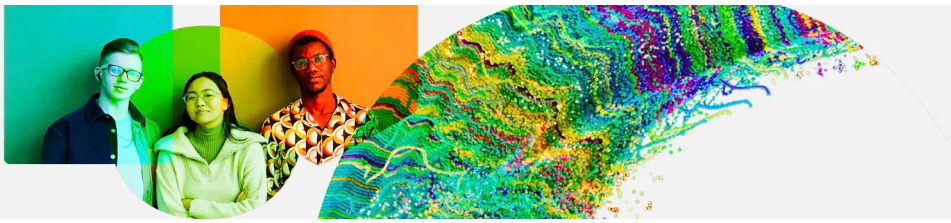
Global Innovation Index 2024



Uganda ranking in the Global Innovation Index 2024

Uganda ranks 121st among the 133 economies featured in the GII 2024.

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.

Uganda ranks 4th among the 10 low-income group economies.

Uganda ranks 18th among the 27 economies in Sub-Saharan Africa.

Uganda GII Ranking (2020-2024)

The table shows the rankings of Uganda 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 Uganda in the GII 2024 is between ranks 116 and 123.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	114th	103rd	123rd
2021	119th	119th	122nd
2022	119th	116th	120th
2023	121st	117th	121st
2024	121st	119th	117th

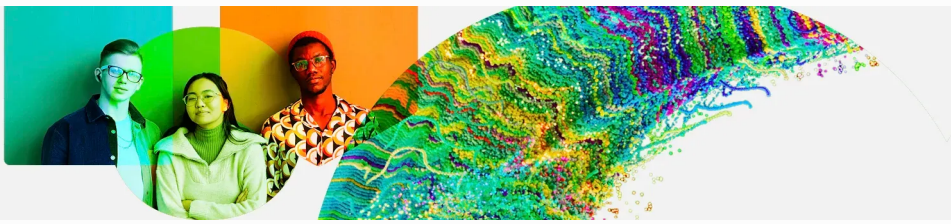
Uganda performs better in innovation outputs than innovation inputs in 2024.

This year **Uganda ranks 119th in innovation inputs.** This position is lower than last year.

Uganda ranks 117th in innovation outputs. This position is higher than last year.

Uganda has no clusters in the top 100 S&T clusters of the Global Innovation Index.

Global Innovation Index 2024



> Global Innovation Tracker

The Global Innovation Tracker 2024 shows what is the current state of innovation in Uganda, how rapidly is technology being embraced and what are the resulting societal impacts.

For Uganda, 5 indicators have improved in the short-term and 3 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▲ 0.6% 2022 - 2023	n/a	▼ -8.3% 2022 - 2023	▼ -87.3% 2022 - 2023	0% 2022 - 2023
▲ 9.5% 2013 - 2023	▲ 0.6% 2004 - 2014	▲ 27.1% 2013 - 2023	n/a	▼ -4% 2013 - 2023

Technology adoption

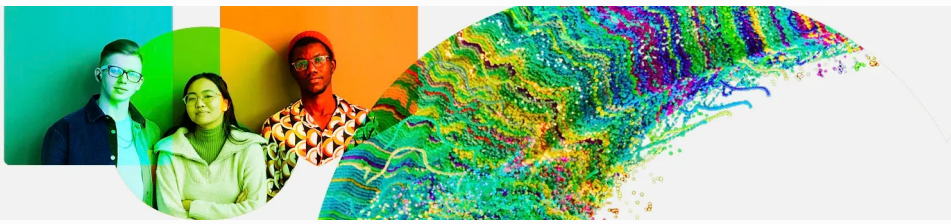
Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
▲ 0.8% 2021 - 2022	▲ 1.4% 2021 - 2022	n/a	n/a	n/a
▲ 1% 2012 - 2022	▼ -2.7% 2012 - 2022		n/a	n/a
17.8 per 100 inhabitants in 2022	0.09 per 100 inhabitants in 2022	n/a		n/a

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 1.2% 2022 - 2023	▲ 1.5% 2021 - 2022	▲ 1.4°C 2023
▼ -0.9% 2013 - 2023	▲ 0.8% 2012 - 2022	n/a
7,997 USD in 2023	63.6 years in 2022	

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the country from 1951–1980. Figures are rounded.

Global Innovation Index 2024



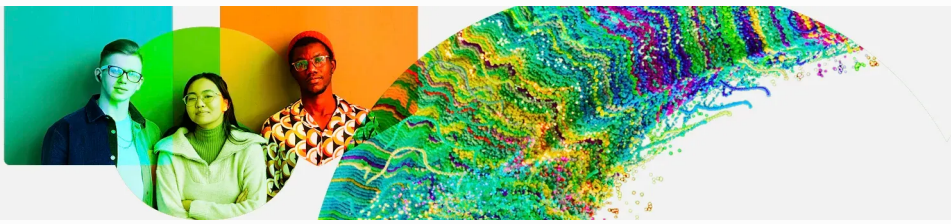
Expected vs. observed innovation performance

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, Uganda's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development

Global Innovation Index 2024



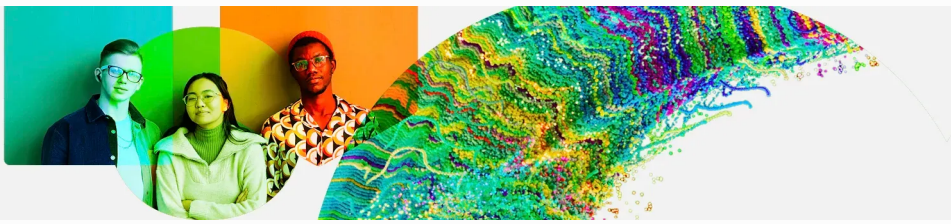
Effectively translating innovation investments into innovation outputs

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.

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

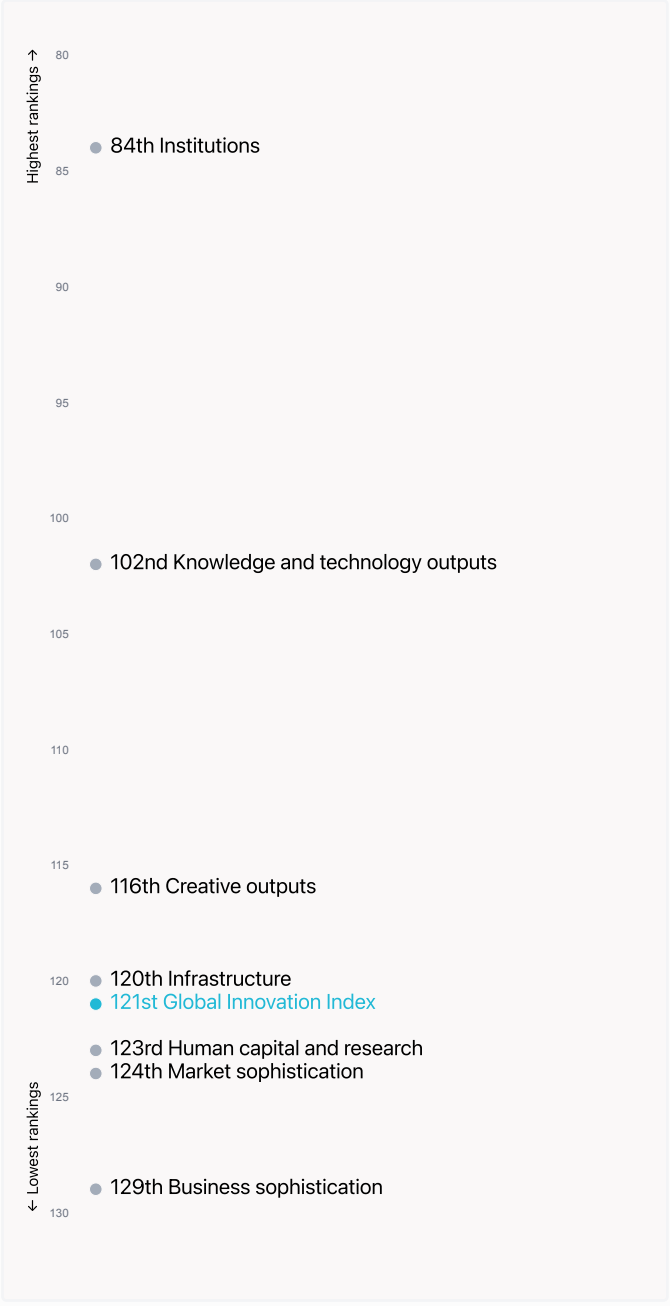
> Relationship between innovation inputs and outputs

Global Innovation Index 2024



Overview of Uganda's rankings in the seven areas of the GII in 2024

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Uganda are those that rank above the GII (shown in blue) and the weakest are those that rank below.



Highest rankings

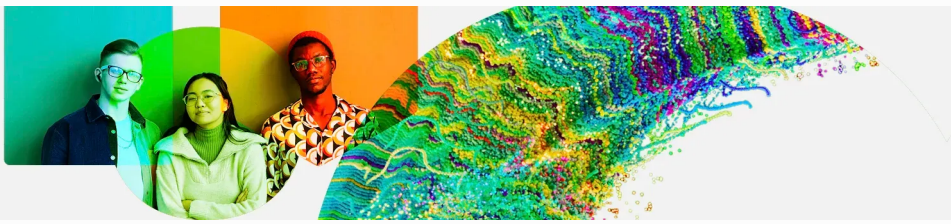
Uganda ranks highest in Institutions (84th), Knowledge and technology outputs (102nd), Creative outputs (116th) and Infrastructure (120th).

Lowest rankings

Uganda ranks lowest in Business sophistication (129th), Market sophistication (124th) and Human capital and research (123rd).

The full WIPO Intellectual Property Statistics profile for Uganda can be found on this link.

Global Innovation Index 2024



Benchmark of Uganda against other economy groupings for each of the seven areas of the GII Index

The charts shows the relative position of Uganda (blue bar) against other economy groupings (grey bars), for each of the seven areas of the GII Index.

Low-Income economies

Uganda performs above the low-income group average in Institutions, Infrastructure, Knowledge and technology outputs.

Sub-Saharan Africa

Uganda performs above the regional average in Institutions, Knowledge and technology outputs.

Institutions

- Top 10 | Score: 80.81
- Uganda | Score: 41.13
- Sub-Saharan Africa | Score: 37.83
- Low income | Score: 31.64

Human capital and research

- Top 10 | Score: 61.30
- Sub-Saharan Africa | Score: 17.86
- Low income | Score: 15.48
- Uganda | Score: 13.47

Infrastructure

- Top 10 | Score: 58.57
- Sub-Saharan Africa | Score: 25.40
- Uganda | Score: 23.55
- Low income | Score: 20.65

Market sophistication

- Top 10 | Score: 62.12
- Sub-Saharan Africa | Score: 18.79
- Low income | Score: 15.81
- Uganda | Score: 13.28

Business sophistication

- Top 10 | Score: 63.64
- Sub-Saharan Africa | Score: 18.73
- Low income | Score: 15.07
- Uganda | Score: 12.69

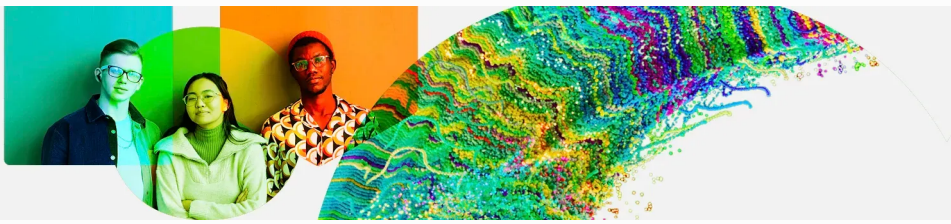
Knowledge and technology outputs

- Top 10 | Score: 57.29
- Uganda | Score: 11.19
- Sub-Saharan Africa | Score: 10.99
- Low income | Score: 10.02

Creative outputs

- Top 10 | Score: 56.54
- Sub-Saharan Africa | Score: 10.35
- Low income | Score: 7.56
- Uganda | Score: 6.93

Global Innovation Index 2024



Innovation strengths and weaknesses in Uganda

The table below gives an overview of the indicator strengths and weaknesses of Uganda in the GII 2024.

Uganda's main innovation strengths are **Low-carbon energy use, %** (rank 20), **Gross capital formation, % GDP** (rank 31) and **High-tech imports, % total trade** (rank 37).

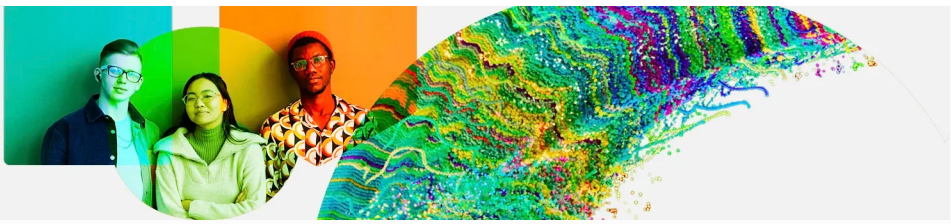
Strengths

Rank	Code	Indicator name
20	3.3.2	Low-carbon energy use, %
31	3.2.3	Gross capital formation, % GDP
37	5.3.2	High-tech imports, % total trade
43	4.2.3	VC recipients, deals/bn PPP$ GDP
47	1.3.1	Policy stability for doing business†
51	5.3.4	FDI net inflows, % GDP
51	6.3.1	Intellectual property receipts, % total trade
53	6.1.4	Scientific and technical articles/bn PPP$ GDP
71	5.2.1	Public Research-Industry co-publications, %
73	3.3.3	ISO 14001 environment/bn PPP$ GDP

Weaknesses

Rank	Code	Indicator name
130	3.1.1	ICT access*
129	6.2.3	Software spending, % GDP
121	5.3.1	Intellectual property payments, % total trade
102	5.2.5	Patent families/bn PPP$ GDP
98	4.2.2	Venture capital (VC) investors, deals/bn PPP$ GDP
75	7.1.3	Global brand value, top 5,000, % GDP
75	2.3.4	QS university ranking, top 3*
49	6.2.2	Unicorn valuation, % GDP
41	2.3.3	Global corporate R&D investors, top 3, mn USD

Global Innovation Index 2024



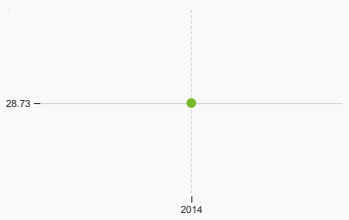
Uganda's innovation system

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

Innovation inputs in Uganda

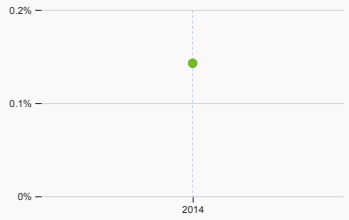
2.1.1 **Expenditure on education**

was equal to 2.55 % GDP in 2023, down by 0.009 percentage points from the year prior – and equivalent to an indicator rank of 113.



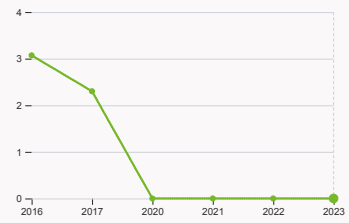
2.3.1 **Researchers**

was equal to 28.73 FTE per million population in 2014 – and equivalent to an indicator rank of 104.



2.3.2 **Gross expenditure on R&D**

was equal to 0.14 % GDP in 2014 – and equivalent to an indicator rank of 97.

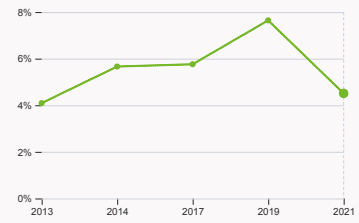


2.3.4 **QS university ranking**

was equal to an average score of 0 for the top three universities in 2023 with no change from the year prior – and equivalent to an indicator rank of 75.

4.2.4 **VC received, value**

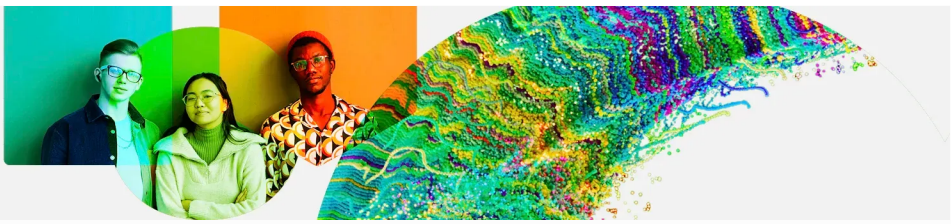
was equal to 6.25 thousand USD in 2023, down by 87.33% from the year prior – and equivalent to an indicator rank of 62.



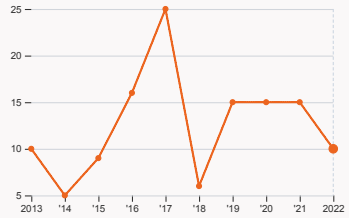
5.1.1 **Knowledge-intensive employment**

was equal to 4.51 % in 2021, down by 3.13 percentage points from the year prior – and equivalent to an indicator rank of 121.

Global Innovation Index 2024

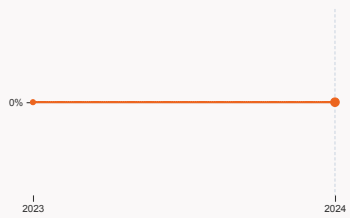


Innovation outputs in Uganda



6.1.1 Patents by origin

was equal to 10 patents in 2022, down by 33.33% from the year prior – and equivalent to an indicator rank of 111.

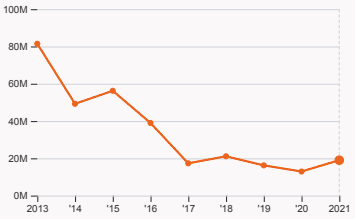


6.2.2 Unicorn valuation

was equal to 0 % GDP in 2024 with no change from the year prior – and equivalent to an indicator rank of 49.

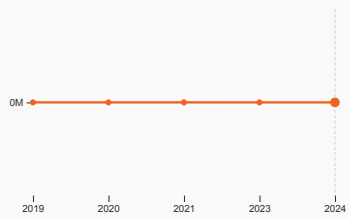
6.3.2 Production and export complexity

was equal to a score of -0.53 in 2021, up by 13.11% from the year prior – and equivalent to an indicator rank of 90.



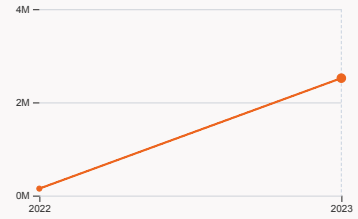
6.3.3 High-tech exports

was equal to 18.99 million USD in 2021, up by 46.87% from the year prior – and equivalent to an indicator rank of 106.



7.1.3 Global brand value

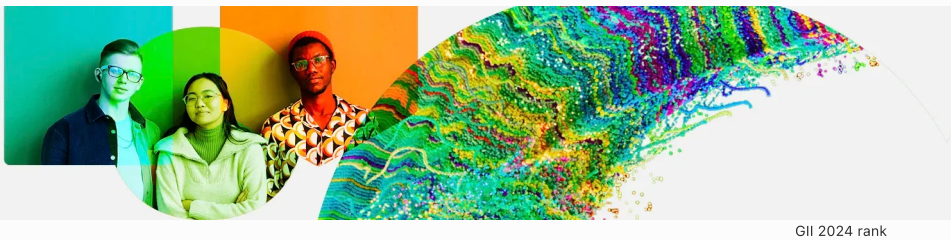
was equal to 0 million USD for the brands in the top 5,000 in 2024 with no change from the year prior – and equivalent to an indicator rank of 75.



7.3.3 Mobile app creation

was equal to 2.52 million global downloads of mobile apps in 2023, up by 1580% from the year prior – and equivalent to an indicator rank of 105.

Global Innovation Index 2024



Uganda

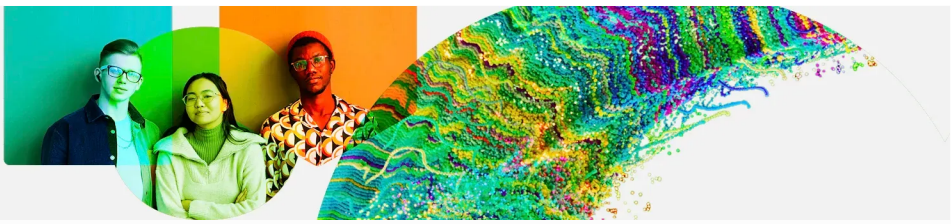
GII 2024 rank **121**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
117	119	Low	SSA	48.7	145.2	3,222.4

	Score / Value	Rank	
Institutions	**41.1**	**84**	
1.1 Institutional environment	**35.7**	**106**	
1.1.1 Operational stability for businesses*	42.7	108	
1.1.2 Government effectiveness*	28.7	102	
1.2 Regulatory environment	**30.9**	**93**	
1.2.1 Regulatory quality*	29	100	
1.2.2 Rule of law*	32.8	86	
1.3 Business environment	**56.8**	**[41]**	
1.3.1 Policy stability for doing business†	56.8	47	●◆
1.3.2 Entrepreneurship policies and culture†	n/a	n/a	
Human capital and research	**13.5**	**[123]**	
2.1 Education	**39.5**	**[98]**	
2.1.1 Expenditure on education, % GDP	2.6	113	◇
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3 School life expectancy, years	n/a	n/a	
2.1.4 PISA scales in reading, maths and science	n/a	n/a	
2.1.5 Pupil–teacher ratio, secondary	20.5	99	
2.2 Tertiary education	**0.3**	**[129]**	
2.2.1 Tertiary enrolment, % gross	4.8	126	
2.2.2 Graduates in science and engineering, %	n/a	n/a	
2.2.3 Tertiary inbound mobility, %	n/a	n/a	
2.3 Research and development (R&D)	**0.6**	**107**	
2.3.1 Researchers, FTE/mn pop.	28.7	104	
2.3.2 Gross expenditure on R&D, % GDP	0.1	97	
2.3.3 Global corporate R&D investors, top 3, mn USD	0	41	○◇
2.3.4 QS university ranking, top 3*	0	75	○◇
Infrastructure	**23.5**	**120**	
3.1 Information and communication technologies (ICTs)	**28.7**	**125**	
3.1.1 ICT access*	5	130	○
3.1.2 ICT use*	23.7	117	
3.1.3 Government's online service*	46.6	99	
3.1.4 E-participation*	39.5	89	
3.2 General infrastructure	**22.2**	**92**	
3.2.1 Electricity output, GWh/mn pop.	113	121	
3.2.2 Logistics performance*	n/a	n/a	
3.2.3 Gross capital formation, % GDP	28.2	31	●◆
3.3 Ecological sustainability	**19.7**	**68**	●◆
3.3.1 GDP/unit of energy use	4.9	117	
3.3.2 Low-carbon energy use, %	37.6	20	●◆
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.9	73	●◆
Market sophistication	**13.3**	**124**	
4.1 Credit	**2.8**	**129**	○◇
4.1.1 Finance for startups and scaleups†	n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP	14.8	122	◇
4.1.3 Loans from microfinance institutions, % GDP	0.3	50	
4.2 Investment	**8.6**	**65**	
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	0.008	98	○
4.2.3 VC recipients, deals/bn PPP$ GDP	0.07	43	●◆
4.2.4 VC received, value, % GDP	0.0005	62	
4.3 Trade, diversification and market scale	**28.4**	**115**	
4.3.1 Applied tariff rate, weighted avg., %	5.8	103	
4.3.2 Domestic industry diversification	n/a	n/a	
4.3.3 Domestic market scale, bn PPP$	145.2	81	

	Score / Value	Rank	
Business sophistication	**12.7**	**129**	○
5.1 Knowledge workers	**4.4**	**132**	○
5.1.1 Knowledge-intensive employment, %	4.5	121	
5.1.2 Firms offering formal training, %	n/a	n/a	
5.1.3 GERD performed by business, % GDP	0.006	88	
5.1.4 GERD financed by business, %	3.4	87	
5.1.5 Females employed w/advanced degrees, %	3.3	102	◆
5.2 Innovation linkages	**17.6**	**94**	
5.2.1 Public Research-Industry co-publications, %	1.4	71	●◆
5.2.2 University-industry R&D collaboration†	38.2	79	
5.2.3 State of cluster development†	34.6	94	
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.004	114	◇
5.2.5 Patent families/bn PPP$ GDP	0	102	○◇
5.3 Knowledge absorption	**16.1**	**116**	
5.3.1 Intellectual property payments, % total trade	0	121	○◇
5.3.2 High-tech imports, % total trade	10.2	37	●◆
5.3.3 ICT services imports, % total trade	0.4	115	◇
5.3.4 FDI net inflows, % GDP	2.8	51	●◆
5.3.5 Research talent, % in businesses	4	76	
Knowledge and technology outputs	**11.2**	**102**	
6.1 Knowledge creation	**8.5**	**90**	
6.1.1 Patents by origin/bn PPP$ GDP	0.07	111	
6.1.2 PCT patents by origin/bn PPP$ GDP	0.01	90	◆
6.1.3 Utility models by origin/bn PPP$ GDP	0.1	46	
6.1.4 Scientific and technical articles/bn PPP$ GDP	12.8	53	●◆
6.1.5 Citable documents H-index	10	75	◆
6.2 Knowledge impact	**16.2**	**119**	
6.2.1 Labor productivity growth, %	0.5	74	
6.2.2 Unicorn valuation, % GDP	0	49	○◇
6.2.3 Software spending, % GDP	0.01	129	○
6.2.4 High-tech manufacturing, %	n/a	n/a	
6.3 Knowledge diffusion	**8.8**	**98**	
6.3.1 Intellectual property receipts, % total trade	0.1	51	●◆
6.3.2 Production and export complexity	29.7	90	◆
6.3.3 High-tech exports, % total trade	0.2	106	
6.3.4 ICT services exports, % total trade	0.5	101	
6.3.5 ISO 9001 quality/bn PPP$ GDP	2.1	90	◆
Creative outputs	**6.9**	**116**	
7.1 Intangible assets	**4.8**	**116**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	15.3	99	
7.1.3 Global brand value, top 5,000, % GDP	0	75	○◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.4	82	
7.2 Creative goods and services	**0.9**	**[121]**	
7.2.1 Cultural and creative services exports, % total trade	0.03	100	
7.2.2 National feature films/mn pop. 15–69	n/a	n/a	
7.2.3 Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4 Creative goods exports, % total trade	0.08	103	
7.3 Online creativity	**17.2**	**107**	
7.3.1 Top-level domains (TLDs)/th pop. 15–69	0.1	124	
7.3.2 GitHub commits/mn pop. 15–69	1.6	109	
7.3.3 Mobile app creation/bn PPP$ GDP	49.8	105	

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question, 🕓 that the economy's data is outdated. Square brackets [ ] indicate the the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level; n/a represents missing values; a dash - indicates an indicator which is not relevant to this economy and thus not considered for DMC thresholds.



Data availability

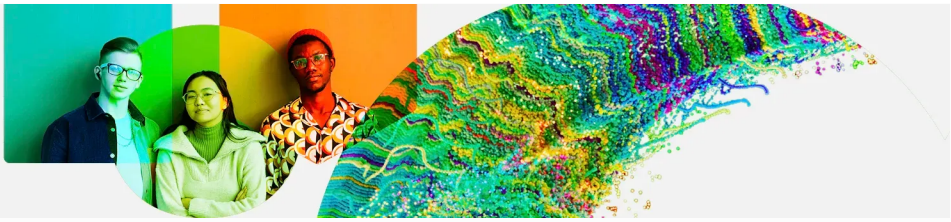
The following tables list indicators that are either missing or outdated for Uganda.

Uganda has missing data for fifteen indicators and outdated data for eighteen indicators.

Missing data for Uganda

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture†	n/a	2023	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2020	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2022	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2022	OECD, PISA
2.2.2	Graduates in science and engineering, %	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD
2.2.3	Tertiary inbound mobility, %	n/a	2022	UNESCO Institute for Statistics
3.2.2	Logistics performance*	n/a	2023	World Bank, Logistics Performance Index 2023 (https://lpi.worldbank.org/); and World Bank 2023, Connecting to Compete 2023: Trade Logistics in the Global Economy The Logistics Performance Index and its Indicators.
4.1.1	Finance for startups and scaleups†	n/a	2023	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
4.3.2	Domestic industry diversification	n/a	2021	United Nations Industrial Development Organization (UNIDO), Industrial Statistics Database (INDSTAT) Rev.3 and 4
5.1.2	Firms offering formal training, %	n/a	2023	World Bank Enterprise Surveys
6.2.4	High-tech manufacturing, %	n/a	2021	United Nations Industrial Development Organization
7.1.1	Intangible asset intensity, top 15, %	n/a	2023	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2022	OMDIA; United Nations, World Population Prospects
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2023	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

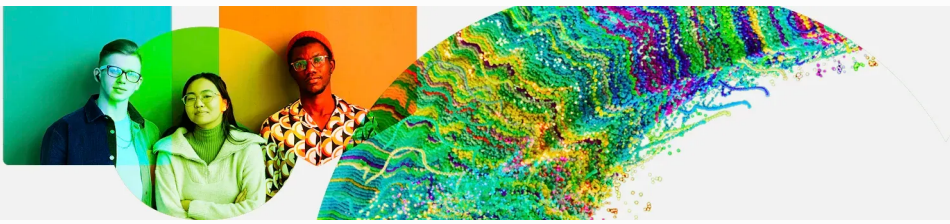
Global Innovation Index 2024



Outdated data for Uganda

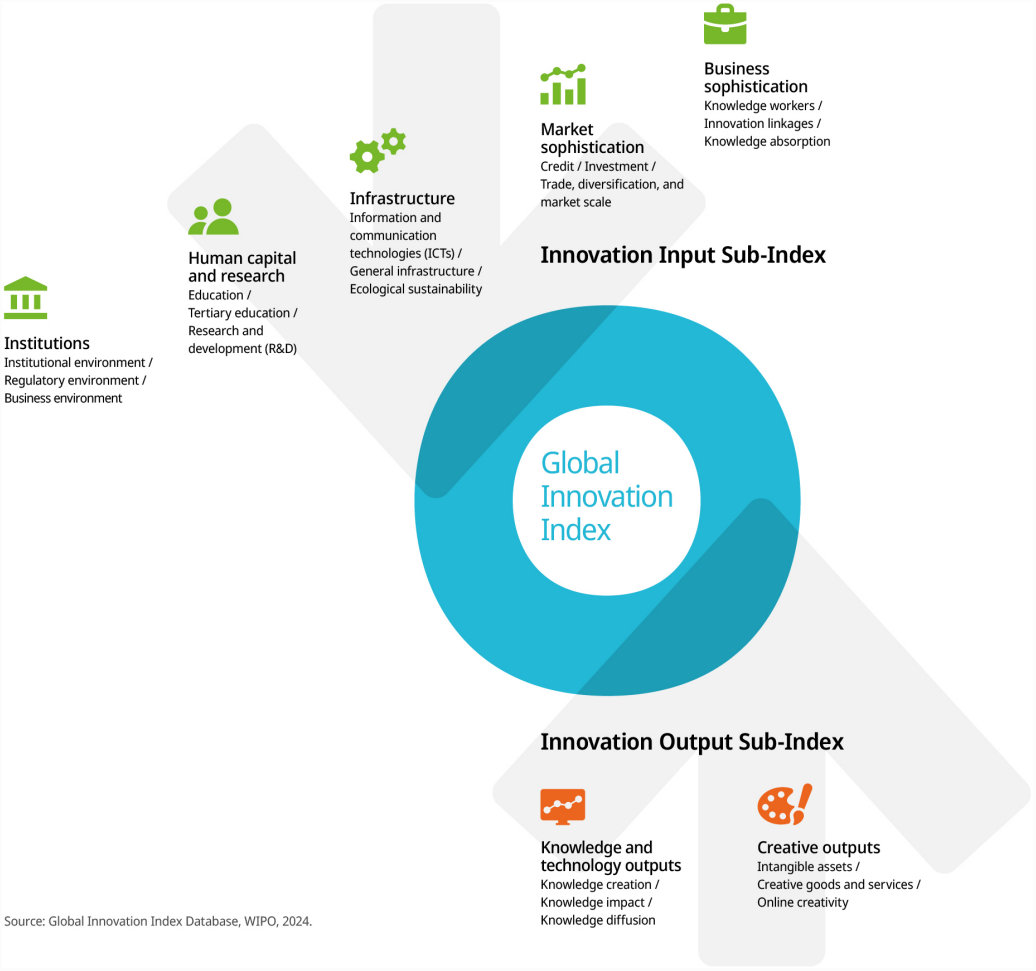
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policy stability for doing business†	2020	2023	World Economic Forum, Executive Opinion Survey (EOS)
2.1.5	Pupil–teacher ratio, secondary	2017	2022	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2016	2022	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2014	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.1	Electricity output, GWh/mn pop.	2021	2022	International Energy Agency
4.1.2	Domestic credit to private sector, % GDP	2021	2022	International Monetary Fund; World Bank and OECD GDP estimates.
4.3.1	Applied tariff rate, weighted avg., %	2021	2022	World Trade Organization
5.1.1	Knowledge-intensive employment, %	2021	2022	International Labour Organization
5.1.3	GERD performed by business, % GDP	2014	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2014	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2021	2023	International Labour Organization
5.2.2	University-industry R&D collaboration†	2020	2023	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	State of cluster development†	2020	2023	World Economic Forum, Executive Opinion Survey (EOS)
5.3.2	High-tech imports, % total trade	2021	2022	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2014	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.3.3	High-tech exports, % total trade	2021	2022	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development; Trade Data Monitor.
7.2.4	Creative goods exports, % total trade	2021	2022	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development

Global Innovation Index 2024



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 Database, WIPO, 2024.

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.