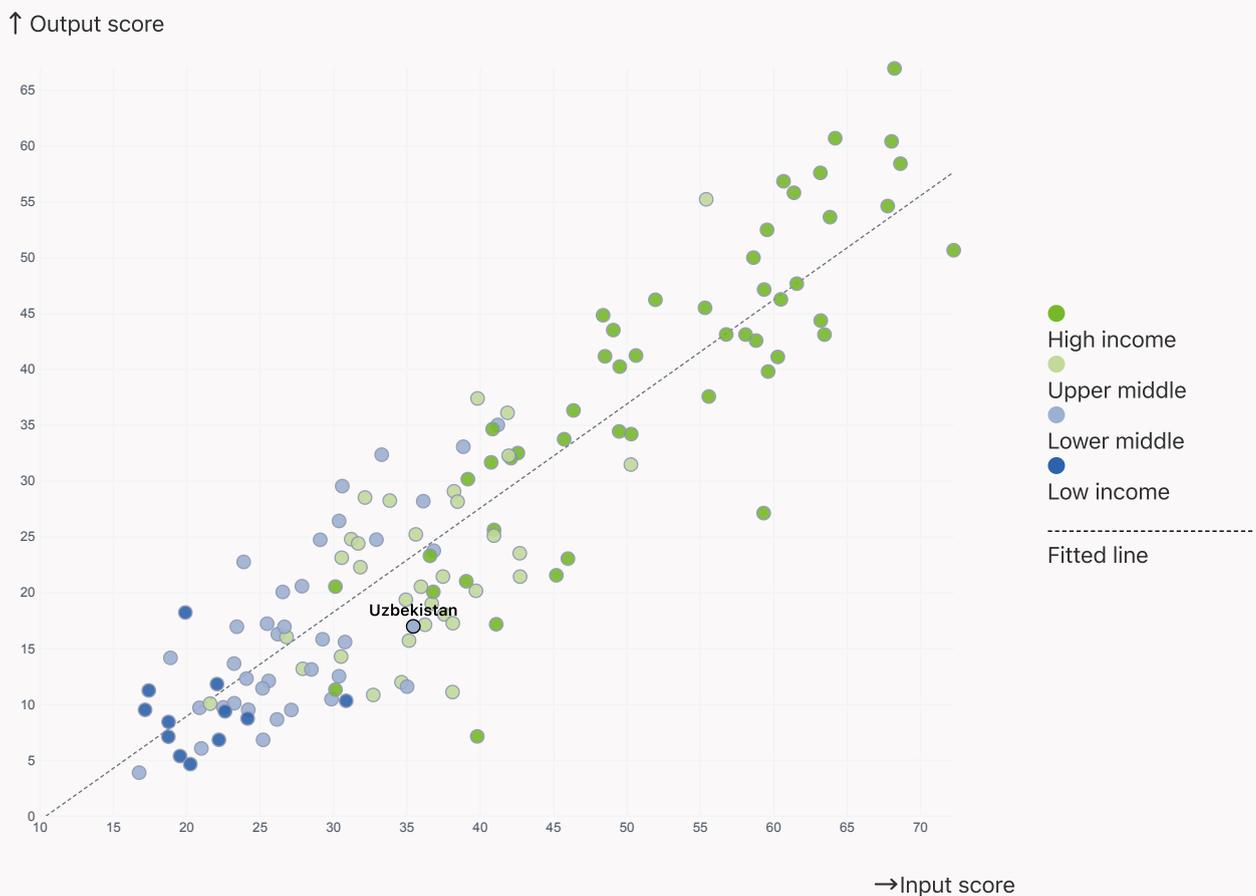
→ Effectively translating innovation investments into innovation outputs

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.



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

> Relationship between innovation inputs and outputs



Global Innovation Index 2023



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



> Highest rankings



Uzbekistan ranks highest in Institutions (55th), Market sophistication (69th), Infrastructure (73rd) and Business sophistication, Knowledge and technology outputs (78th).

> Lowest rankings



Uzbekistan ranks lowest in Creative outputs (93rd), Human capital and research (89th) and Business sophistication, Knowledge and technology outputs (78th).



The full WIPO Intellectual Property Statistics profile for Uzbekistan can be found on [this link](#).

Global Innovation Index 2023



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

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

> Lower-Middle-Income economies

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

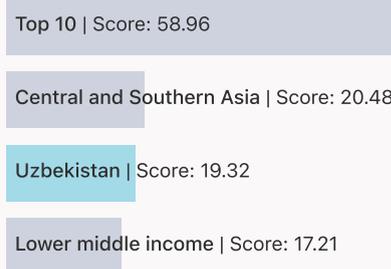


> Central And Southern Asia

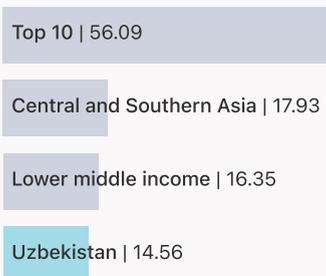
Uzbekistan performs above the regional average in Business sophistication, Market sophistication, Human capital and research, Infrastructure, Institutions.



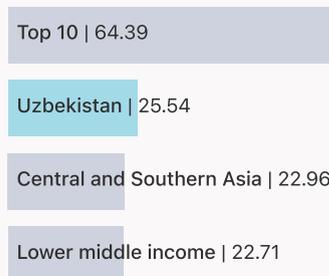
Knowledge and technology outputs



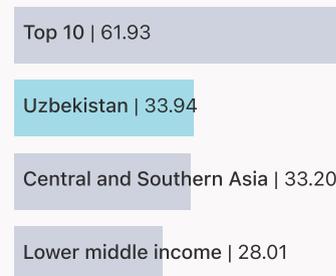
Creative outputs



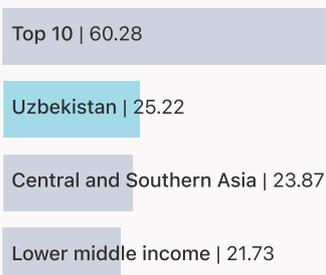
Business sophistication



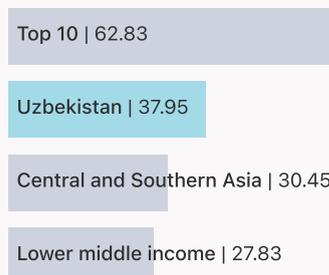
Market sophistication



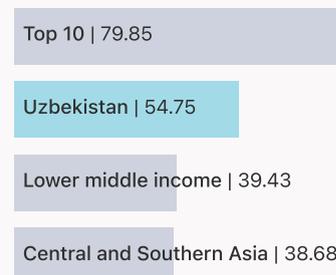
Human capital and research



Infrastructure



Institutions



Global Innovation Index 2023



→ Innovation strengths and weaknesses in Uzbekistan

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



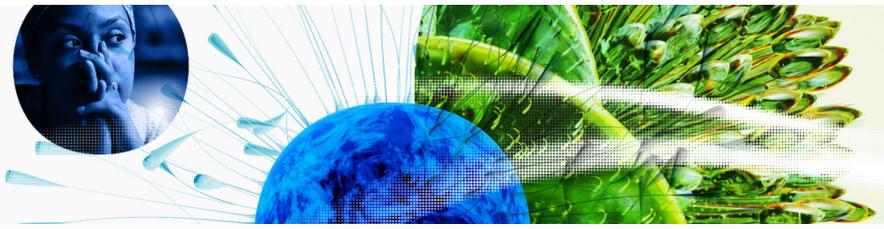
> Uzbekistan's main innovation strengths are **Gross capital formation, % GDP (rank 6)**, **Labor productivity growth, % (rank 6)** and **Graduates in science and engineering, % (rank 12)**.

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
6	3.2.3	Gross capital formation, % GDP	132	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69
6	6.2.1	Labor productivity growth, %	122	6.3.3	High-tech exports, % total trade
12	2.2.2	Graduates in science and engineering, %	117	6.1.4	Scientific and technical articles/bn PPP\$ GDP
17	6.1.3	Utility models by origin/bn PPP\$ GDP	95	5.2.5	Patent families/bn PPP\$ GDP
23	1.3.1	Policies for doing business	92	5.2.3	GERD financed by abroad, % GDP
27	5.3.2	High-tech imports, % total trade	88	5.1.2	Firms offering formal training, %
28	2.1.5	Pupil-teacher ratio, secondary	73	7.2.2	National feature films/mn pop. 15-69
29	5.2.2	State of cluster development	71	2.3.4	QS university ranking, top 3
32	5.2.1	University-industry R&D collaboration	48	6.2.2	Unicorn valuation, % GDP
41	5.3.4	FDI net inflows, % GDP	40	2.3.3	Global corporate R&D investors, top 3, mn US\$

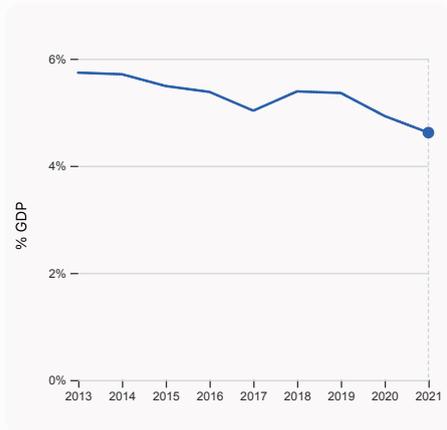
Global Innovation Index 2023



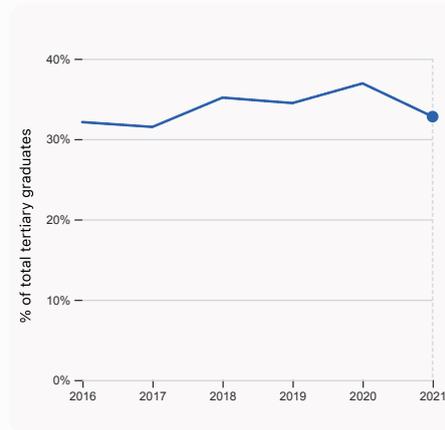
→ Uzbekistan's innovation system

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

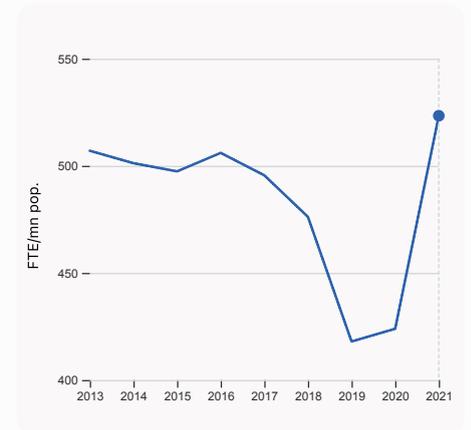
> Innovation inputs in Uzbekistan



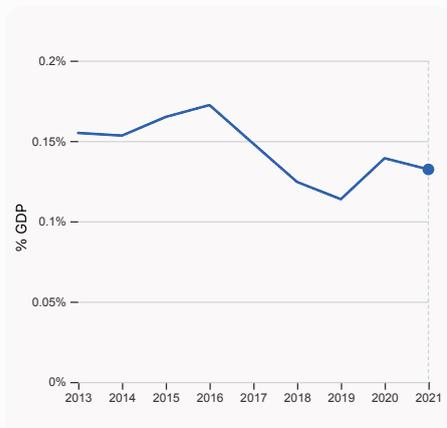
2.1.1 Expenditure on education, % GDP
was equal to 4.62% GDP in 2021, down by 0.31 percentage points from the year prior – and equivalent to an indicator rank of 52.



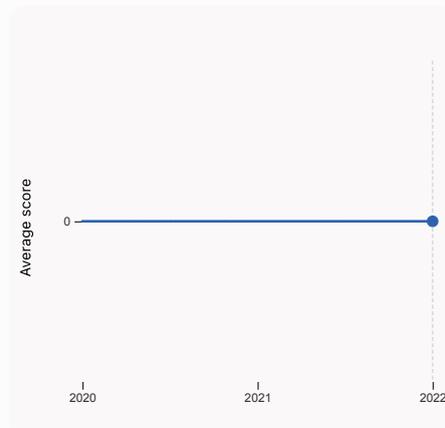
2.2.2 Graduates in science and engineering, %
was equal to 32.79% of total tertiary graduates in 2021, down by 4.14 percentage points from the year prior – and equivalent to an indicator rank of 12.



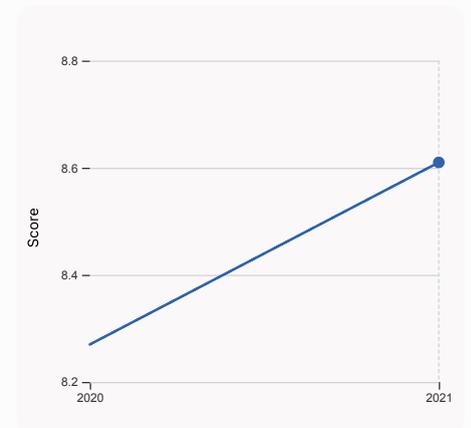
2.3.1 Researchers, FTE/mn pop.
was equal to 523.38 FTE/mn pop. in 2021, up by 23.46% from the year prior – and equivalent to an indicator rank of 69.



2.3.2 Gross expenditure on R&D, % GDP
was equal to 0.132% GDP in 2021, down by 0.007 percentage points from the year prior – and equivalent to an indicator rank of 99.

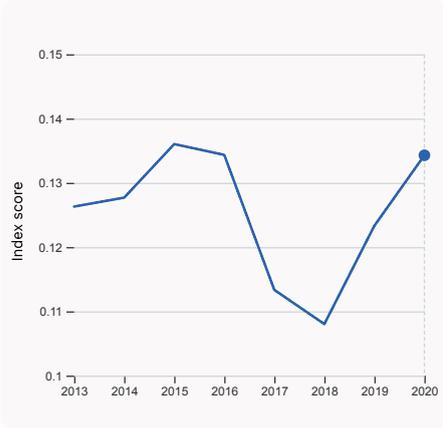
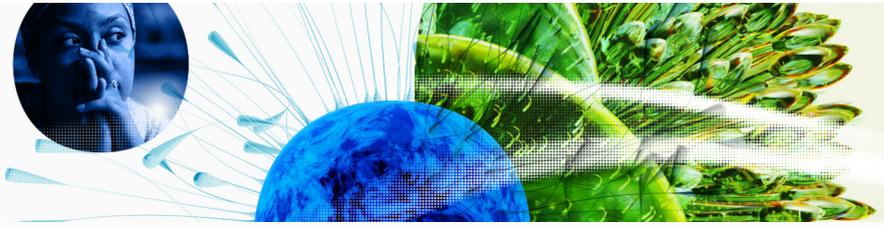


2.3.4 QS university ranking, top 3
was equal to an average score of 0 for the top 3 universities in 2022, equivalent to an indicator rank of 71.



3.1.1 ICT access
was equal to a score of 8.61 in 2021, up by 4.11% from the year prior – and equivalent to an indicator rank of 75.

Global Innovation Index 2023



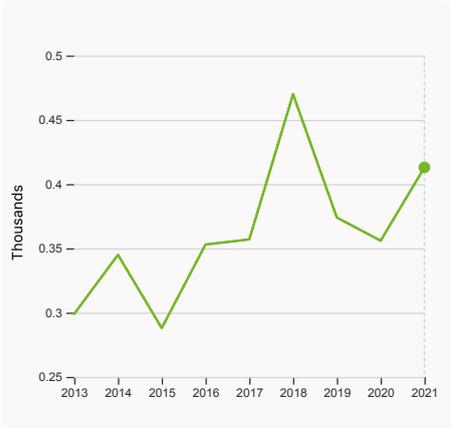
4.3.2 Domestic industry diversification

was equal to an index score of 0.134 in 2020, up by 8.89% from the year prior – and equivalent to an indicator rank of 42.

Global Innovation Index 2023

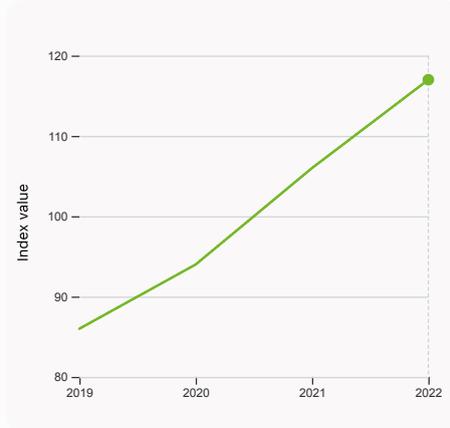


> Innovation outputs in Uzbekistan



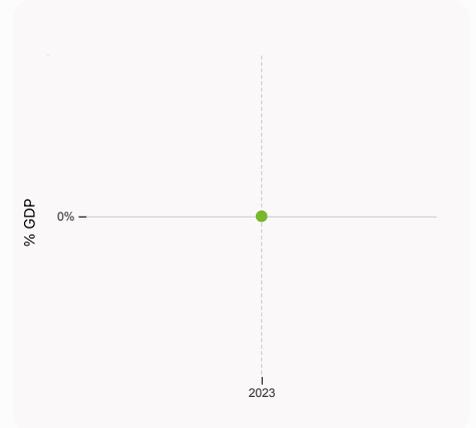
6.1.1 Patents by origin

was equal to 0.41 Thousands in 2021, up by 16.011% from the year prior – and equivalent to an indicator rank of 47.



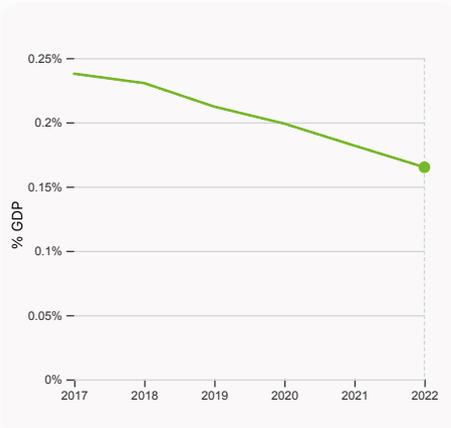
6.1.5 Citable documents H-index

was equal to an index value of 117 in 2022, up by 10.38% from the year prior – and equivalent to an indicator rank of 115.



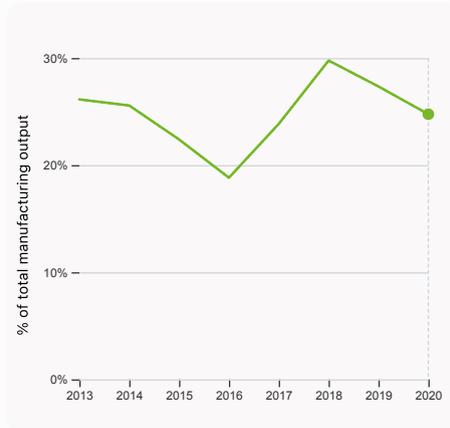
6.2.2 Unicorn valuation, % GDP

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



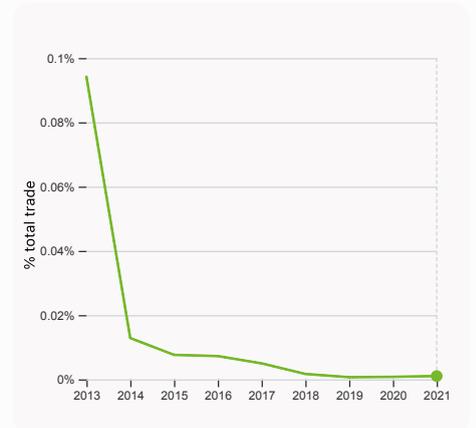
6.2.3 Software spending, % GDP

was equal to 0.165% GDP in 2022, down by 0.017 percentage points from the year prior – and equivalent to an indicator rank of 80.



6.2.4 High-tech manufacturing, %

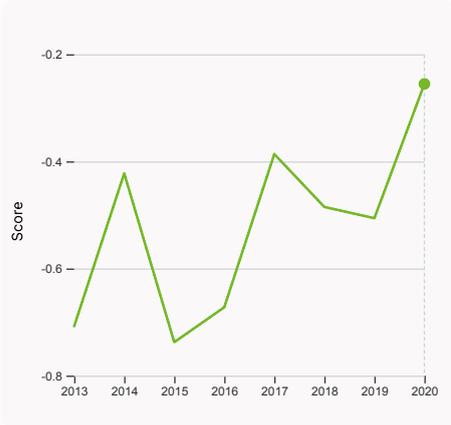
was equal to 24.76% of total manufacturing output in 2020, down by 2.59 percentage points from the year prior – and equivalent to an indicator rank of 51.



6.3.1 Intellectual property receipts, % total trade

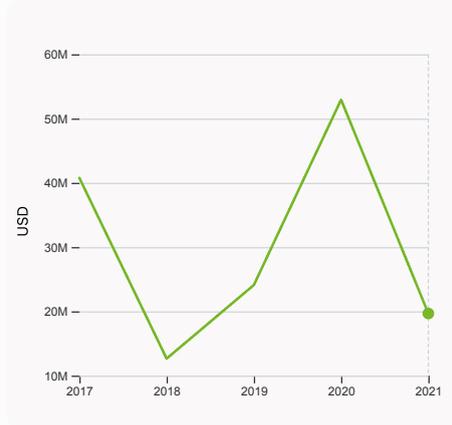
was equal to 0.001% total trade in 2021, up by 0.00025 percentage points from the year prior – and equivalent to an indicator rank of 104.

Global Innovation Index 2023



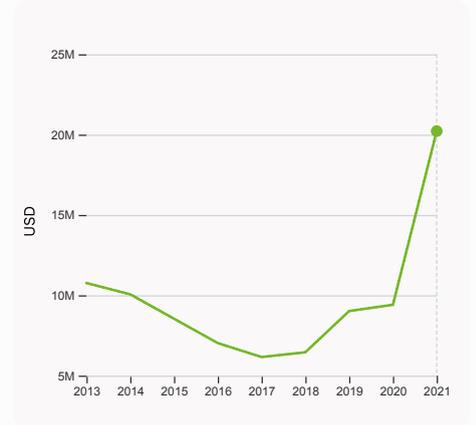
6.3.2 Production and export complexity

was equal to a score of -0.255 in 2020, up by 49.56% from the year prior – and equivalent to an indicator rank of 77.



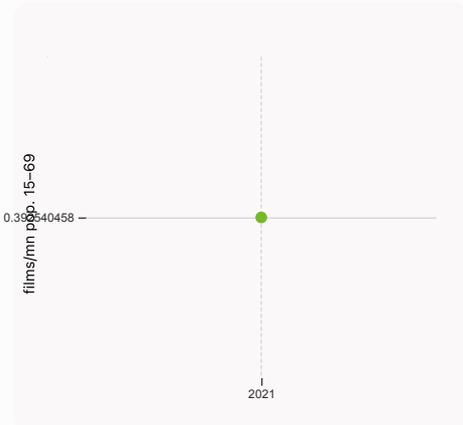
6.3.3 High-tech exports

was equal to 19,668,992 USD in 2021, down by 62.84% from the year prior – and equivalent to an indicator rank of 122.



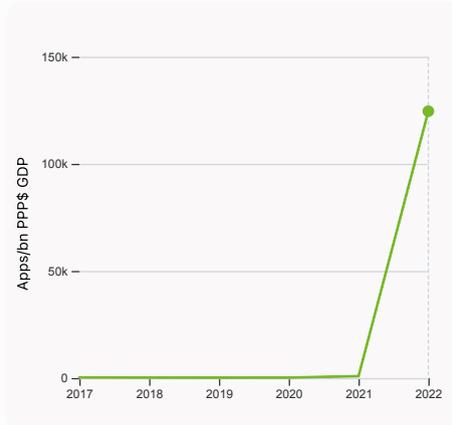
7.2.1 Cultural and creative services exports

was equal to 20,219,000 USD in 2021, up by 114.89% from the year prior – and equivalent to an indicator rank of 88.



7.2.2 National feature films/mn pop. 15-69

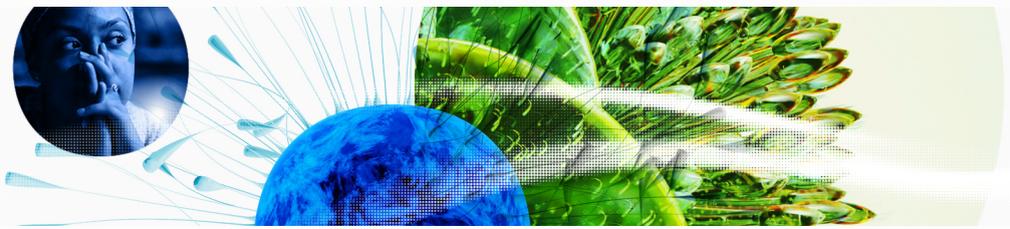
was equal to 0.393 films/mn pop. 15-69 in 2021 – and equivalent to an indicator rank of 73.



7.3.4 Mobile app creation/bn PPP\$ GDP

was equal to 124,596.4 Apps/bn PPP\$ GDP in 2022, up by 13650.84% from the year prior – and equivalent to an indicator rank of 79.

Global Innovation Index 2023



GII 2023 rank

82

Uzbekistan

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
88	72	Lower middle	CSA	34.6	334.3	9,478.5

Score / Value Rank

Score / Value Rank

Institutions				54.7	55			Business sophistication				25.5	78		
1.1 Institutional environment				40.0	76	5.1 Knowledge workers				23.3	87				
1.1.1 Operational stability for businesses*				48.6	74	5.1.1 Knowledge-intensive employment, %				n/a	n/a				
1.1.2 Government effectiveness*				31.3	84	5.1.2 Firms offering formal training, %				16.9	88	○ ◇			
1.2 Regulatory environment				51.0	97	5.1.3 GERD performed by business, % GDP				1	0.1	69			
1.2.1 Regulatory quality*				27.0	104	5.1.4 GERD financed by business, %				1	42.4	40	◆		
1.2.2 Rule of law*				13.8	115	5.1.5 Females employed w/advanced degrees, %				1	8.1	84			
1.2.3 Cost of redundancy dismissal				17.3	73	5.2 Innovation linkages				26.3	51	◆			
1.3 Business environment				73.3	[19]	5.2.1 University-industry R&D collaboration+				1	62.4	32	◆		
1.3.1 Policies for doing business*				1	73.3	23	◆ ◆	5.2.2 State of cluster development*				1	66.1	29	◆ ◆
1.3.2 Entrepreneurship policies and culture*				n/a	n/a	5.2.3 GERD financed by abroad, % GDP				1	0.0	92	○		
Human capital and research				25.2	89	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP				0.0	96				
2.1 Education				46.4	78	5.2.5 Patent families/bn PPP\$ GDP				0.0	95	○ ◇			
2.1.1 Expenditure on education, % GDP				4.6	52	5.3 Knowledge absorption				27.0	92				
2.1.2 Government funding/pupil, secondary, % GDP/cap				13.9	79	5.3.1 Intellectual property payments, % total trade				0.5	75				
2.1.3 School life expectancy, years				12.1	93	5.3.2 High-tech imports, % total trade				10.9	27	◆ ◆			
2.1.4 PISA scales in reading, maths and science				n/a	n/a	5.3.3 ICT services imports, % total trade				0.6	101				
2.1.5 Pupil-teacher ratio, secondary				9.8	28	◆ ◆	5.3.4 FDI net inflows, % GDP				3.3	41	◆ ◆		
2.2 Tertiary education				27.4	74	5.3.5 Research talent, % in businesses				1	12.9	57			
2.2.1 Tertiary enrolment, % gross				21.2	99	Knowledge and technology outputs				19.3	78				
2.2.2 Graduates in science and engineering, %				32.8	12	◆ ◆	6.1 Knowledge creation				12.4	72			
2.2.3 Tertiary inbound mobility, %				0.7	97	6.1.1 Patents by origin/bn PPP\$ GDP				1.4	47				
2.3 Research and development (R&D)				1.9	92	6.1.2 PCT patents by origin/bn PPP\$ GDP				0.0	99				
2.3.1 Researchers, FTE/mn pop.				523.4	69	6.1.3 Utility models by origin/bn PPP\$ GDP				1.3	17	◆ ◆			
2.3.2 Gross expenditure on R&D, % GDP				0.1	99	6.1.4 Scientific and technical articles/bn PPP\$ GDP				n/a	n/a				
2.3.3 Global corporate R&D investors, top 3, mn US\$				0.0	40	○ ◇	6.1.5 Citable documents H-index				4.1	115			
2.3.4 QS university ranking, top 3*				0.0	71	○ ◇	6.2 Knowledge impact				33.9	44			
Infrastructure				37.9	73	◆	6.2.1 Labor productivity growth, %				5.0	6	◆ ◆		
3.1 Information and communication technologies (ICTs)				71.4	63	◆	6.2.2 Unicorn valuation, % GDP				0.0	48	○ ◇		
3.1.1 ICT access*				79.1	75	◆	6.2.3 Software spending, % GDP				0.2	80			
3.1.2 ICT use*				74.5	63	◆	6.2.4 High-tech manufacturing, %				24.8	51			
3.1.3 Government's online service*				71.7	57	◆	6.3 Knowledge diffusion				11.6	100			
3.1.4 E-participation*				60.5	55	◆	6.3.1 Intellectual property receipts, % total trade				0.0	104			
3.2 General infrastructure				27.3	62	6.3.2 Production and export complexity				47.2	77				
3.2.1 Electricity output, GWh/mn pop.				1	1,942.6	83	6.3.3 High-tech exports, % total trade				0.1	122	○		
3.2.2 Logistics performance*				22.7	82	6.3.4 ICT services exports, % total trade				0.8	92				
3.2.3 Gross capital formation, % GDP				42.1	6	◆ ◆	6.3.5 ISO 9001 quality/bn PPP\$ GDP				1.2	103			
3.3 Ecological sustainability				15.1	102	Creative outputs				14.6	93				
3.3.1 GDP/unit of energy use				5.8	110	◇	7.1 Intangible assets				19.5	[86]			
3.3.2 Environmental performance*				32.7	79	7.1.1 Intangible asset intensity, top 15, %				n/a	n/a				
3.3.3 ISO 14001 environment/bn PPP\$ GDP				0.3	99	7.1.2 Trademarks by origin/bn PPP\$ GDP				35.3	65				
Market sophistication				33.9	69	7.1.3 Global brand value, top 5,000				n/a	n/a				
4.1 Credit				7.0	121	○	7.1.4 Industrial designs by origin/bn PPP\$ GDP				0.8	77			
4.1.1 Finance for startups and scaleups*				n/a	n/a	7.2 Creative goods and services				3.0	96				
4.1.2 Domestic credit to private sector, % GDP				35.7	90	7.2.1 Cultural and creative services exports, % total trade				0.1	88				
4.1.3 Loans from microfinance institutions, % GDP				0.2	49	7.2.2 National feature films/mn pop. 15-69				0.4	73	○			
4.2 Investment				n/a	[n/a]	7.2.3 Entertainment and media market/th pop. 15-69				3.2	49	◆			
4.2.1 Market capitalization, % GDP				n/a	n/a	7.2.4 Creative goods exports, % total trade				0.4	64				
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP				n/a	n/a	7.3 Online creativity				16.2	90				
4.2.3 VC recipients, deals/bn PPP\$ GDP				n/a	n/a	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69				0.0	132	○ ◇			
4.2.4 VC received, value, % GDP				n/a	n/a	7.3.2 Country-code TLDs/th pop. 15-69				1.4	78				
4.3 Trade, diversification, and market scale				60.8	51	7.3.3 GitHub commits/mn pop. 15-69				2.6	94				
4.3.1 Applied tariff rate, weighted avg., %				2.6	68	◆	7.3.4 Mobile app creation/bn PPP\$ GDP				60.8	79			
4.3.2 Domestic industry diversification				92.4	42										
4.3.3 Domestic market scale, bn PPP\$				334.3	56										

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.



→ Data availability

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



> Uzbekistan has missing data for ten indicators and outdated data for nine indicators.

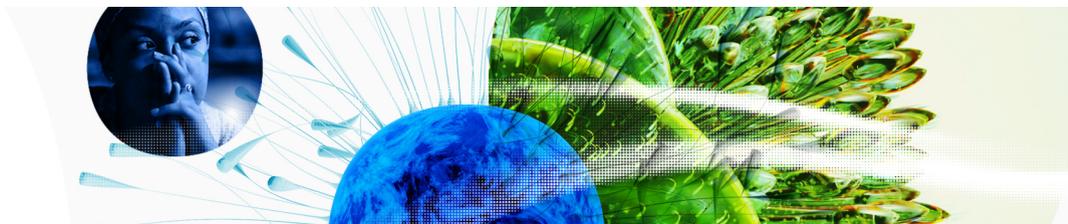
> Missing data for Uzbekistan

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges; World Bank
4.2.2	Venture capital (VC) investors, deals/bn PPP\$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.3	VC recipients, deals/bn PPP\$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % GDP	n/a	2022	Refinitiv; International Monetary Fund
5.1.1	Knowledge-intensive employment, %	n/a	2022	International Labour Organization
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.1.3	Global brand value, top 5,000	n/a	2023	Brand Finance; International Monetary Fund

> Outdated data for Uzbekistan

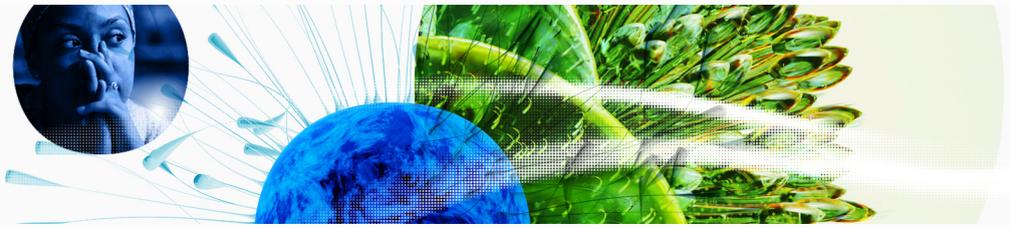
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
5.1.3	GERD performed by business, % GDP	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2023



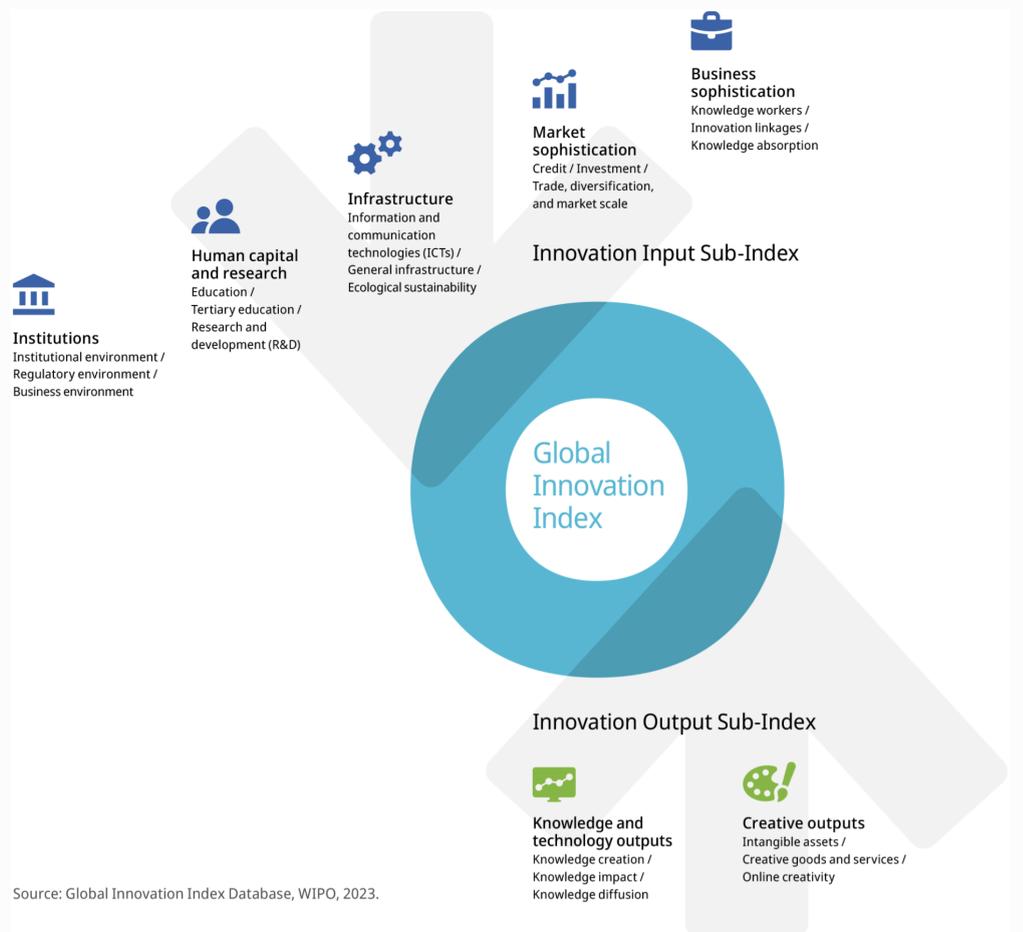
Code	Indicator name	Economy Year	Model Year	Source
5.1.5	Females employed w/advanced degrees, %	2020	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	GERD financed by abroad, % GDP	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2023



→ 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.



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.