

UNITED REPUBLIC OF TANZANIA

90th

Tanzania ranks 90th 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 Tanzania 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 Tanzania in the GII 2021 is between ranks 89 and 112.

Rankings for Tanzania (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	90	120	65
2020	88	112	67
2019	97	115	73

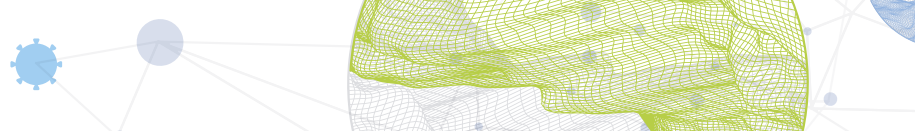
- Tanzania performs better in innovation outputs than innovation inputs in 2021.
- This year Tanzania ranks 120th in innovation inputs, lower than both 2020 and 2019.
- As for innovation outputs, Tanzania ranks 65th. This position is higher than both 2020 and 2019.

12th

Tanzania ranks 12th among the 34 lower middle-income group economies.

5th

Tanzania ranks 5th among the 27 economies in Sub-Saharan Africa.

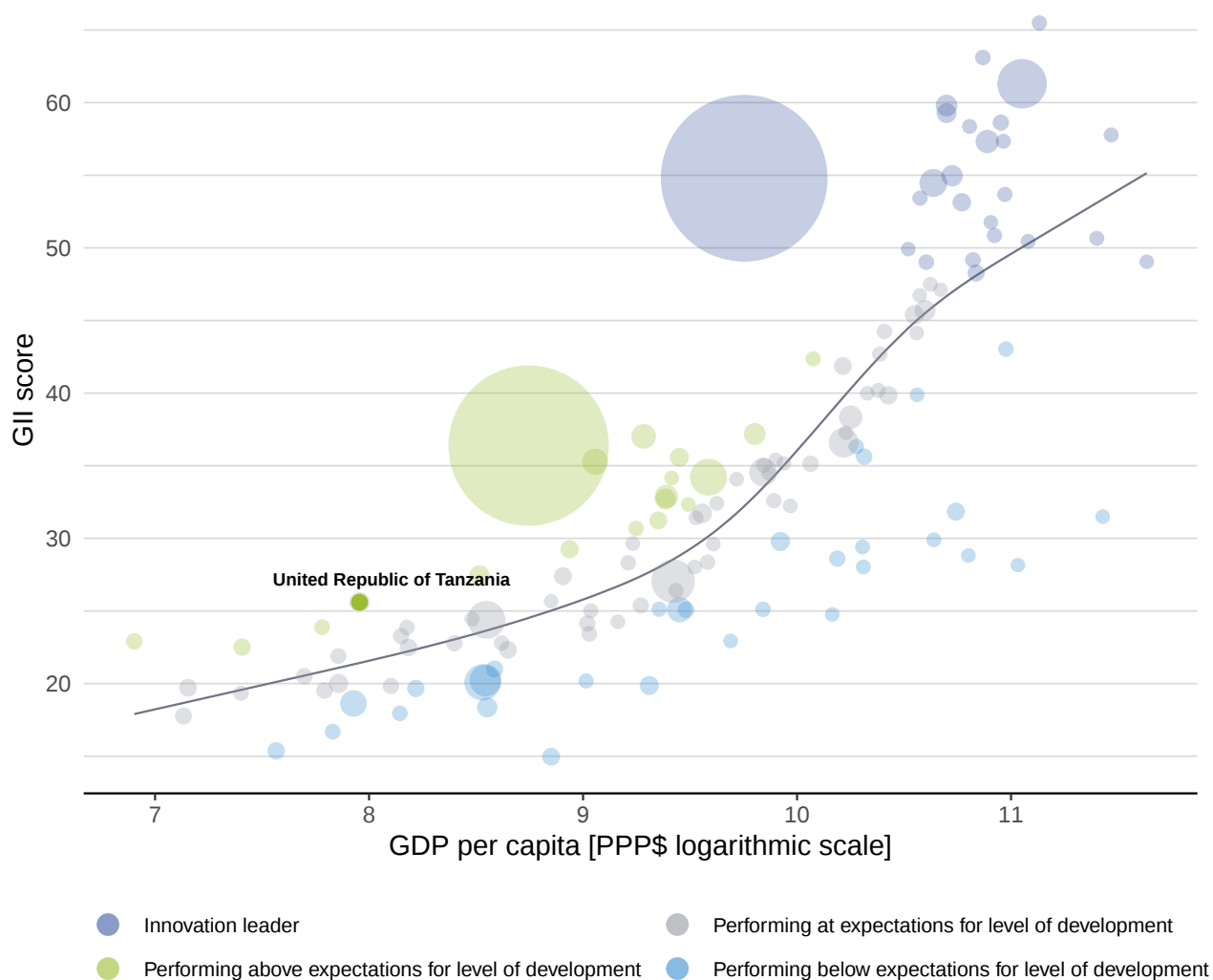


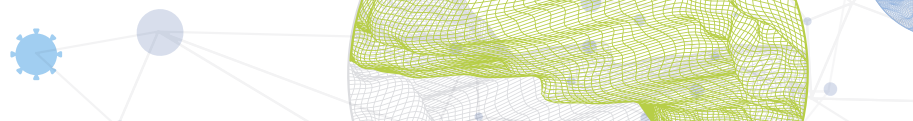
EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Tanzania's performance is above expectations for its level of development.

The positive relationship between innovation and development



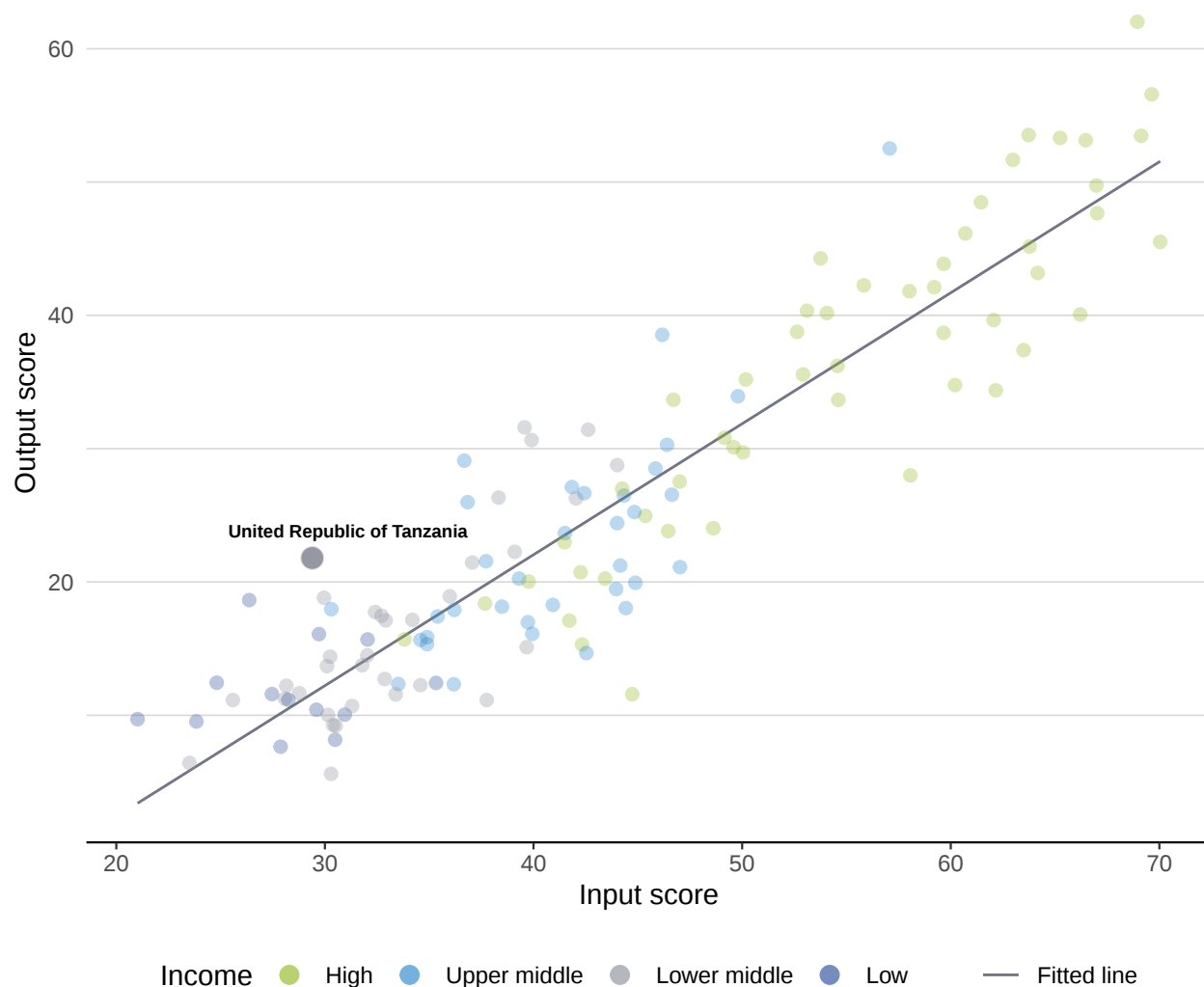


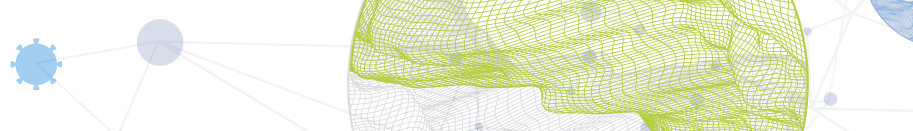
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Tanzania produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance





BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

The seven GII pillar scores for Tanzania

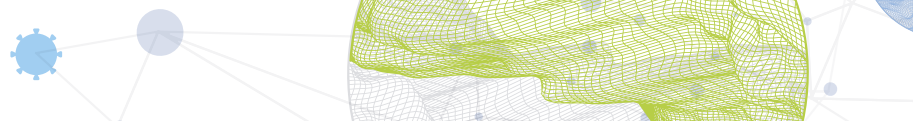


Lower middle-income group economies

Tanzania performs above the lower middle-income group average in two pillars, namely: Institutions; and, Creative outputs.

Sub-Saharan Africa

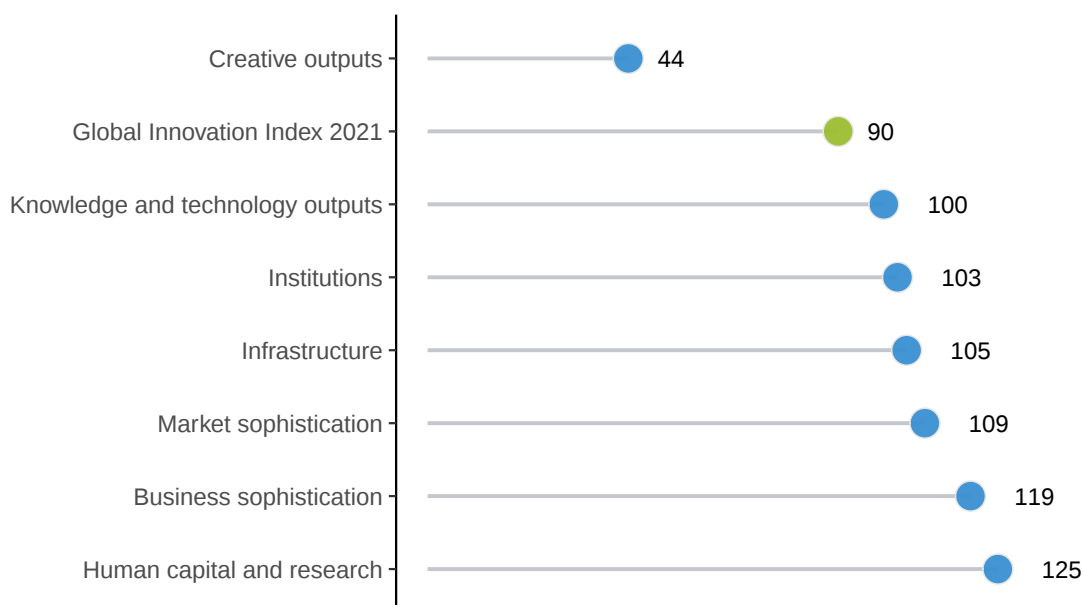
Tanzania performs above the regional average in three pillars, namely: Infrastructure; Knowledge and technology outputs; and, Creative outputs.



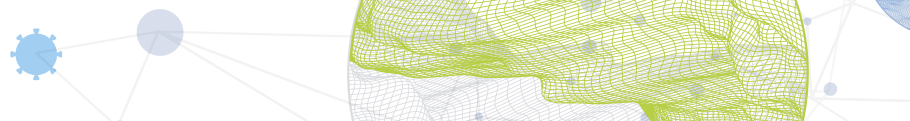
OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Tanzania performs best in Creative outputs and its weakest performance is in Human capital and research.

The seven GII pillar ranks for Tanzania



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 Tanzania in the GII 2021.

Strengths and weaknesses for Tanzania

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	25	2.2	Tertiary education	130
3.2	General infrastructure	38	2.2.1	Tertiary enrolment, % gross	127
3.2.3	Gross capital formation, % GDP	9	2.2.2	Graduates in science and engineering, %	109
5.2	Innovation linkages	59	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
5.2.1	University-industry R&D collaboration	46	2.3.4	QS university ranking, top 3	74
5.2.2	State of cluster development and depth	43	3.1.2	ICT use	130
5.2.3	GERD financed by abroad, % GDP	29	5.1.1	Knowledge-intensive employment, %	124
5.3.2	High-tech imports, % total trade	63	5.1.5	Females employed w/advanced degrees, %	122
6.2.1	Labor productivity growth, %	10	6.1.2	PCT patents by origin/bn PPP\$ GDP	98
6.3.3	High-tech exports, % total trade	57	6.2.3	Software spending, % GDP	124
7.2.4	Printing and other media, % manufacturing	22	7.3	Online creativity	130
7.2.5	Creative goods exports, % total trade	25	7.3.3	Wikipedia edits/mn pop. 15–69	130

United Republic of Tanzania

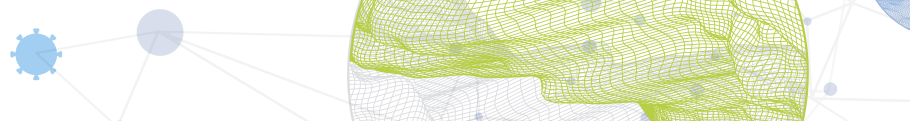
GII 2021 rank

90

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
65	120	Lower middle	SSF	59.7	165.3	2,851	88

		Score/ Value	Rank			Score/ Value	Rank
	Institutions	52.7	103		Business sophistication	16.0	119
1.1 Political environment		38.0	122	5.1 Knowledge workers		9.8	124
1.1.1 Political and operational stability*		51.8	119	5.1.1 Knowledge-intensive employment, %	⊙	3.4	124
1.1.2 Government effectiveness*		31.1	122	5.1.2 Firms offering formal training, %	⊙	30.7	50
1.2 Regulatory environment		63.2	73	5.1.3 GERD performed by business, % GDP		n/a	n/a
1.2.1 Regulatory quality*		26.7	108	5.1.4 GERD financed by business, %	⊙	0.1	101
1.2.2 Rule of law*		31.5	102	5.1.5 Females employed w/advanced degrees, %	⊙	0.4	122
1.2.3 Cost of redundancy dismissal		9.3	25	5.2 Innovation linkages		22.1	59
1.3 Business environment		56.7	114	5.2.1 University-industry R&D collaboration†		47.2	46
1.3.1 Ease of starting a business*		74.4	119	5.2.2 State of cluster development and depth†		50.7	43
1.3.2 Ease of resolving insolvency*		39.1	102	5.2.3 GERD financed by abroad, % GDP	⊙	0.2	29
				5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP		0.0	104
				5.2.5 Patent families/bn PPP\$ GDP		0.0	96
	Human capital and research	10.9	125	5.3 Knowledge absorption		16.2	111
2.1 Education		29.1	117	5.3.1 Intellectual property payments, % total trade		0.1	112
2.1.1 Expenditure on education, % GDP		3.7	78	5.3.2 High-tech imports, % total trade	⊙	7.8	63
2.1.2 Government funding/pupil, secondary, % GDP/cap	⊙	14.9	76	5.3.3 ICT services imports, % total trade		0.2	127
2.1.3 School life expectancy, years		9.1	111	5.3.4 FDI net inflows, % GDP		1.8	84
2.1.4 PISA scales in reading, maths and science		n/a	n/a	5.3.5 Research talent, % in businesses		n/a	n/a
2.1.5 Pupil-teacher ratio, secondary		22.1	101		Knowledge and technology outputs	12.2	100
2.2 Tertiary education		1.0	130	6.1 Knowledge creation		5.5	109
2.2.1 Tertiary enrolment, % gross		3.1	127	6.1.1 Patents by origin/bn PPP\$ GDP	⊙	0.2	99
2.2.2 Graduates in science and engineering, %		9.5	109	6.1.2 PCT patents by origin/bn PPP\$ GDP		0.0	98
2.2.3 Tertiary inbound mobility, %		n/a	n/a	6.1.3 Utility models by origin/bn PPP\$ GDP		0.0	74
2.3 Research and development (R&D)		2.6	90	6.1.4 Scientific and technical articles/bn PPP\$ GDP		9.0	91
2.3.1 Researchers, FTE/mn pop.	⊙	19.2	105	6.1.5 Citable documents H-index		10.0	79
2.3.2 Gross expenditure on R&D, % GDP	⊙	0.5	65	6.2 Knowledge impact		20.7	101
2.3.3 Global corporate R&D investors, top 3, mn US\$		0.0	41	6.2.1 Labor productivity growth, %		4.1	10
2.3.4 QS university ranking, top 3*		0.0	74	6.2.2 New businesses/th pop. 15–64		0.2	112
	Infrastructure	29.9	105	6.2.3 Software spending, % GDP		0.0	124
3.1 Information and communication technologies (ICTs)		37.1	115	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP		0.5	121
3.1.1 ICT access*		27.7	124	6.2.5 High-tech manufacturing, %		8.7	92
3.1.2 ICT use*		9.6	130	6.3 Knowledge diffusion		10.4	94
3.1.3 Government's online service*		55.3	95	6.3.1 Intellectual property receipts, % total trade		0.0	109
3.1.4 E-participation*		56.0	93	6.3.2 Production and export complexity		41.7	67
3.2 General infrastructure		35.6	38	6.3.3 High-tech exports, % total trade	⊙	2.0	57
3.2.1 Electricity output, GWh/mn pop.		128.4	119	6.3.4 ICT services exports, % total trade		0.2	120
3.2.2 Logistics performance*		n/a	n/a		Creative outputs	31.4	[44]
3.2.3 Gross capital formation, % GDP		38.1	9	7.1 Intangible assets		47.2	[22]
3.3 Ecological sustainability		16.9	116	7.1.1 Trademarks by origin/bn PPP\$ GDP		n/a	n/a
3.3.1 GDP/unit of energy use		8.0	91	7.1.2 Global brand value, top 5,000, % GDP		n/a	n/a
3.3.2 Environmental performance*		31.1	116	7.1.3 Industrial designs by origin/bn PPP\$ GDP		n/a	n/a
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP		0.2	115	7.1.4 ICTs and organizational model creation†		47.2	94
	Market sophistication	37.5	109	7.2 Creative goods and services		28.7	[28]
4.1 Credit		27.6	114	7.2.1 Cultural and creative services exports, % total trade		n/a	n/a
4.1.1 Ease of getting credit*		65.0	61	7.2.2 National feature films/mn pop. 15–69		n/a	n/a
4.1.2 Domestic credit to private sector, % GDP		12.1	124	7.2.3 Entertainment and media market/th pop. 15–69		n/a	n/a
4.1.3 Microfinance gross loans, % GDP		0.1	55	7.2.4 Printing and other media, % manufacturing	⊙	1.7	22
4.2 Investment		27.4	[74]	7.2.5 Creative goods exports, % total trade	⊙	2.3	25
4.2.1 Ease of protecting minority investors*		50.0	92	7.3 Online creativity		2.5	130
4.2.2 Market capitalization, % GDP		n/a	n/a	7.3.1 Generic top-level domains (TLDs)/th pop. 15–69		0.2	120
4.2.3 Venture capital investors, deals/bn PPP\$ GDP		n/a	n/a	7.3.2 Country-code TLDs/th pop. 15–69		0.2	111
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP		0.0	64	7.3.3 Wikipedia edits/mn pop. 15–69		12.4	130
4.3 Trade, diversification, and market scale		57.6	103	7.3.4 Mobile app creation/bn PPP\$ GDP		n/a	n/a
4.3.1 Applied tariff rate, weighted avg., %		8.4	105				
4.3.2 Domestic industry diversification		67.0	100				
4.3.3 Domestic market scale, bn PPP\$		165.3	70				

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.

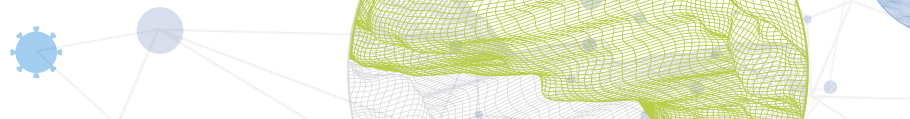


DATA AVAILABILITY

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

Missing data for Tanzania

Code	Indicator name	Economy year	Model year	Source
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.2.3	Tertiary inbound mobility, %	n/a	2018	UNESCO Institute for Statistics
3.2.2	Logistics performance	n/a	2018	World Bank
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
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
7.1.1	Trademarks by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
7.1.2	Global brand value, top 5,000, % GDP	n/a	2020	Brand Finance
7.1.3	Industrial designs by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
7.2.1	Cultural and creative services exports, % total trade	n/a	2019	World Trade 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
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2020	App Annie



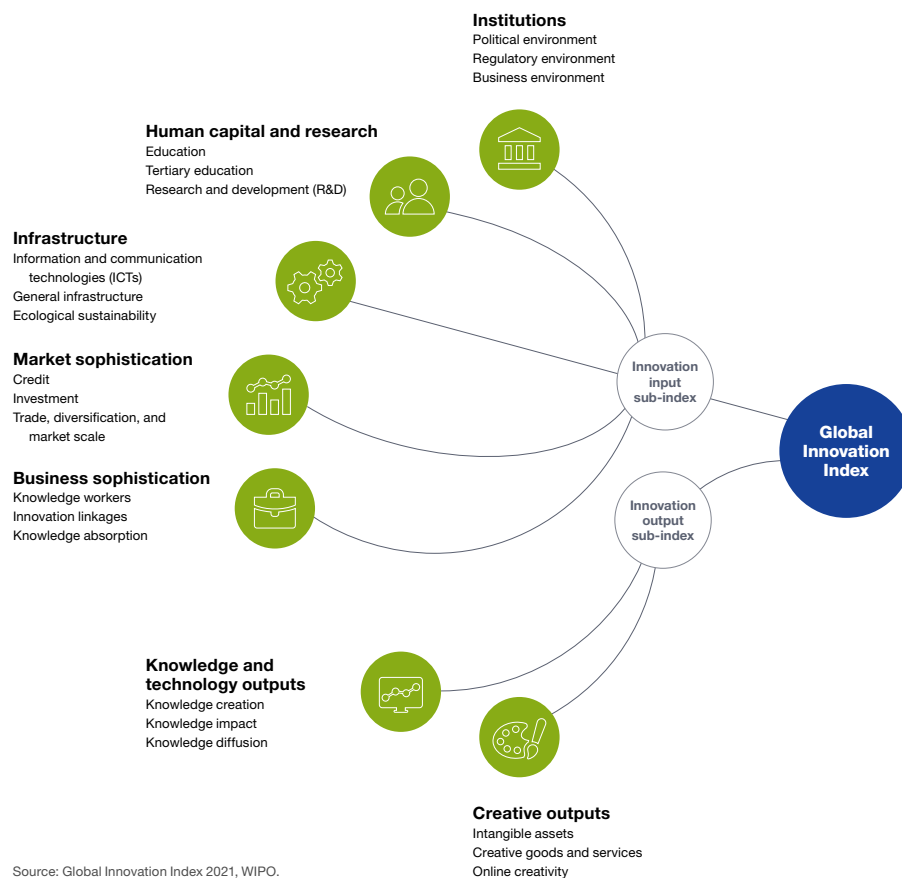
Outdated data for Tanzania

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2014	2017	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2013	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2013	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.1	Knowledge-intensive employment, %	2014	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2013	2019	World Bank
5.1.4	GERD financed by business, %	2010	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.5	Females employed w/advanced degrees, %	2014	2019	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2010	2018	UNESCO Institute for Statistics
5.3.2	High-tech imports, % total trade	2018	2019	United Nations, COMTRADE
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
7.2.4	Printing and other media, % manufacturing	2016	2018	United Nations Industrial Development 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.