

Global Innovation Index 2022



UGANDA

119th Uganda ranks 119th among the 132 economies featured in the GII 2022.

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 Uganda 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 Uganda in the GII 2022 is between ranks 110 and 123.

Rankings for Uganda (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	114	103	123
2021	119	119	122
2022	119	116	120

- Uganda performs better in innovation inputs than innovation outputs in 2022.
- This year Uganda ranks 116th in innovation inputs, higher than last year but lower than 2020.
- As for innovation outputs, Uganda ranks 120th. This position is higher than both 2021 and 2020.

4th Uganda ranks 4th among the 12 low-income group economies.

16th Uganda ranks 16th among the 27 economies in Sub-Saharan Africa.

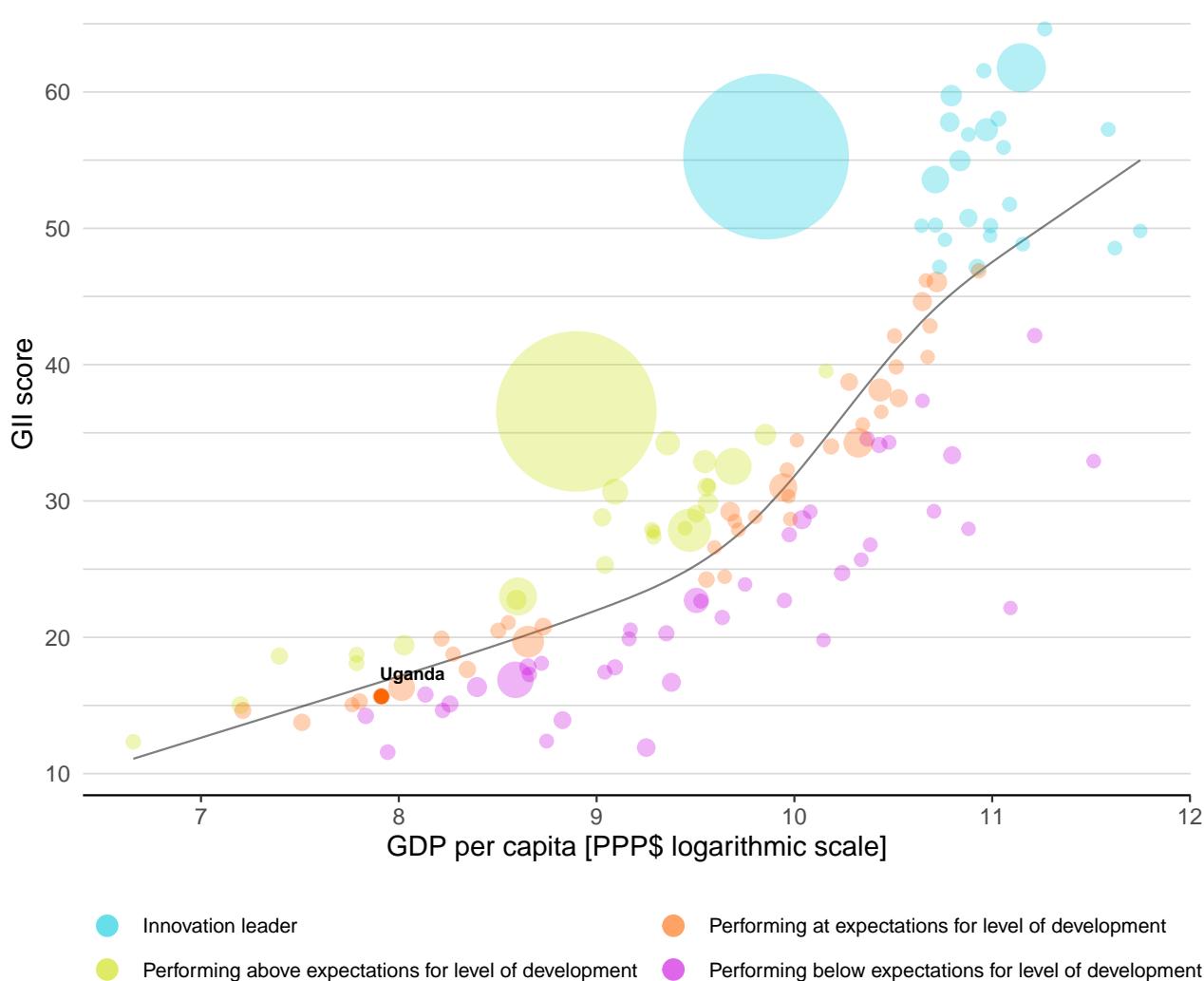


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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.

The positive relationship between innovation and development



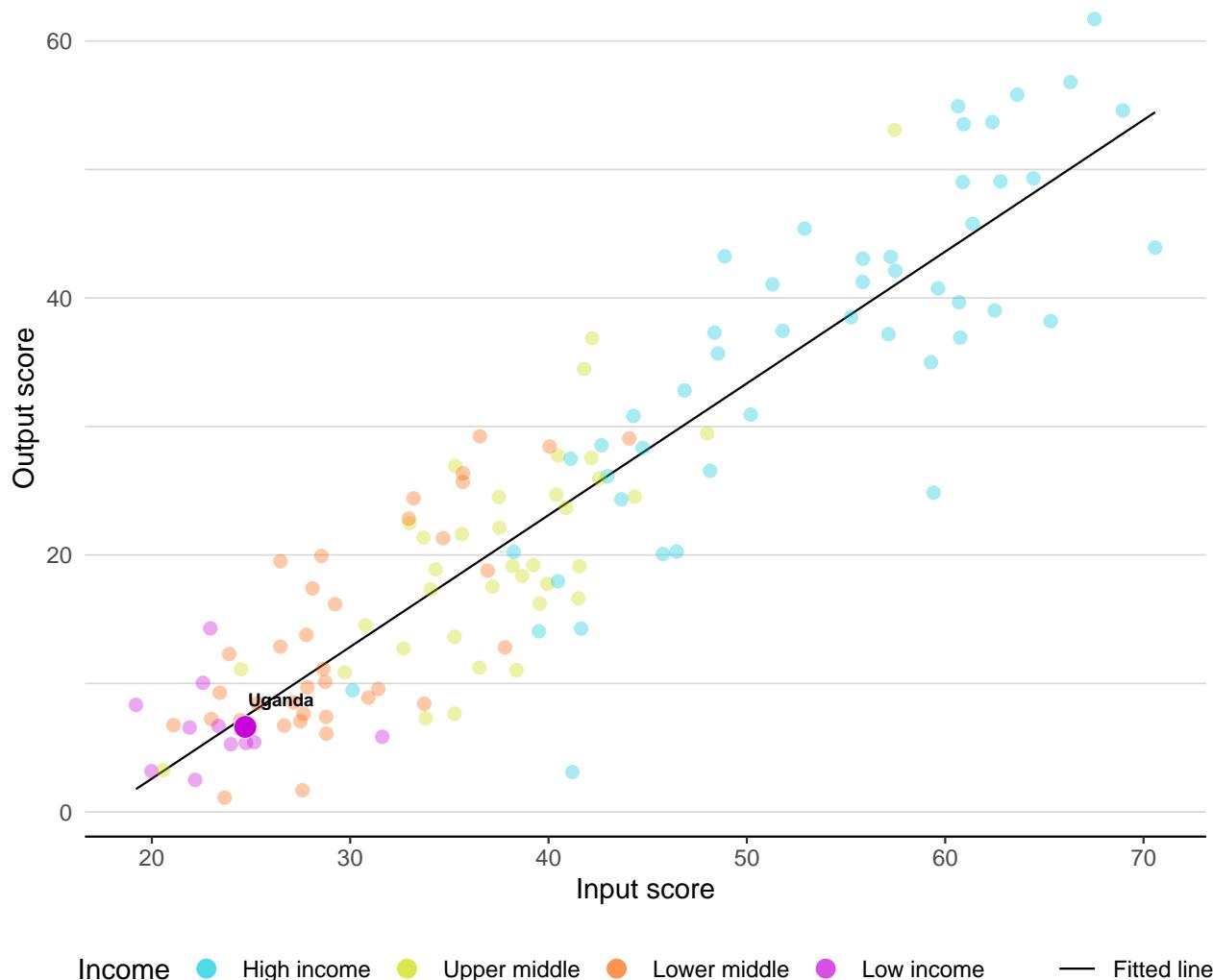


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

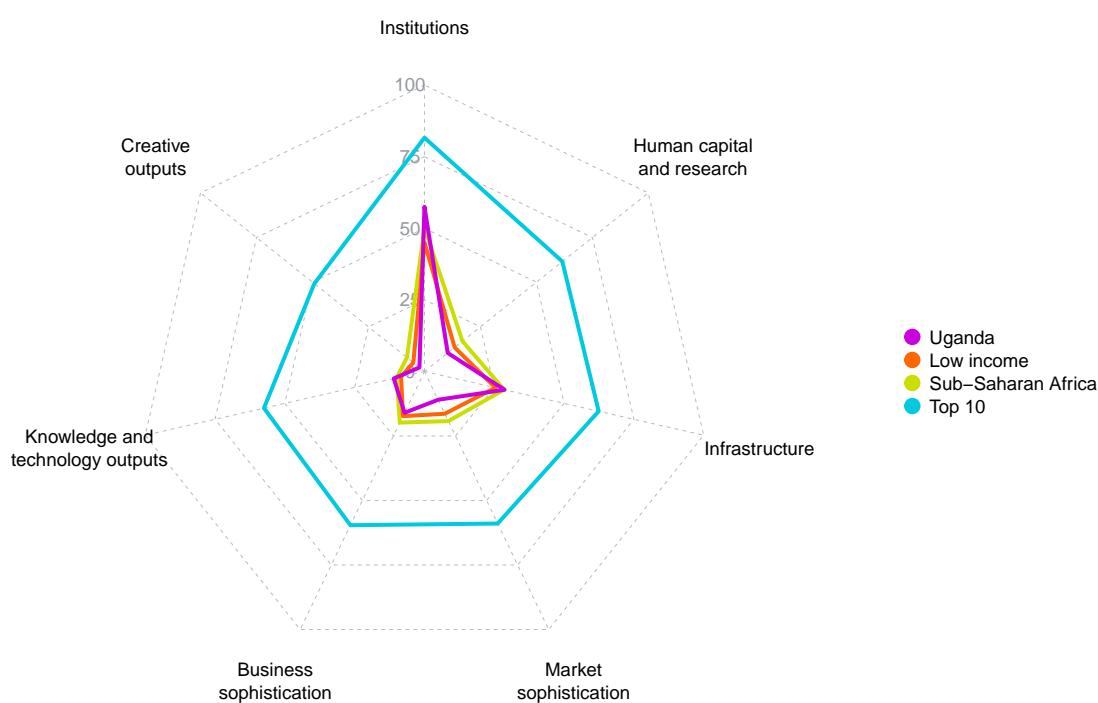
Innovation input to output performance





BENCHMARKING AGAINST OTHER LOW-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

The seven GII pillar scores for Uganda



Low-income group economies

Uganda performs above the low-income group average in three pillars, namely: Institutions; Infrastructure; and, Knowledge and technology outputs.

Sub-Saharan Africa

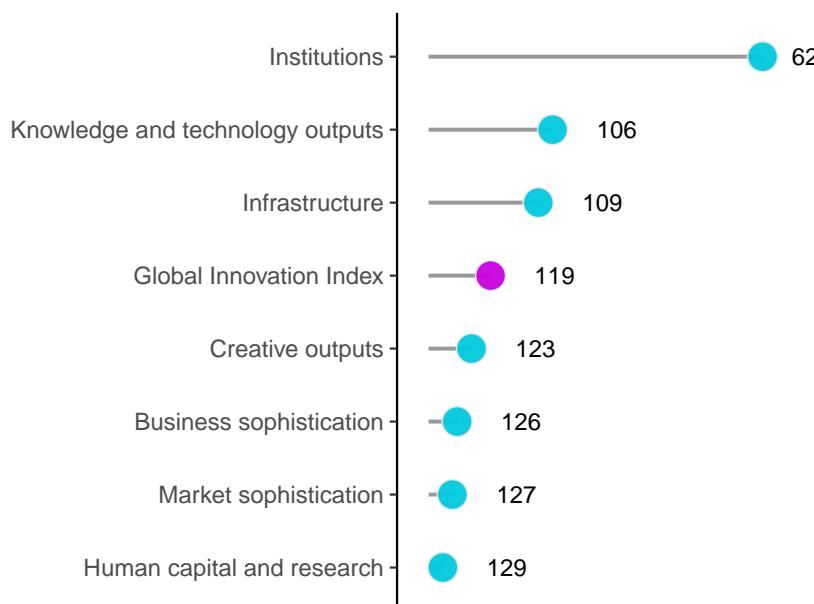
Uganda performs above the regional average in three pillars, namely: Institutions; Infrastructure; and, Knowledge and technology outputs.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Uganda performs best in Institutions and its weakest performance is in Human capital and research.

The seven GII pillar ranks for Uganda



Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Uganda can be found at:

https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=UG.



INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Uganda in the GII 2022.

Strengths and weaknesses for Uganda

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	20	2.2.1	Tertiary enrolment, % gross	125
1.3.1	Policies for doing business	47	2.3.1	Researchers, FTE/mn pop.	103
2.2.3	Tertiary inbound mobility, %	21	2.3.3	Global corporate R&D investors, top 3, mn USD	38
3.2.3	Gross capital formation, % GDP	33	2.3.4	QS university ranking, top 3	72
5.1.2	Firms offering formal training, %	46	3.2.1	Electricity output, GWh/mn pop.	124
5.2.3	GERD financed by abroad, % GDP	42	5.1.1	Knowledge-intensive employment, %	117
5.3.4	FDI net inflows, % GDP	43	5.1.3	GERD performed by business, % GDP	87
6.1.4	Scientific and technical articles/bn PPP\$ GDP	55	5.1.5	Females employed w/advanced degrees, %	126
6.2.1	Labor productivity growth, %	47	6.2.3	Software spending, % GDP	120
6.3.1	Intellectual property receipts, % total trade	47	7.1.3	Global brand value, top 5,000, % GDP	77

Uganda

119

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
120	116	Low	SSA	47.1	115.9	2,729
Score/ Value Rank						
Institutions	57.5	62	◆	Business sophistication	16.0	126
1.1 Political environment	48.6	100		5.1 Knowledge workers	10.1	119
1.1.1 Political and operational stability*	60.0	97		5.1.1 Knowledge-intensive employment, %	6.7	117 ○
1.1.2 Government effectiveness*	37.3	104		5.1.2 Firms offering formal training, %	34.7	46 ● ◆
1.2 Regulatory environment	67.3	60	● ◆	5.1.3 GERD performed by business, % GDP	0.0	87 ○
1.2.1 Regulatory quality*	34.2	97		5.1.4 GERD financed by business, %	3.4	85
1.2.2 Rule of law*	37.5	79		5.1.5 Females employed w/advanced degrees, %	0.1	126 ○ ◇
1.2.3 Cost of redundancy dismissal	8.7	20	● ◆	5.2 Innovation linkages	20.7	86
1.3 Business environment	56.6	[38]		5.2.1 University-industry R&D collaboration†	43.1	67 ◆
1.3.1 Policies for doing business†	56.6	47	●	5.2.2 State of cluster development and depth†	43.3	86
1.3.2 Entrepreneurship policies and culture*	n/a	n/a		5.2.3 GERD financed by abroad, % GDP	0.1	42 ●
Human capital and research	10.4	129	○	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	99
2.1 Education	16.1	[131]		5.2.5 Patent families/bn PPP\$ GDP	0.0	79 ◆
2.1.1 Expenditure on education, % GDP	2.7	115	◇	5.3 Knowledge absorption	17.2	127 ○ ◇
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a		5.3.1 Intellectual property payments, % total trade	0.2	91
2.1.3 School life expectancy, years	n/a	n/a		5.3.2 High-tech imports, % total trade	7.3	86
2.1.4 PISA scales in reading, maths and science	n/a	n/a		5.3.3 ICT services imports, % total trade	0.4	117 ◇
2.1.5 Pupil-teacher ratio, secondary	n/a	n/a		5.3.4 FDI net inflows, % GDP	3.0	43 ●
2.2 Tertiary education	14.6	103		5.3.5 Research talent, % in businesses	4.0	72
2.2.1 Tertiary enrolment, % gross	5.1	125	○	Knowledge and technology outputs	11.0	106
2.2.2 Graduates in science and engineering, %	n/a	n/a		6.1 Knowledge creation	8.0	85
2.2.3 Tertiary inbound mobility, %	10.7	21	● ◆	6.1.1 Patents by origin/bn PPP\$ GDP	0.1	106
2.3 Research and development (R&D)	0.4	107		6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0	82 ◆
2.3.1 Researchers, FTE/mn pop.	27.8	103	○	6.1.3 Utility models by origin/bn PPP\$ GDP	0.2	53
2.3.2 Gross expenditure on R&D, % GDP	0.1	97		6.1.4 Scientific and technical articles/bn PPP\$ GDP	17.6	55 ● ◆
2.3.3 Global corporate R&D investors, top 3, mn USD	0.0	38	○ ◇	6.1.5 Citable documents H-index	9.6	77 ◆
2.3.4 QS university ranking, top 3*	0.0	72	○ ◇	6.2 Knowledge impact	16.5	103
Infrastructure	28.7	109		6.2.1 Labor productivity growth, %	1.5	47 ●
3.1 Information and communication technologies (ICTs)	48.4	106	◆	6.2.2 New businesses/th pop. 15–64	0.9	85
3.1.1 ICT access*	51.9	120		6.2.3 Software spending, % GDP	0.0	120 ○ ◇
3.1.2 ICT use*	26.4	118		6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	1.3	101
3.1.3 Government's online service*	58.2	90	◆	6.2.5 High-tech manufacturing, %	n/a	n/a
3.1.4 E-participation*	57.1	90	◆	6.3 Knowledge diffusion	8.5	108
3.2 General infrastructure	21.4	101		6.3.1 Intellectual property receipts, % total trade	0.2	47 ● ◆
3.2.1 Electricity output, GWh/mn pop.	98.7	124	○	6.3.2 Production and export complexity	20.8	101
3.2.2 Logistics performance*	24.7	92		6.3.3 High-tech exports, % total trade	0.2	112
3.2.3 Gross capital formation, % GDP	27.4	33	●	6.3.4 ICT services exports, % total trade	0.4	103 ◇
3.3 Ecological sustainability	16.3	118		Creative outputs	2.2	123
3.3.1 GDP/unit of energy use	5.4	117		7.1 Intangible assets	3.9	118
3.3.2 Environmental performance*	35.8	87	◆	7.1.1 Intangible asset intensity, top 15, %	n/a	n/a
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.4	93		7.1.2 Trademarks by origin/bn PPP\$ GDP	14.7	98
Market sophistication	11.0	127	○	7.1.3 Global brand value, top 5,000, % GDP	0.0	77 ○ ◇
4.1 Credit	3.8	126	○	7.1.4 Industrial designs by origin/bn PPP\$ GDP	0.4	86
4.1.1 Finance for startups and scaleups*	n/a	n/a		7.2 Creative goods and services	0.9	[124]
4.1.2 Domestic credit to private sector, % GDP	14.2	119		7.2.1 Cultural and creative services exports, % total trade	0.0	93
4.1.3 Loans from microfinance institutions, % GDP	0.3	48		7.2.2 National feature films/mn pop. 15–69	n/a	n/a
4.2 Investment	4.0	86		7.2.3 Entertainment and media market/th pop. 15–69	n/a	n/a
4.2.1 Market capitalization, % GDP	n/a	n/a		7.2.4 Printing and other media, % manufacturing	n/a	n/a
4.2.2 Venture capital investors, deals/bn PPP\$ GDP	0.0	87	◆	7.2.5 Creative goods exports, % total trade	0.1	103
4.2.3 Venture capital recipients, deals/bn PPP\$ GDP	0.0	51		7.3 Online creativity	0.3	116
4.2.4 Venture capital received, value, % GDP	0.0	73		7.3.1 Generic top-level domains (TLDs)/th pop. 15–69	0.2	114
4.3 Trade, diversification, and market scale	25.0	121		7.3.2 Country-code TLDs/th pop. 15–69	0.1	120
4.3.1 Applied tariff rate, weighted avg., %	8.1	106		7.3.3 GitHub commit pushes received/mn pop. 15–69	0.7	109 ◆
4.3.2 Domestic industry diversification	n/a	n/a		7.3.4 Mobile app creation/bn PPP\$ GDP	n/a	n/a
4.3.3 Domestic market scale, bn PPP\$	115.9	83				

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/global_innovation_index/en/2022. 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 Uganda.

Missing data for Uganda

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2018	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2019	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.1.5	Pupil-teacher ratio, secondary	n/a	2019	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges
4.3.2	Domestic industry diversification	n/a	2019	United Nations Industrial Development Organization
6.2.5	High-tech manufacturing, %	n/a	2019	United Nations Industrial Development Organization
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2019	OMDIA
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO
7.2.4	Printing and other media, % manufacturing	n/a	2019	United Nations Industrial Development Organization
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2021	data.ia

Outdated data for Uganda

Code	Indicator name	Economy year	Model year	Source
1.3.1	Policies for doing business	2020	2021	World Economic Forum, Executive Opinion Survey (EOS)
2.2.1	Tertiary enrolment, % gross	2016	2019	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2011	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2014	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
5.1.1	Knowledge-intensive employment, %	2017	2021	International Labour Organization



Code	Indicator name	Economy year	Model year	Source
5.1.2	Firms offering formal training, %	2013	2019	World Bank Enterprise Surveys
5.1.3	GERD performed by business, % GDP	2014	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	2014	2019	UNESCO Institute for Statistics
5.1.5	Females employed w/advanced degrees, %	2017	2021	International Labour Organization
5.2.1	University-industry R&D collaboration	2020	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development and depth	2020	2021	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	GERD financed by abroad, % GDP	2014	2019	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	2014	2020	UNESCO Institute for Statistics
6.2.2	New businesses/th pop. 15–64	2018	2020	World Bank, Entrepreneurship Database



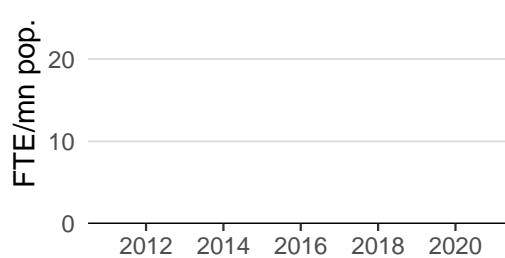
UGANDA'S INNOVATION SYSTEM

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

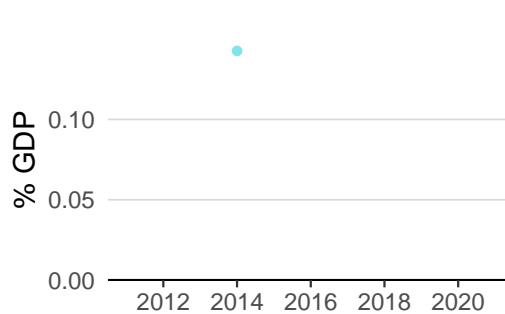
Innovation inputs



2.1.1 Expenditure on education was equal to 2.7% GDP in 2021—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 115.



2.3.1 Researchers was equal to 27.8 FTE/mn pop. in 2014 and equivalent to an indicator rank of 103.



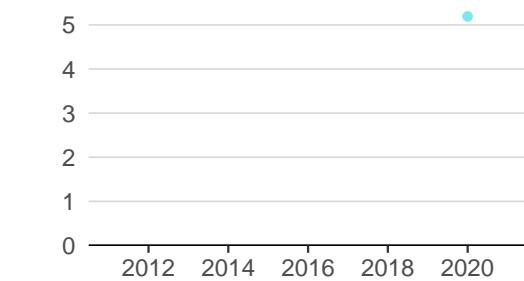
2.3.2 Gross expenditure on R&D was equal to 0.1% GDP in 2014 and equivalent to an indicator rank of 97.



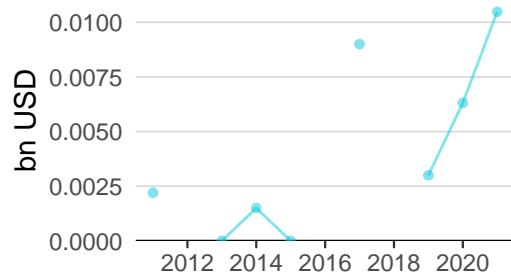
2.3.4 QS university ranking was equal to 0.0 in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 72.



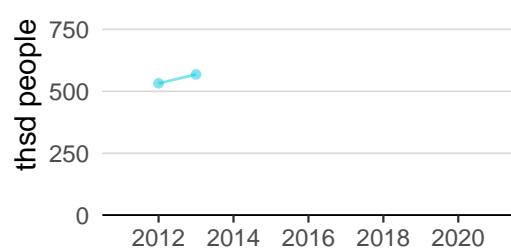
3.1.1 ICT access was equal to 5.2 in 2020 and equivalent to an indicator rank of 120.



4.2.4 Venture capital received was equal to 0.0 bn USD in 2021—up by 66 percentage points from the year prior—and equivalent to an indicator rank of 73.



5.1.1 Knowledge-intensive employment was equal to 924.2 thsd people in 2017 and equivalent to an indicator rank of 117.

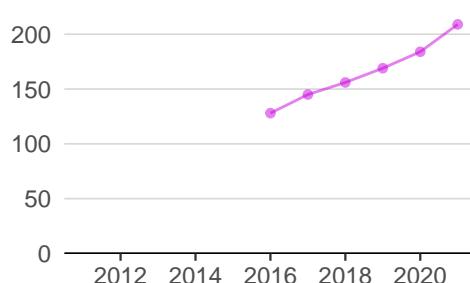




Innovation outputs



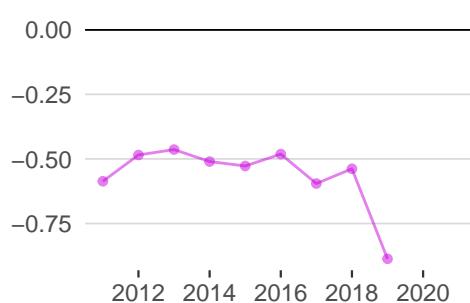
6.1.1 Patents by origin was equal to 15.0 in 2020—effectively unchanged from the year prior—and equivalent to an indicator rank of 106.



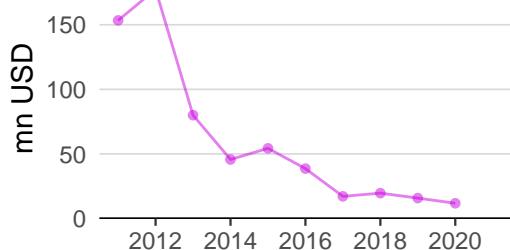
6.1.5 Citable documents H-index was equal to 209.0 in 2021—up by 14 percentage points from the year prior—and equivalent to an indicator rank of 77.



6.3.1 Intellectual property receipts was equal to 8.7 mn USD in 2020—down by 45 percentage points from the year prior—and equivalent to an indicator rank of 47.



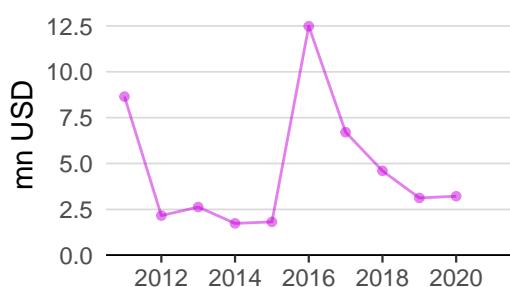
6.3.2 Production and export complexity was equal to -0.9 in 2019—down by 65 percentage points from the year prior—and equivalent to an indicator rank of 101.



6.3.3 High-tech exports was equal to 11.8 mn USD in 2020—down by 25 percentage points from the year prior—and equivalent to an indicator rank of 112.



7.1.3 Global brand value was equal to 0.0 mn USD in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 77.



7.2.1 Cultural and creative services exports was equal to 3.2 mn USD in 2020—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 93.



UGANDA'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
------	----------	-----	------------	---------------	------

No observations

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard>).

2.3.4 QS university ranking

University	Score	Rank
------------	-------	------

No observations

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2022>).

7.1.1 Intangible asset intensity, top 15

Firm	Rank
------	------

No observations

Source: Brand Finance (<https://brandirectory.com/reports/gift-2021>).

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank
-------	----------	------

No observations

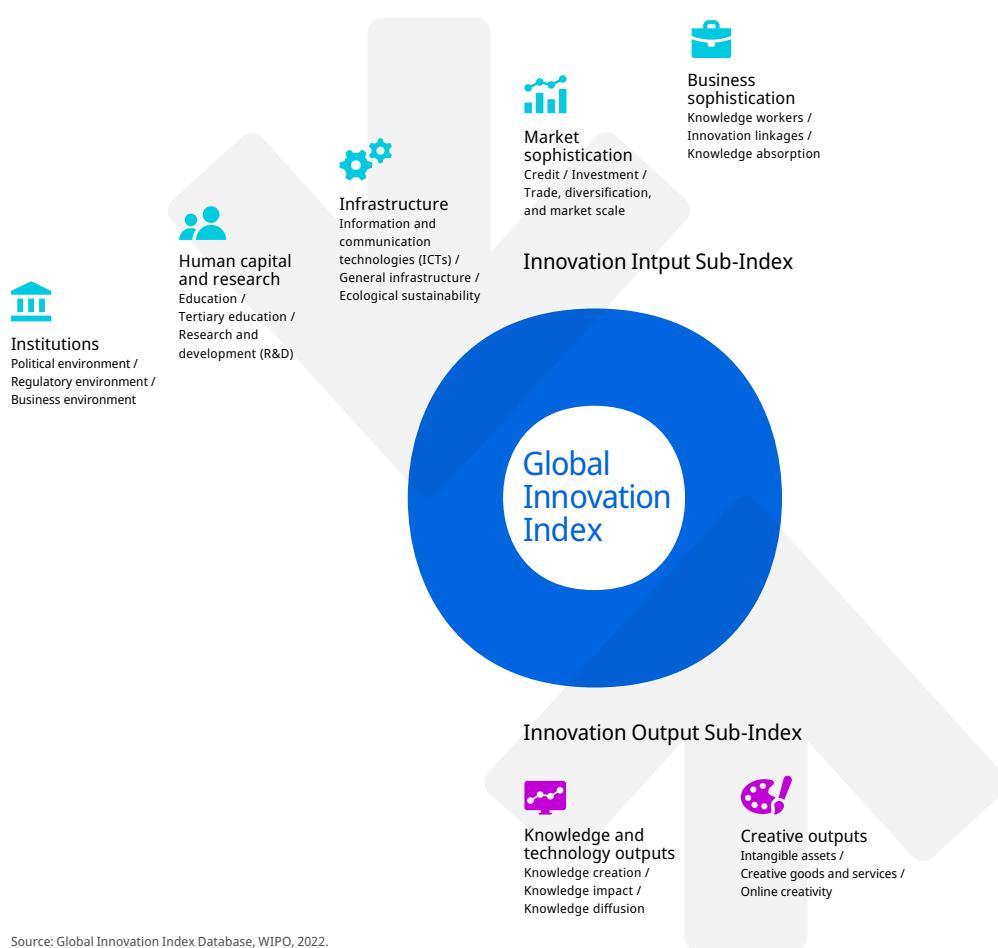
Source: Brand Finance (<https://brandirectory.com>).



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, 2022.

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.