



# Global Innovation Index 2021



## UGANDA

**119th** Uganda ranks 119th 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 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 2021 is between ranks 113 and 125.

### Rankings for Uganda (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	119	119	122
2020	114	103	123
2019	102	96	107

- Uganda performs better in innovation inputs than innovation outputs in 2021.
- This year Uganda ranks 119th in innovation inputs, lower than both 2020 and 2019.
- As for innovation outputs, Uganda ranks 122nd. This position is higher than last year but lower than 2019.

**6th** Uganda ranks 6th among the 13 low-income group economies.

**17th** Uganda ranks 17th among the 27 economies in Sub-Saharan Africa.

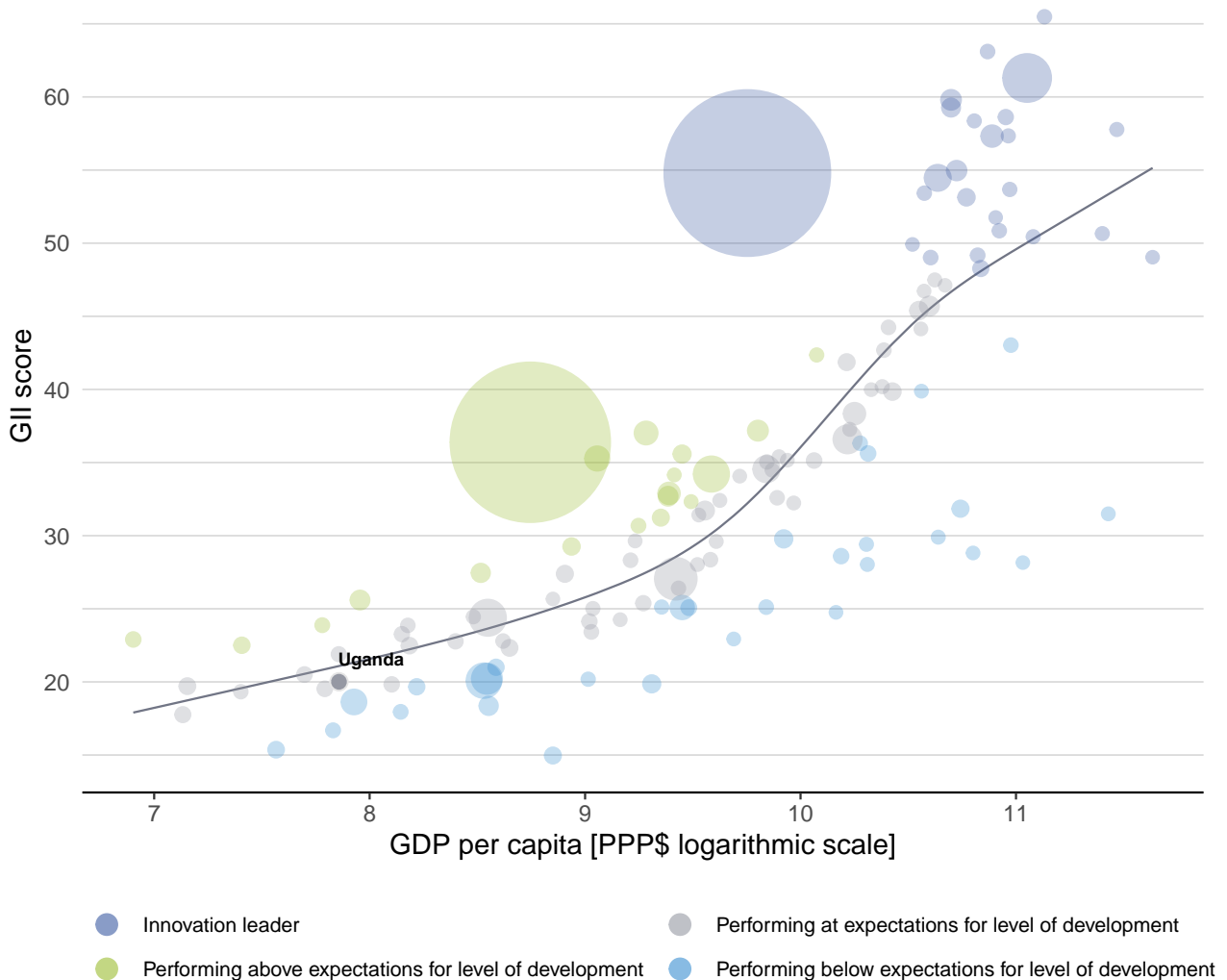


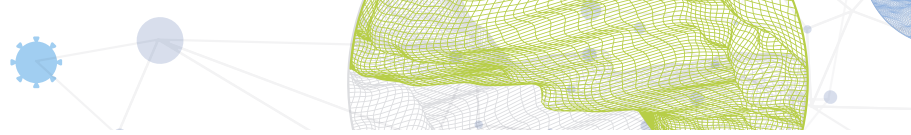
## EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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



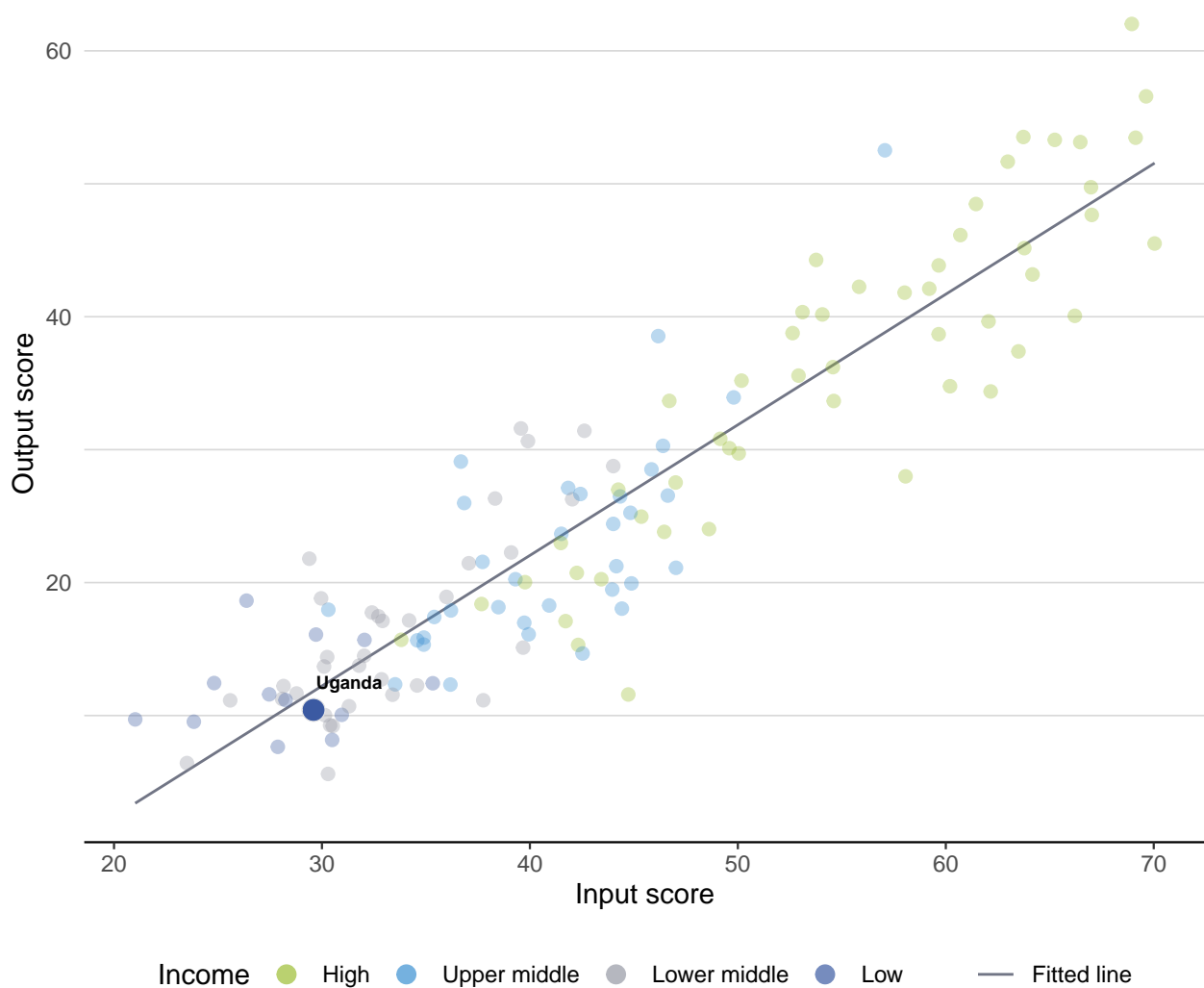


## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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 four pillars, namely: Institutions; Infrastructure; Market sophistication; and, Knowledge and technology outputs.

#### Sub-Saharan Africa

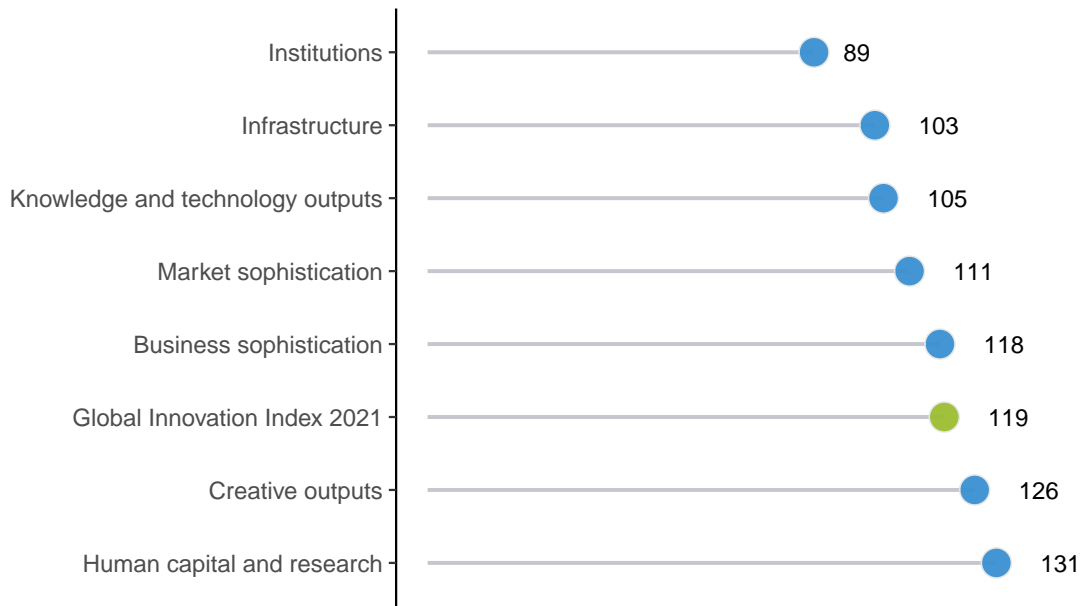
Uganda performs above the regional average in three pillars, namely: Institutions; Infrastructure; and, Knowledge and technology outputs.



## OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 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 one.









## INNOVATION STRENGTHS AND WEAKNESSES

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

### Strengths and weaknesses for Uganda

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2	Regulatory environment	59	2.1.1	Expenditure on education, % GDP	111
1.2.3	Cost of redundancy dismissal	18	2.2.1	Tertiary enrolment, % gross	124
2.2.3	Tertiary inbound mobility, %	18	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
3.2	General infrastructure	56	2.3.4	QS university ranking, top 3	74
3.2.3	Gross capital formation, % GDP	33	3.1.1	ICT access	127
4.1.3	Microfinance gross loans, % GDP	23	5.1.3	GERD performed by business, % GDP	89
5.1.2	Firms offering formal training, %	42	5.1.5	Females employed w/advanced degrees, %	124
5.2	Innovation linkages	56	6.2.3	Software spending, % GDP	121
5.2.1	University-industry R&D collaboration	63	7.1.2	Global brand value, top 5,000, % GDP	80
5.2.3	GERD financed by abroad, % GDP	45	7.3	Online creativity	128
5.3.4	FDI net inflows, % GDP	43	7.3.3	Wikipedia edits/mn pop. 15–69	128
6.1.4	Scientific and technical articles/bn PPP\$ GDP	65			
6.2.1	Labor productivity growth, %	49			
6.3.1	Intellectual property receipts, % total trade	50			

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
122	119	Low	SSF	45.7	106.6	2,585	114

	Score/ Value Rank		Score/ Value Rank
 <b>Institutions</b>	<b>56.5 89</b>	 <b>Business sophistication</b>	<b>16.1 118</b>
<b>1.1 Political environment</b>	<b>44.7 105</b>	<b>5.1 Knowledge workers</b>	<b>12.4 120</b>
1.1.1 Political and operational stability*	58.9 100	5.1.1 Knowledge-intensive employment, %	⊙ 10.3 109
1.1.2 Government effectiveness*	37.6 104	5.1.2 Firms offering formal training, %	⊙ 34.7 42 ●◆
<b>1.2 Regulatory environment</b>	<b>67.4 59 ●◆</b>	5.1.3 GERD performed by business, % GDP	⊙ 0.0 89 ○◇
1.2.1 Regulatory quality*	33.7 96	5.1.4 GERD financed by business, %	⊙ 3.4 87 ◆
1.2.2 Rule of law*	38.4 80	5.1.5 Females employed w/advanced degrees, %	⊙ 0.1 124 ○◇
1.2.3 Cost of redundancy dismissal	8.7 18 ●◆	<b>5.2 Innovation linkages</b>	<b>22.6 56 ●</b>
<b>1.3 Business environment</b>	<b>57.5 111</b>	5.2.1 University-industry R&D collaboration†	43.1 63 ●
1.3.1 Ease of starting a business*	71.4 123 ◇	5.2.2 State of cluster development and depth†	43.3 84
1.3.2 Ease of resolving insolvency*	43.6 89	5.2.3 GERD financed by abroad, % GDP	⊙ 0.1 45 ●
		5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0 96
		5.2.5 Patent families/bn PPP\$ GDP	n/a n/a
 <b>Human capital and research</b>	<b>8.1 131 ○◇</b>	<b>5.3 Knowledge absorption</b>	<b>13.5 125 ◇</b>
<b>2.1 Education</b>	<b>11.5 [131]</b>	5.3.1 Intellectual property payments, % total trade	0.3 84
2.1.1 Expenditure on education, % GDP	2.1 111 ○◇	5.3.2 High-tech imports, % total trade	⊙ 6.1 95
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a n/a	5.3.3 ICT services imports, % total trade	0.3 123 ◇
2.1.3 School life expectancy, years	n/a n/a	5.3.4 FDI net inflows, % GDP	3.1 43 ●
2.1.4 PISA scales in reading, maths and science	n/a n/a	5.3.5 Research talent, % in businesses	⊙ 4.0 74
2.1.5 Pupil-teacher ratio, secondary	n/a n/a		
<b>2.2 Tertiary education</b>	<b>12.0 110</b>	 <b>Knowledge and technology outputs</b>	<b>11.9 105</b>
2.2.1 Tertiary enrolment, % gross	⊙ 4.8 124 ○	<b>6.1 Knowledge creation</b>	<b>9.1 86</b>
2.2.2 Graduates in science and engineering, %	n/a n/a	6.1.1 Patents by origin/bn PPP\$ GDP	⊙ 0.1 118
2.2.3 Tertiary inbound mobility, %	⊙ 10.7 18 ●◆	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0 95 ◆
<b>2.3 Research and development (R&amp;D)</b>	<b>0.7 107</b>	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a n/a
2.3.1 Researchers, FTE/mn pop.	⊙ 27.8 103	6.1.4 Scientific and technical articles/bn PPP\$ GDP	13.8 65 ●
2.3.2 Gross expenditure on R&D, % GDP	⊙ 0.1 98	6.1.5 Citable documents H-index	10.6 72 ◆
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0 41 ○◇	<b>6.2 Knowledge impact</b>	<b>19.3 109</b>
2.3.4 QS university ranking, top 3*	0.0 74 ○◇	6.2.1 Labor productivity growth, %	0.9 49 ●
		6.2.2 New businesses/th pop. 15–64	0.9 86
		6.2.3 Software spending, % GDP	0.0 121 ○◇
		6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	1.1 106
		6.2.5 High-tech manufacturing, %	n/a n/a
 <b>Infrastructure</b>	<b>30.0 103</b>	<b>6.3 Knowledge diffusion</b>	<b>7.3 107</b>
<b>3.1 Information and communication technologies (ICTs)</b>	<b>40.0 109 ◇</b>	6.3.1 Intellectual property receipts, % total trade	0.1 50 ●◆
3.1.1 ICT access*	25.4 127 ○	6.3.2 Production and export complexity	32.4 85 ◆
3.1.2 ICT use*	19.2 115 ◆	6.3.3 High-tech exports, % total trade	⊙ 0.3 102
3.1.3 Government's online service*	58.2 90 ◆	6.3.4 ICT services exports, % total trade	0.3 110
3.1.4 E-participation*	57.1 91 ◆		
<b>3.2 General infrastructure</b>	<b>31.1 56 ●</b>	 <b>Creative outputs</b>	<b>9.0 126</b>
3.2.1 Electricity output, GWh/mn pop.	n/a n/a	<b>7.1 Intangible assets</b>	<b>15.6 117</b>
3.2.2 Logistics performance*	24.6 98	7.1.1 Trademarks by origin/bn PPP\$ GDP	⊙ 15.2 99
3.2.3 Gross capital formation, % GDP	26.9 33 ●	7.1.2 Global brand value, top 5,000, % GDP	0.0 80 ○◇
<b>3.3 Ecological sustainability</b>	<b>18.9 109</b>	7.1.3 Industrial designs by origin/bn PPP\$ GDP	⊙ 0.3 99
3.3.1 GDP/unit of energy use	n/a n/a	7.1.4 ICTs and organizational model creation†	42.7 104
3.3.2 Environmental performance*	35.6 101	<b>7.2 Creative goods and services</b>	<b>1.0 [127]</b>
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.4 91	7.2.1 Cultural and creative services exports, % total trade	0.0 96
		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 Printing and other media, % manufacturing	n/a n/a
		7.2.5 Creative goods exports, % total trade	⊙ 0.1 103
 <b>Market sophistication</b>	<b>37.2 111</b>	<b>7.3 Online creativity</b>	<b>3.7 128 ○</b>
<b>4.1 Credit</b>	<b>30.5 104</b>	7.3.1 Generic top-level domains (TLDs)/th pop. 15–69	0.2 116
4.1.1 Ease of getting credit*	60.0 74	7.3.2 Country-code TLDs/th pop. 15–69	0.1 120
4.1.2 Domestic credit to private sector, % GDP	13.9 122	7.3.3 Wikipedia edits/mn pop. 15–69	15.6 128 ○
4.1.3 Microfinance gross loans, % GDP	1.4 23 ●	7.3.4 Mobile app creation/bn PPP\$ GDP	n/a n/a
<b>4.2 Investment</b>	<b>32.2 [62]</b>		
4.2.1 Ease of protecting minority investors*	56.0 82 ◆		
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	0.0 52		
<b>4.3 Trade, diversification, and market scale</b>	<b>49.0 117</b>		
4.3.1 Applied tariff rate, weighted avg., %	8.1 103		
4.3.2 Domestic industry diversification	n/a n/a		
4.3.3 Domestic market scale, bn PPP\$	106.6 81 ◆		

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.





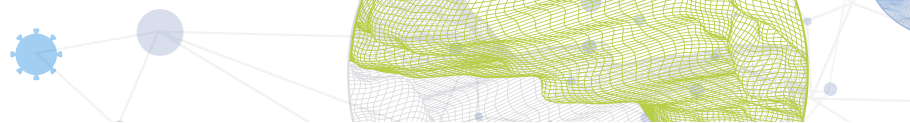
## DATA AVAILABILITY

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

### Missing data for Uganda

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2018	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (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	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
3.2.1	Electricity output, GWh/mn pop.	n/a	2018	International Energy Agency
3.3.1	GDP/unit of energy use	n/a	2018	International Energy Agency
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
4.3.2	Domestic industry diversification	n/a	2018	United Nations Industrial Development Organization
5.2.5	Patent families/bn PPP\$ GDP	n/a	2017	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
6.2.5	High-tech manufacturing, %	n/a	2018	United Nations Industrial Development Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC
7.2.4	Printing and other media, % manufacturing	n/a	2018	United Nations Industrial Development Organization
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2020	App Annie





## Outdated data for Uganda

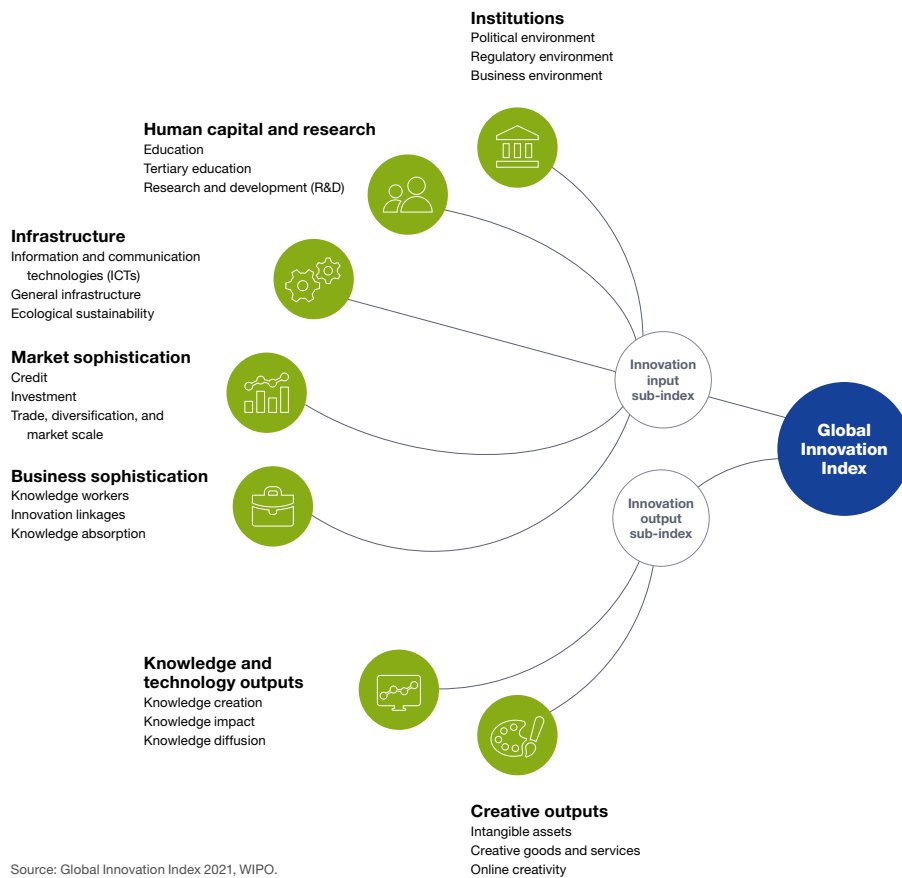
Code	Indicator name	Economy year	Model year	Source
2.2.1	Tertiary enrolment, % gross	2014	2018	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2011	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.1	Knowledge-intensive employment, %	2017	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2013	2019	World Bank
5.1.3	GERD performed by business, % GDP	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	2014	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.5	Females employed w/advanced degrees, %	2017	2019	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2014	2018	UNESCO Institute for Statistics
5.3.2	High-tech imports, % total trade	2018	2019	United Nations, COMTRADE
5.3.5	Research talent, % in businesses	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.1	Patents by origin/bn PPP\$ GDP	2018	2019	World Intellectual Property Organization
6.3.3	High-tech exports, % total trade	2018	2019	United Nations, COMTRADE
7.1.1	Trademarks by origin/bn PPP\$ GDP	2017	2019	World Intellectual Property Organization
7.1.3	Industrial designs by origin/bn PPP\$ GDP	2018	2019	World Intellectual Property Organization
7.2.5	Creative goods exports, % total trade	2018	2019	United Nations, COMTRADE



## 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.