



Global Innovation Index 2021



MALAWI

107th Malawi ranks 107th 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 Malawi 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 Malawi in the GII 2021 is between ranks 100 and 116.

Rankings for Malawi (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	107	118	93
2020	111	114	103
2019	118	119	112

- Malawi performs better in innovation outputs than innovation inputs in 2021.
- This year Malawi ranks 118th in innovation inputs, lower than last year but higher than 2019.
- As for innovation outputs, Malawi ranks 93rd. This position is higher than both 2020 and 2019.

3rd Malawi ranks 3rd among the 13 low-income group economies.

10th Malawi ranks 10th among the 27 economies in Sub-Saharan Africa.

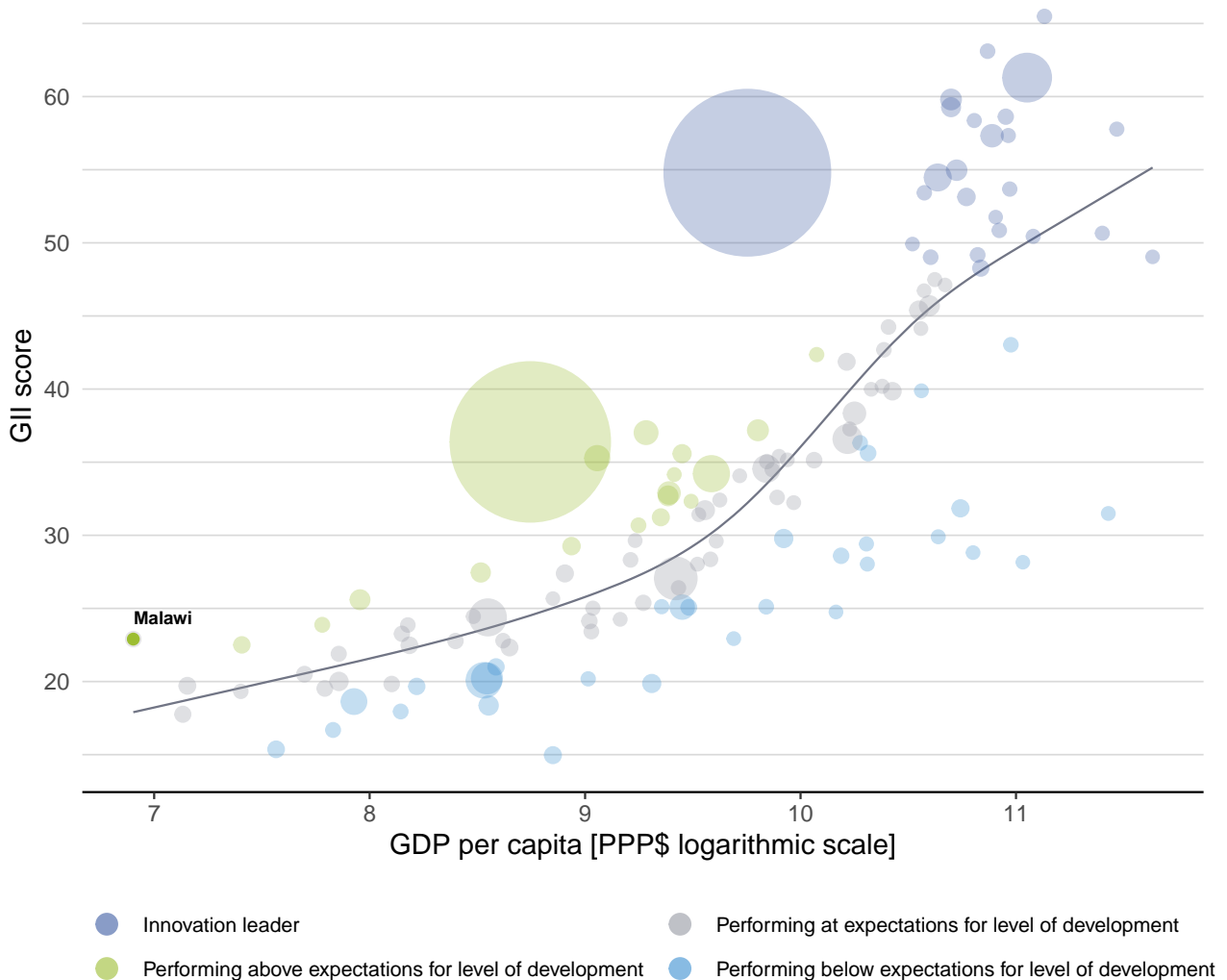


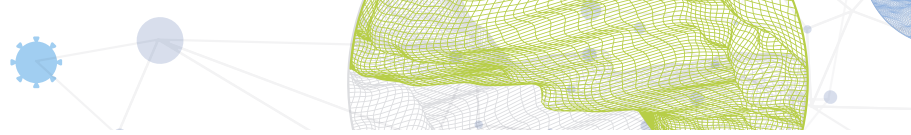
EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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

The positive relationship between innovation and development



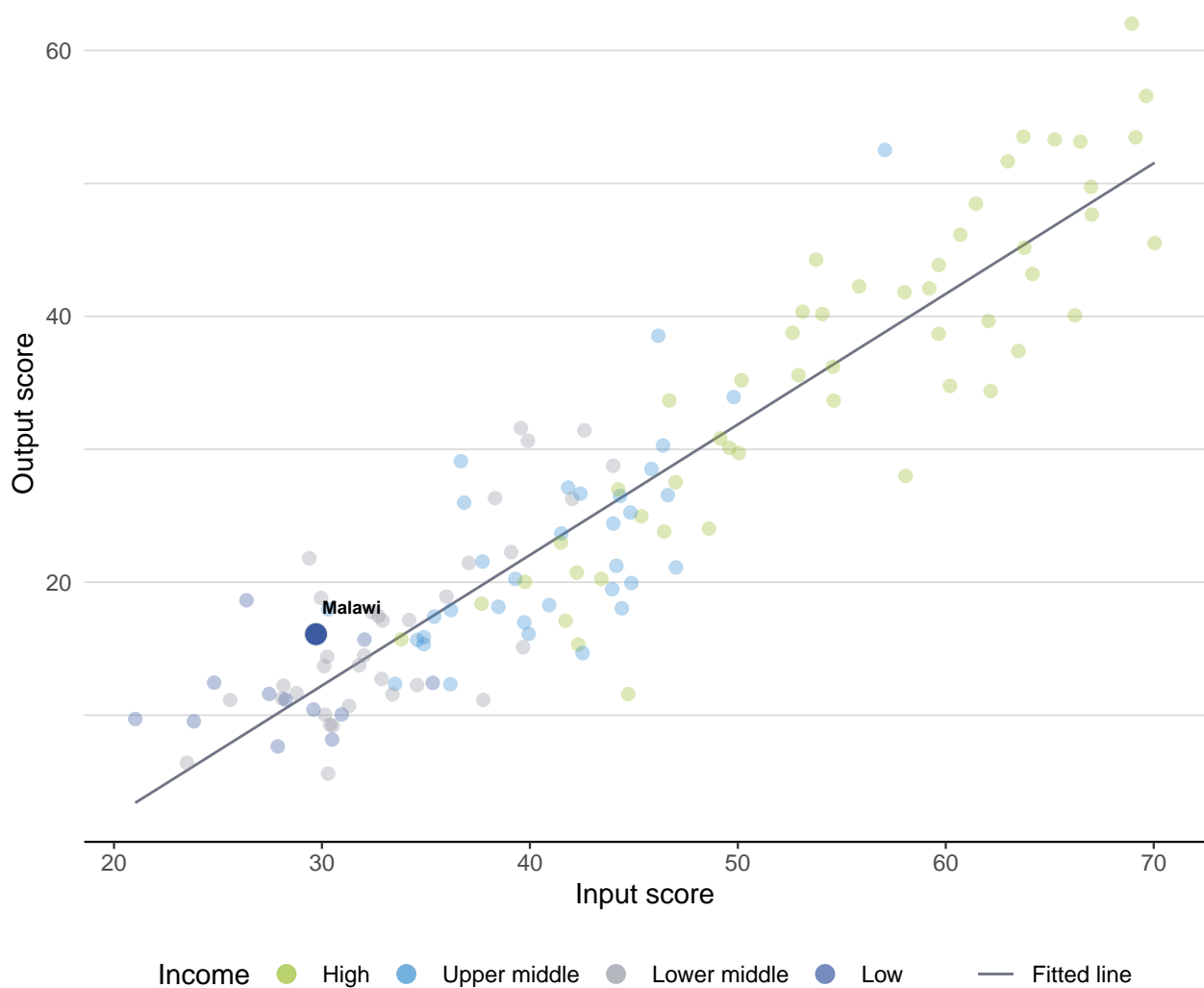


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Malawi produces more 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 Malawi



Low-income group economies

Malawi performs above the low-income group average in five pillars, namely: Institutions; Market sophistication; Business sophistication; Knowledge and technology outputs; and, Creative outputs.

Sub-Saharan Africa

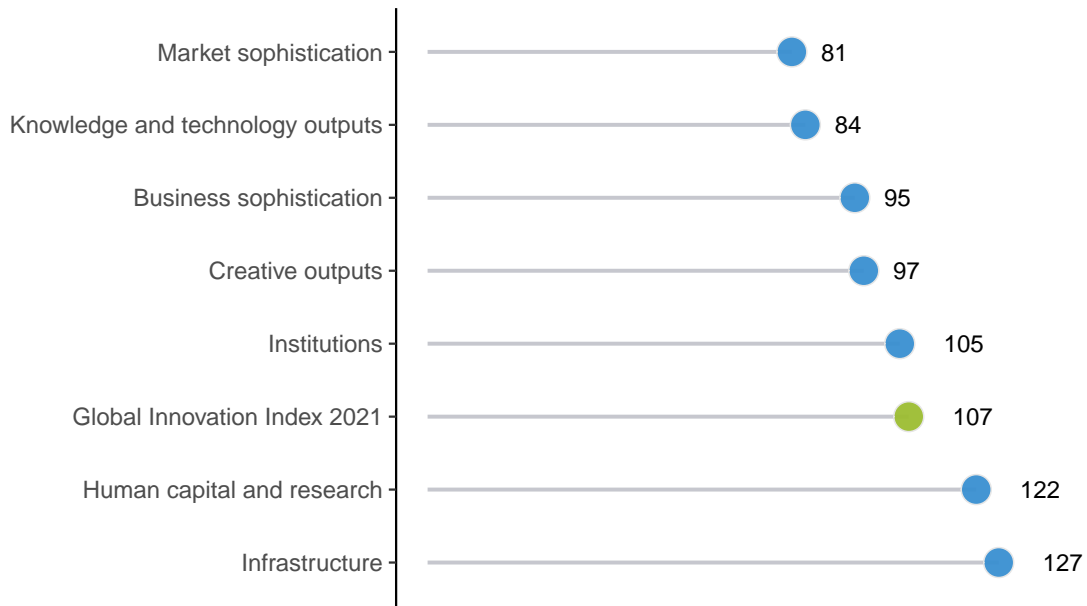
Malawi performs above the regional average in four pillars, namely: Market sophistication; Business sophistication; Knowledge and technology outputs; and, Creative outputs.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Malawi performs best in Market sophistication and its weakest performance is in Infrastructure.

The seven GII pillar ranks for Malawi



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 Malawi in the GII 2021.

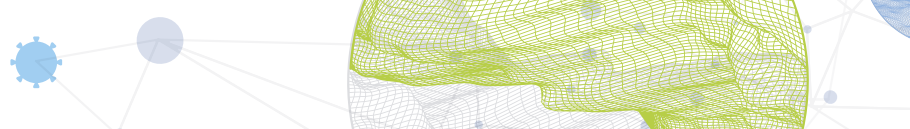
Strengths and weaknesses for Malawi

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.1.2	Government funding/pupil, secondary, % GDP/cap	20	2.1.5	Pupil-teacher ratio, secondary	123
4.1.1	Ease of getting credit	10	2.2	Tertiary education	129
4.1.3	Microfinance gross loans, % GDP	36	2.2.1	Tertiary enrolment, % gross	128
4.2.4	Venture capital recipients, deals/bn PPP\$ GDP	31	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	22	2.3.4	QS university ranking, top 3	74
5.3.2	High-tech imports, % total trade	38	3.1.1	ICT access	131
6.1	Knowledge creation	56	4.1.2	Domestic credit to private sector, % GDP	128
6.1.4	Scientific and technical articles/bn PPP\$ GDP	26	5.1.1	Knowledge-intensive employment, %	122
6.2.1	Labor productivity growth, %	39	5.2.5	Patent families/bn PPP\$ GDP	100
6.3.4	ICT services exports, % total trade	48	6.1.2	PCT patents by origin/bn PPP\$ GDP	98
7.2.4	Printing and other media, % manufacturing	36	6.2.2	New businesses/th pop. 15–64	119
			7.1.4	ICTs and organizational model creation	124

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
93	118	Low	SSF	19.1	20.8	995	111

	Score/Value	Rank		Score/Value	Rank
 Institutions	51.8	105	 Business sophistication	20.1	95
1.1 Political environment	41.7	112	5.1 Knowledge workers	15.3	[111]
1.1.1 Political and operational stability*	57.1	106	5.1.1 Knowledge-intensive employment, %	3.7	122
1.1.2 Government effectiveness*	34.0	114	5.1.2 Firms offering formal training, %	32.9	45
1.2 Regulatory environment	57.2	89	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	25.2	112	5.1.4 GERD financed by business, %	n/a	n/a
1.2.2 Rule of law*	38.0	81	5.1.5 Females employed w/advanced degrees, %	0.6	119
1.2.3 Cost of redundancy dismissal	16.7	65	5.2 Innovation linkages	22.4	57
1.3 Business environment	56.4	115	5.2.1 University-industry R&D collaboration†	31.7	106
1.3.1 Ease of starting a business*	77.9	115	5.2.2 State of cluster development and depth†	35.5	113
1.3.2 Ease of resolving insolvency*	34.9	112	5.2.3 GERD financed by abroad, % GDP	n/a	n/a
			5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.1	22
			5.2.5 Patent families/bn PPP\$ GDP	0.0	100
 Human capital and research	11.8	122	5.3 Knowledge absorption	22.7	77
2.1 Education	34.2	107	5.3.1 Intellectual property payments, % total trade	0.2	96
2.1.1 Expenditure on education, % GDP	4.7	51	5.3.2 High-tech imports, % total trade	9.8	38
2.1.2 Government funding/pupil, secondary, % GDP/cap	24.0	20	5.3.3 ICT services imports, % total trade	1.1	70
2.1.3 School life expectancy, years	10.9	100	5.3.4 FDI net inflows, % GDP	1.4	99
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	68.1	123	 Knowledge and technology outputs	15.8	84
2.2 Tertiary education	1.0	129	6.1 Knowledge creation	18.0	56
2.2.1 Tertiary enrolment, % gross	0.8	128	6.1.1 Patents by origin/bn PPP\$ GDP	0.2	100
2.2.2 Graduates in science and engineering, %	n/a	n/a	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0	98
2.2.3 Tertiary inbound mobility, %	1.1	86	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.3 Research and development (R&D)	0.1	117	6.1.4 Scientific and technical articles/bn PPP\$ GDP	35.1	26
2.3.1 Researchers, FTE/mn pop.	50.4	93	6.1.5 Citable documents H-index	8.0	85
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a	6.2 Knowledge impact	17.5	114
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0	41	6.2.1 Labor productivity growth, %	1.2	39
2.3.4 QS university ranking, top 3*	0.0	74	6.2.2 New businesses/th pop. 15–64	0.1	119
			6.2.3 Software spending, % GDP	0.0	107
			6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	0.9	112
			6.2.5 High-tech manufacturing, %	8.6	93
 Infrastructure	21.1	127	6.3 Knowledge diffusion	11.8	85
3.1 Information and communication technologies (ICTs)	30.5	124	6.3.1 Intellectual property receipts, % total trade	n/a	n/a
3.1.1 ICT access*	22.8	131	6.3.2 Production and export complexity	18.0	113
3.1.2 ICT use*	15.2	120	6.3.3 High-tech exports, % total trade	0.2	106
3.1.3 Government's online service*	42.4	115	6.3.4 ICT services exports, % total trade	2.3	48
3.1.4 E-participation*	41.7	111	 Creative outputs	16.4	[97]
3.2 General infrastructure	13.1	122	7.1 Intangible assets	25.4	[86]
3.2.1 Electricity output, GWh/mn pop.	n/a	n/a	7.1.1 Trademarks by origin/bn PPP\$ GDP	28.0	78
3.2.2 Logistics performance*	25.0	93	7.1.2 Global brand value, top 5,000, % GDP	n/a	n/a
3.2.3 Gross capital formation, % GDP	10.7	123	7.1.3 Industrial designs by origin/bn PPP\$ GDP	n/a	n/a
3.3 Ecological sustainability	19.6	102	7.1.4 ICTs and organizational model creation†	28.7	124
3.3.1 GDP/unit of energy use	n/a	n/a	7.2 Creative goods and services	7.5	[91]
3.3.2 Environmental performance*	38.3	93	7.2.1 Cultural and creative services exports, % total trade	0.1	76
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	114	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	1.2	36
			7.2.5 Creative goods exports, % total trade	0.2	85
 Market sophistication	43.7	81	7.3 Online creativity	7.4	111
4.1 Credit	38.6	74	7.3.1 Generic top-level domains (TLDs)/th pop. 15–69	0.2	118
4.1.1 Ease of getting credit*	90.0	10	7.3.2 Country-code TLDs/th pop. 15–69	0.0	125
4.1.2 Domestic credit to private sector, % GDP	10.5	128	7.3.3 Wikipedia edits/mn pop. 15–69	25.5	112
4.1.3 Microfinance gross loans, % GDP	0.5	36	7.3.4 Mobile app creation/bn PPP\$ GDP	n/a	n/a
4.2 Investment	37.9	[41]			
4.2.1 Ease of protecting minority investors*	58.0	77			
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	31			
4.3 Trade, diversification, and market scale	54.8	109			
4.3.1 Applied tariff rate, weighted avg., %	4.2	78			
4.3.2 Domestic industry diversification	70.2	97			
4.3.3 Domestic market scale, bn PPP\$	20.8	128			

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.

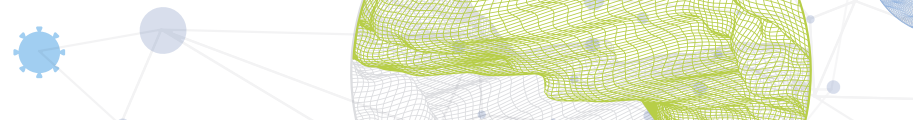


DATA AVAILABILITY

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

Missing data for Malawi

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)
2.2.2	Graduates in science and engineering, %	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2019	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
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2018	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2019	World Trade 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
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics



Code	Indicator name	Economy year	Model year	Source
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 Malawi

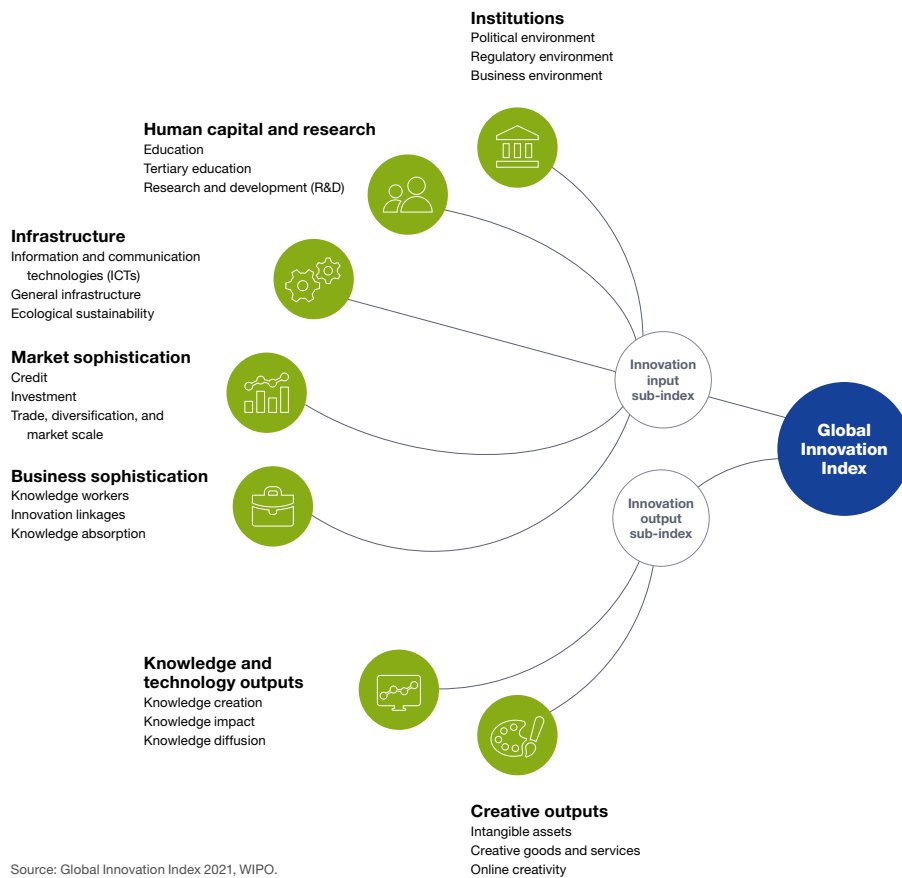
Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2016	2017	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2011	2018	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2011	2018	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2010	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2010	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.2	Domestic credit to private sector, % GDP	2016	2019	International Monetary Fund
4.3.2	Domestic industry diversification	2012	2018	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2013	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2014	2019	World Bank
5.1.5	Females employed w/advanced degrees, %	2017	2019	International Labour Organization
6.1.1	Patents by origin/bn PPP\$ GDP	2016	2019	World Intellectual Property Organization
6.2.2	New businesses/th pop. 15–64	2009	2018	World Bank
6.2.5	High-tech manufacturing, %	2012	2018	United Nations Industrial Development Organization
7.1.1	Trademarks by origin/bn PPP\$ GDP	2016	2019	World Intellectual Property Organization
7.2.4	Printing and other media, % manufacturing	2010	2018	United Nations Industrial Development Organization



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.