Global Innovation Index 2021

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)

	GII	Innovation inputs	Innovation outputs
2021	86	75	100
2020	93	81	118
2019			

- 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.

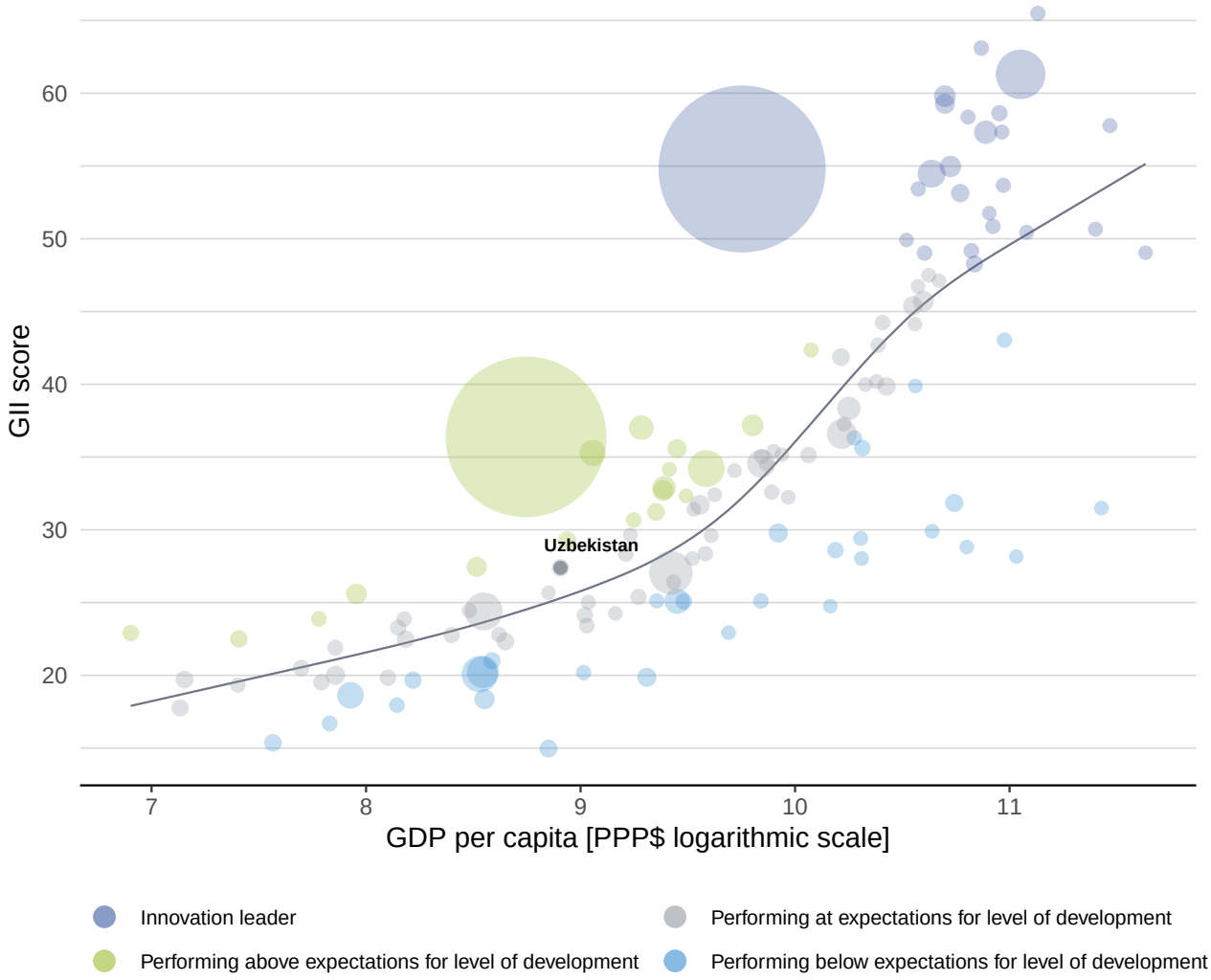
4th Uzbekistan ranks 4th among the 10 economies in Central and Southern Asia.

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.

The positive relationship between innovation and development

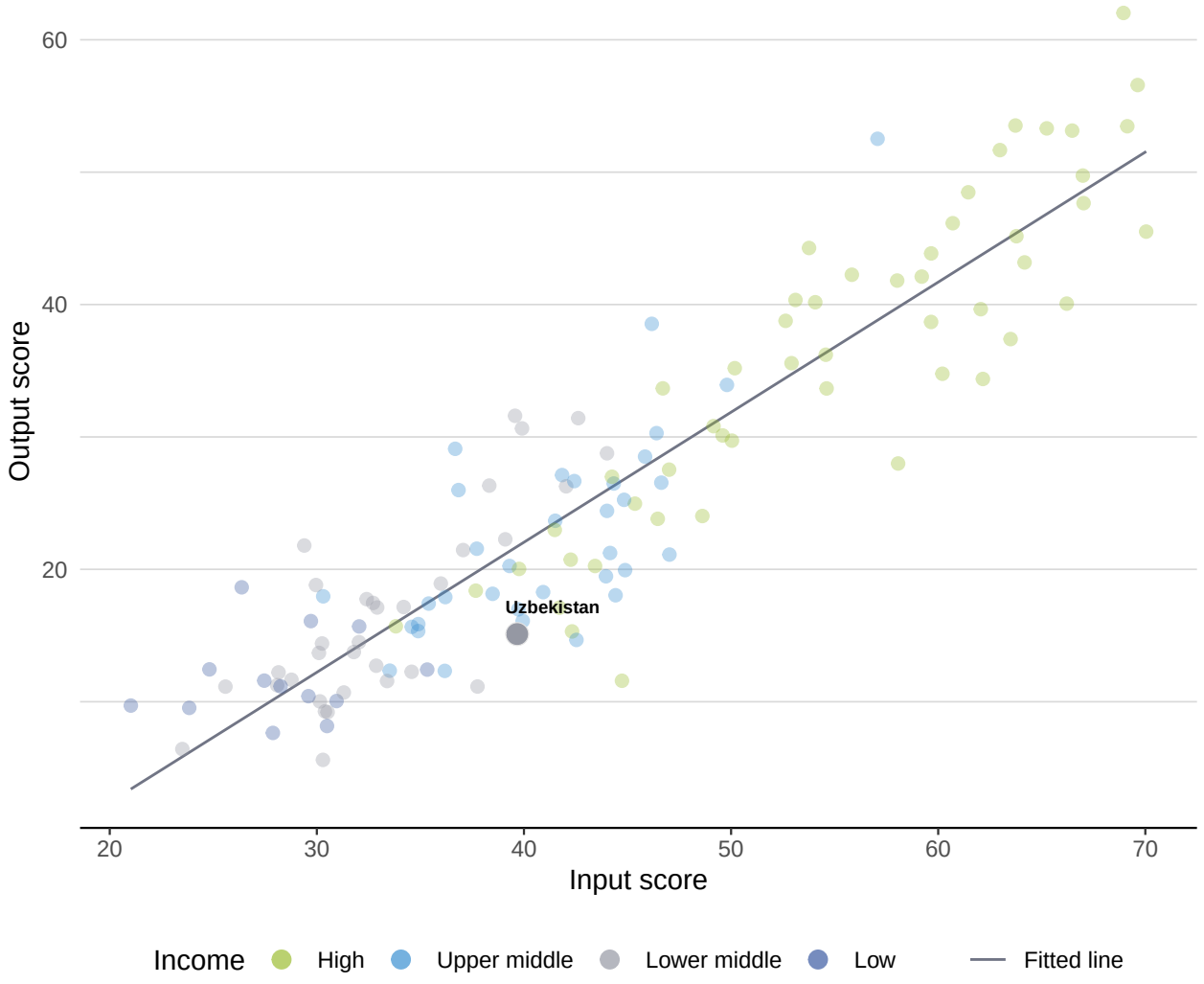


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

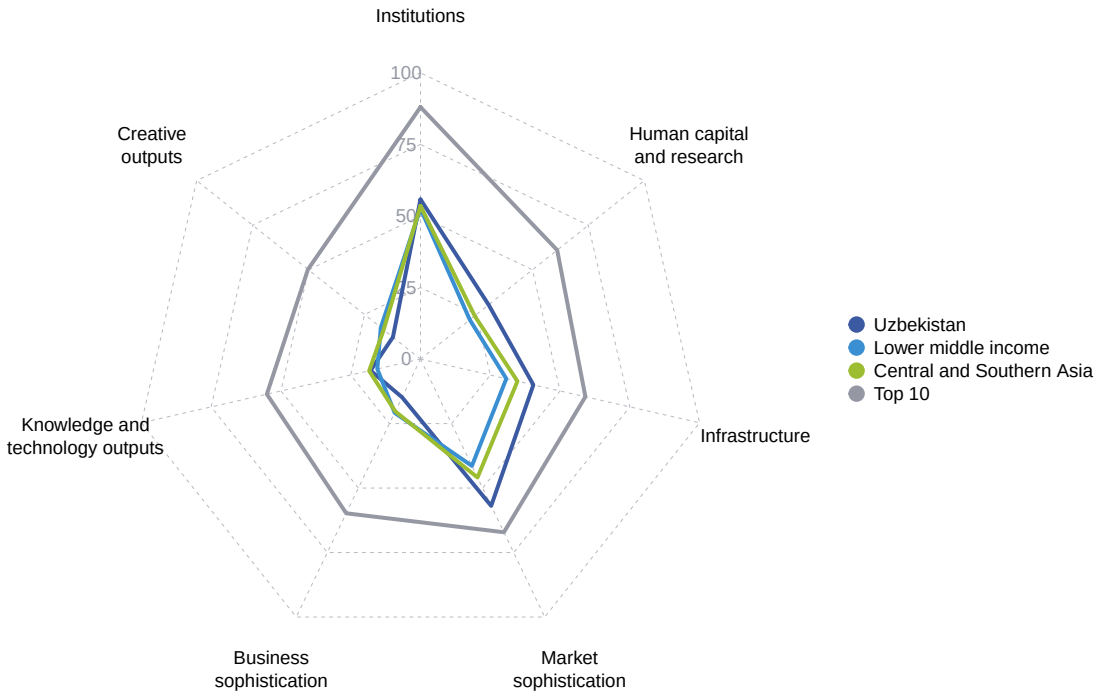
Uzbekistan produces less innovation outputs relative to its level of innovation investments.

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.

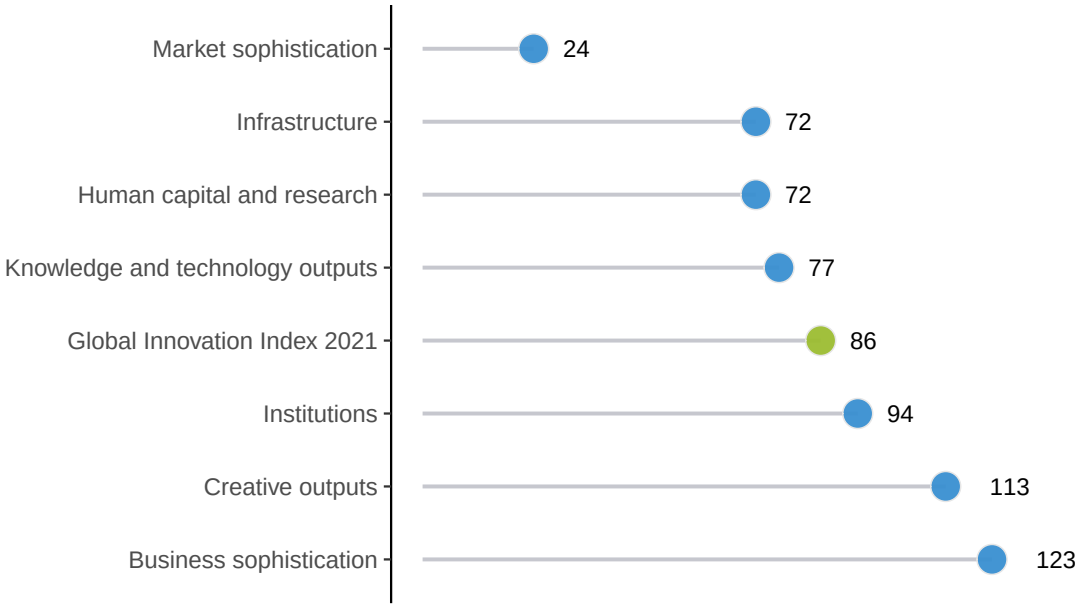
Central and Southern Asia

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



Note: The highest possible ranking in each pillar is one.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Uzbekistan in the GII 2021.

Strengths and weaknesses for Uzbekistan

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

Uzbekistan

GII 2021 rank
86

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
100	75	Lower middle	CSA	33.5	250.2	7,378	93

		Score/ Value	Rank	
Institutions		**55.8**	**94**	
1.1	**Political environment**	**47.6**	**95**	
1.1.1	Political and operational stability*	64.3	80	
1.1.2	Government effectiveness*	39.2	99	
1.2	**Regulatory environment**	**49.9**	**107**	
1.2.1	Regulatory quality*	17.5	126 ○	◇
1.2.2	Rule of law*	19.1	123	◇
1.2.3	Cost of redundancy dismissal	17.3	69	
1.3	**Business environment**	**69.8**	**72**	
1.3.1	Ease of starting a business*	96.2	8 ●	◆
1.3.2	Ease of resolving insolvency*	43.5	90	
Human capital and research		**30.4**	**72**	◆
2.1	**Education**	**57.3**	**[42]**	
2.1.1	Expenditure on education, % GDP	5.3	28 ●	
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years	12.5	87	
2.1.4	PISA scales in reading, maths and science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary	10.9	37 ●	◆
2.2	**Tertiary education**	**32.0**	**68**	
2.2.1	Tertiary enrolment, % gross	12.6	108	
2.2.2	Graduates in science and engineering, %	34.5	7 ●	◆
2.2.3	Tertiary inbound mobility, %	0.2	105 ○	
2.3	**Research and development (R&D)**	**2.0**	**95**	
2.3.1	Researchers, FTE/mn pop. ◴	476.2	69	
2.3.2	Gross expenditure on R&D, % GDP ◴	0.1	99	
2.3.3	Global corporate R&D investors, top 3, mn US$	0.0	41 ○	◇
2.3.4	QS university ranking, top 3*	0.0	74 ○	◇
Infrastructure		**40.4**	**72**	◆
3.1	**Information and communication technologies (ICTs)**	**66.9**	**65**	◆
3.1.1	ICT access*	60.1	76	◆
3.1.2	ICT use*	48.3	84	
3.1.3	Government's online service*	78.2	46 ●	◆
3.1.4	E-participation*	81.0	46	◆
3.2	**General infrastructure**	**35.7**	**37 ●**	◆
3.2.1	Electricity output, GWh/mn pop.	1,908.6	82	
3.2.2	Logistics performance*	24.6	95	
3.2.3	Gross capital formation, % GDP	39.5	7 ●	◆
3.3	**Ecological sustainability**	**18.7**	**111**	
3.3.1	GDP/unit of energy use	5.8	110	
3.3.2	Environmental performance*	44.3	77	◆
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.2	116	
Market sophistication		**56.9**	**24 ●**	◆
4.1	**Credit**	**30.2**	**105**	
4.1.1	Ease of getting credit*	65.0	61	
4.1.2	Domestic credit to private sector, % GDP	30.0	95	
4.1.3	Microfinance gross loans, % GDP	0.0	80 ○	
4.2	**Investment**	**70.0**	**[11]**	
4.2.1	Ease of protecting minority investors*	70.0	36 ●	
4.2.2	Market capitalization, % GDP	n/a	n/a	
4.2.3	Venture capital investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	n/a	n/a	
4.3	**Trade, diversification, and market scale**	**70.4**	**62**	
4.3.1	Applied tariff rate, weighted avg., % ◴	8.7	110	
4.3.2	Domestic industry diversification	95.9	22 ●	◆
4.3.3	Domestic market scale, bn PPP$	250.2	60	

		Score/ Value	Rank	
Business sophistication		**14.8**	**[123]**	
5.1	**Knowledge workers**	**22.8**	**[93]**	
5.1.1	Knowledge-intensive employment, %	n/a	n/a	
5.1.2	Firms offering formal training, %	16.9	87	◇
5.1.3	GERD performed by business, % GDP ◴	0.1	72	
5.1.4	GERD financed by business, %	42.4	38	◆
5.1.5	Females employed w/advanced degrees, %	n/a	n/a	
5.2	**Innovation linkages**	**2.6**	**[130]**	
5.2.1	University-industry R&D collaboration†	n/a	n/a	
5.2.2	State of cluster development and depth†	n/a	n/a	
5.2.3	GERD financed by abroad, % GDP	0.0	97 ○	
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	62	
5.2.5	Patent families/bn PPP$ GDP	0.0	90	
5.3	**Knowledge absorption**	**19.0**	**98**	
5.3.1	Intellectual property payments, % total trade	0.3	83	
5.3.2	High-tech imports, % total trade	8.8	51	
5.3.3	ICT services imports, % total trade	0.3	115	
5.3.4	FDI net inflows, % GDP	2.8	58	
5.3.5	Research talent, % in businesses ◴	12.9	60	
Knowledge and technology outputs		**17.9**	**77**	
6.1	**Knowledge creation**	**10.6**	**77**	
6.1.1	Patents by origin/bn PPP$ GDP	1.5	47	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	98 ○	◇
6.1.3	Utility models by origin/bn PPP$ GDP	1.1	22 ●	
6.1.4	Scientific and technical articles/bn PPP$ GDP	2.1	125 ○	
6.1.5	Citable documents H-index	4.4	112	
6.2	**Knowledge impact**	**35.1**	**42 ●**	◆
6.2.1	Labor productivity growth, %	4.6	8 ●	◆
6.2.2	New businesses/th pop. 15–64	1.6	63	
6.2.3	Software spending, % GDP	n/a	n/a	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	2.3	83	
6.2.5	High-tech manufacturing, %	24.0	52	
6.3	**Knowledge diffusion**	**8.0**	**102**	
6.3.1	Intellectual property receipts, % total trade	0.0	103	
6.3.2	Production and export complexity	34.4	79	
6.3.3	High-tech exports, % total trade	0.1	119	
6.3.4	ICT services exports, % total trade	0.8	87	
Creative outputs		**12.3**	**113**	
7.1	**Intangible assets**	**19.0**	**[106]**	
7.1.1	Trademarks by origin/bn PPP$ GDP	32.8	71	
7.1.2	Global brand value, top 5,000, % GDP	n/a	n/a	
7.1.3	Industrial designs by origin/bn PPP$ GDP	1.0	69	
7.1.4	ICTs and organizational model creation†	n/a	n/a	
7.2	**Creative goods and services**	**5.9**	**101**	
7.2.1	Cultural and creative services exports, % total trade	0.0	95	
7.2.2	National feature films/mn pop. 15–69	4.2	47	
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	0.7	79	
7.2.5	Creative goods exports, % total trade	0.2	86	
7.3	**Online creativity**	**5.3**	**122**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	0.0	131 ○	◇
7.3.2	Country-code TLDs/th pop. 15–69	1.1	82	
7.3.3	Wikipedia edits/mn pop. 15–69	23.7	116	
7.3.4	Mobile app creation/bn PPP$ GDP	0.0	99 ○	

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

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

Outdated data for Uzbekistan

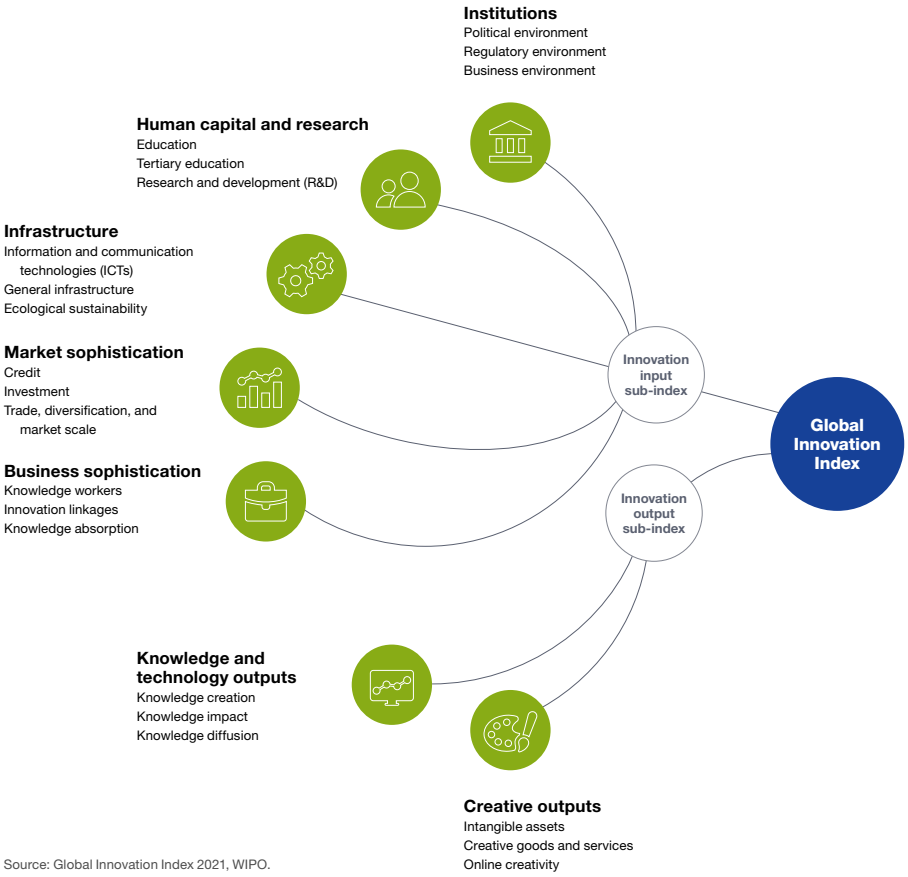
Code	Indicator name	Economy year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators

Code	Indicator name	Economy year	Model year	Source
2.3.2	Gross expenditure on R&D, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.3.1	Applied tariff rate, weighted avg., %	2015	2019	World Bank
5.1.3	GERD performed by business, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.3.5	Research talent, % in businesses	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators

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 2021, WIPO.

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.