



GLOBAL INNOVATION INDEX 2019

BURUNDI

128th

Burundi ranks 128th among the 129 economies featured in the GII 2019.

The Global Innovation Index (GII) is a ranking of world economies based on 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 Burundi over the past three years, noting that data availability and the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Burundi's ranking in the GII 2019 is between 125 and 128.

Burundi's Rankings, 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
2019	128	128	126
2018	n/a	n/a	n/a
2017	122	115	122

- Burundi performs better in Innovation Outputs than Inputs in 2019.
- This year Burundi ranks 128th in Innovation Inputs, worse compared to 2017.
- As for Innovation Outputs, Burundi ranks 126th. This position is worse compared to 2017.

18th

Burundi ranks 18th among the 19 low-income economies.

26th

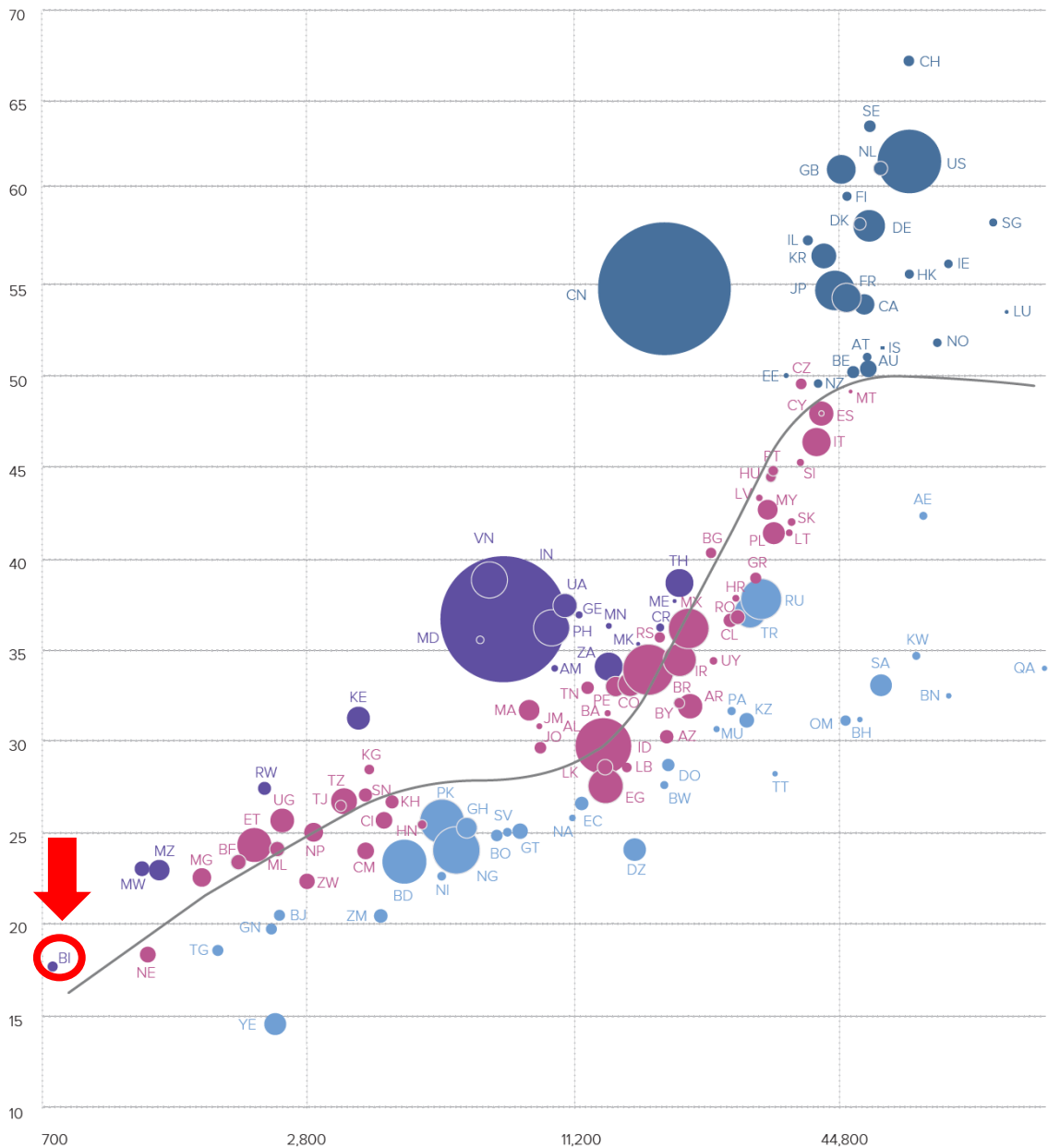
Burundi ranks 26th among the 26 economies in Sub-Saharan Africa.

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 considered Innovation under-performers relative to GDP.

Relative to GDP, Burundi performs above its expected level of development.

GII scores and GDP per capita in PPP US\$ (bubbles sized by population)



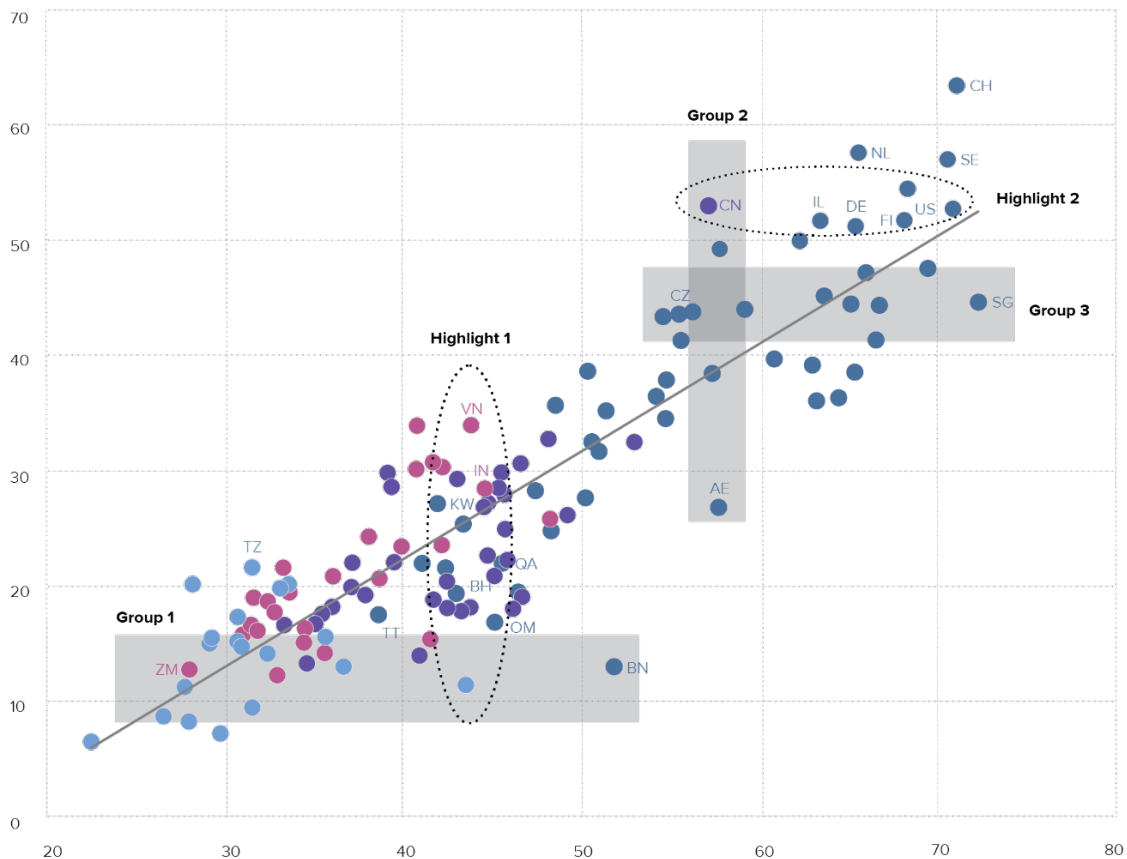
- ▲ GII score
- ▶ GDP per capita in PPP\$ (logarithmic scale)
- Innovation leaders
- Innovation achievers
- Performing at expectations for level of development
- Performing below expectations for level of development

EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

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

Innovation input/output performance by income group, 2019

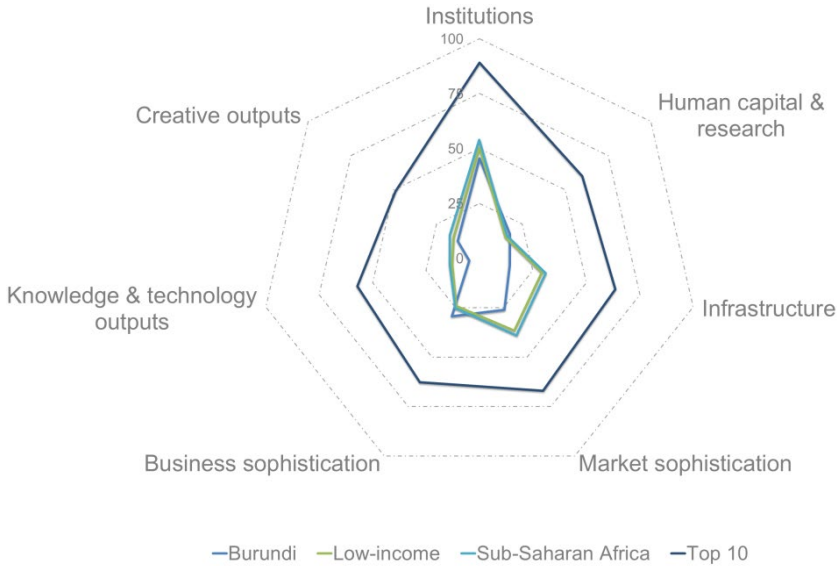


- ▲ Output score
- ▶ Input score
- High income
- Upper-middle income
- Lower-middle income
- Low income
- Fitted values

AE United Arab Emirates	CZ Czech Republic	NL Netherlands	TZ United Republic of Tanzania
BH Bahrain	DE Germany	OM Oman	US United States of America
BN Brunei Darussalam	FI Finland	QA Qatar	VN Viet Nam
CH Switzerland	IL Israel	SE Sweden	ZM Zambia
CN China	IN India	SG Singapore	
	KW Kuwait	TT Trinidad and Tobago	

BENCHMARKING BURUNDI TO OTHER LOW-INCOME ECONOMIES AND THE SUB-SAHARAN AFRICA REGION

Burundi's scores in the seven GII pillars



Low-income economies

Burundi has high scores in 2 out of the 7 GII pillars: Human capital & research and Business sophistication which are above the average of the low-income group.

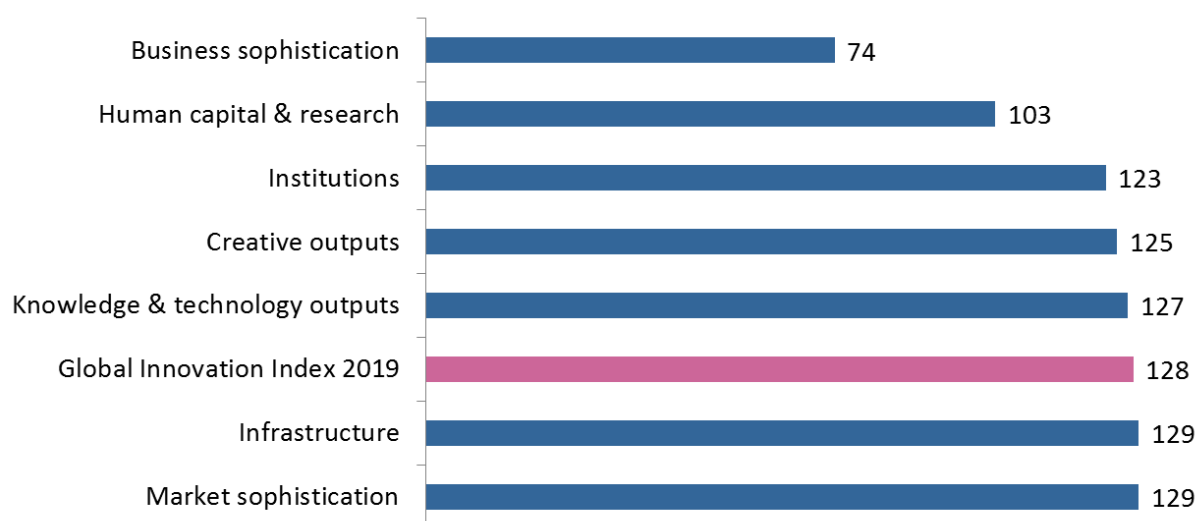
Sub-Saharan Africa Region

Compared to other economies in Sub-Saharan Africa, Burundi performs above average in 2 out of the 7 GII pillars: Human capital & research and Business sophistication.

Top ranks are found in sub-pillars Education, Investment, Innovation linkages, and Knowledge absorption where the country ranks in the top 90 worldwide.

OVERVIEW OF BURUNDI'S RANKINGS IN THE 7 GII AREAS

Burundi performs the best in Business sophistication and its weakest performance is in Infrastructure and Market sophistication.



*The highest possible ranking in each pillar is 1.

BURUNDI'S INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of Burundi's strengths and weaknesses in the GII 2019.

Strengths		
Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal, salary weeks	66
1.3.1	Ease of starting a business*	15
2.1.2	Government funding/pupil, secondary, % GDP/cap	15
4.1.3	Microfinance gross loans, % GDP	42
5.1.2	Firms offering formal training, % firms	47
5.2	Innovation linkages	30
5.2.3	GERD financed by abroad, %	7
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	33
5.3	Knowledge absorption	65
5.3.2	High-tech imports, % total trade	44
5.3.3	ICT services imports, % total trade	37
7.2.1	Cultural & creative services exports, % total trade	66

Weaknesses		
Code	Indicator name	Rank
1.1	Political environment	128
1.1.1	Political & operational stability*	128
1.1.2	Government effectiveness*	128
1.2.2	Rule of law*	128
2.3.3	Global R&D companies, top 3, in mn US\$	43
2.3.4	QS university ranking, average score top 3*	78
3	Infrastructure	129
3.1.2	ICT use*	126
3.2	General infrastructure	129
3.2.2	Logistics performance*	122
3.3	Ecological sustainability	128
3.3.2	Environmental performance*	127
4	Market sophistication	129
4.1	Credit	128
4.3	Trade, competition, & market scale	128
4.3.3	Domestic market scale, bn PPP\$	129
6.1.5	Citable documents H index	128

STRENGTHS

- GII strengths for Burundi are found in five of the seven GII pillars.
- Most of these strengths are in Business sophistication (74), the top ranked GII pillar for this country. Here Burundi shows strengths in sub-pillars Innovation linkages (30) and Knowledge absorption (65) and in five indicators: Firms offering formal training (47), R&D financed by abroad (7), Patent families in two or more offices (33), High-tech imports (44), and ICT services imports (37).
- In Institutions (123), Burundi presents strengths in two indicators: Cost of redundancy dismissal (66) and Ease of starting a business (15).
- In Human capital & research (103), indicator Government funding per pupil (15) is a strength for Burundi.
- In Market sophistication (129), Burundi's strength is indicator Microfinance gross loans (42).
- In Creative outputs (125), indicator Cultural & creative services exports (66) is a GII strength of the country.

WEAKNESSES

- Burundi's weaknesses in the GII are found in five of the seven GII pillars.
- Pillars Infrastructure (129) and Market sophistication (129) are notable weaknesses of Burundi.
- Several of Burundi's weaknesses are in Infrastructure (129), where GII weaknesses are sub-pillars General infrastructure (129) and Ecological sustainability (128) and three indicators: ICT use (126), Logistics performance (122), and Environmental performance (127).
- In Market sophistication (129), relative weaknesses are also two sub-pillars - Credit (128) and Trade, competition, & market scale (128) - and indicator Domestic market scale (129).
- Four other weaknesses are in Institutions (123), where GII weaknesses are sub-pillar Political environment (128) and three indicators: Political & operational stability (128), Government effectiveness (128), and Rule of law (128).
- In Human capital & research (103), Burundi's weaknesses are indicators Global R&D companies (43) and Quality of universities (78).
- On the innovation output side of the GII only one relative weakness is found in indicator Quality of scientific publications (128) in Knowledge & technology outputs (127).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
126	128	Low	SSF	10.9	8.0	735.2	n/a
				Score/Value	Rank		
INSTITUTIONS				45.6	123		
1.1	Political environment	22.8	128	○ ◇			
1.1.1	Political and operational stability*	40.4	128	○			
1.1.2	Government effectiveness*	14.1	128	○ ◇			
1.2	Regulatory environment	51.2	108				
1.2.1	Regulatory quality*	19.5	118				
1.2.2	Rule of law*	9.5	128	○ ◇			
1.2.3	Cost of redundancy dismissal, salary weeks	15.9	66	●			
1.3	Business environment	62.7	92				
1.3.1	Ease of starting a business*	94.8	15	● ◆			
1.3.2	Ease of resolving insolvency*	30.6	117	◇			
HUMAN CAPITAL & RESEARCH				17.7	103		
2.1	Education	38.7	88				
2.1.1	Expenditure on education, % GDP	4.3	68				
2.1.2	Government funding/pupil, secondary, % GDP/cap.Ⓞ	28.0	15	●			
2.1.3	School life expectancy, years	11.3	95				
2.1.4	PISA scales in reading, maths, & science	n/a	n/a				
2.1.5	Pupil-teacher ratio, secondary	28.0	103				
2.2	Tertiary education	13.8	101				
2.2.1	Tertiary enrolment, % gross	6.2	115				
2.2.2	Graduates in science & engineering, %	16.2	80				
2.2.3	Tertiary inbound mobility, %	2.9	66				
2.3	Research & development (R&D)	0.8	109				
2.3.1	Researchers, FTE/mn pop.	n/a	n/a				
2.3.2	Gross expenditure on R&D, % GDP.Ⓞ	0.1	100				
2.3.3	Global R&D companies, avg. exp. top 3, mn US\$	0.0	43	○ ◇			
2.3.4	QS university ranking, average score top 3*	0.0	78	○ ◇			
INFRASTRUCTURE				14.0	129	○ ◇	
3.1	Information & communication technologies (ICTs)	22.9	126				
3.1.1	ICT access*	24.0	122				
3.1.2	ICT use*	6.1	126	○ ◇			
3.1.3	Government's online service*	30.6	119				
3.1.4	E-participation*	30.9	119				
3.2	General infrastructure	0.2	129	○ ◇			
3.2.1	Electricity output, kWh/mn pop.	n/a	n/a				
3.2.2	Logistics performance*	0.0	122	○ ◇			
3.2.3	Gross capital formation, % GDP	6.0	124	◇			
3.3	Ecological sustainability	18.9	128	○			
3.3.1	GDP/unit of energy use	n/a	n/a				
3.3.2	Environmental performance*	27.4	127	○ ◇			
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP..	0.2	108				
MARKET SOPHISTICATION				26.1	129	○ ◇	
4.1	Credit	6.1	128	○ ◇			
4.1.1	Ease of getting credit*	10.0	126	◇			
4.1.2	Domestic credit to private sector, % GDP	15.5	115				
4.1.3	Microfinance gross loans, % GDP.Ⓞ	0.2	42	●			
4.2	Investment	43.3	[61]				
4.2.1	Ease of protecting minority investors*	43.3	105				
4.2.2	Market capitalization, % GDP	n/a	n/a				
4.2.3	Venture capital deals/bn PPP\$ GDP	n/a	n/a				
4.3	Trade, competition, & market scale	28.8	128	○ ◇			
4.3.1	Applied tariff rate, weighted avg., %Ⓞ	5.9	94				
4.3.2	Intensity of local competition*	48.5	124	◇			
4.3.3	Domestic market scale, bn PPP\$	8.2	129	○ ◇			
BUSINESS SOPHISTICATION				29.3	74		
5.1	Knowledge workers	16.0	[115]				
5.1.1	Knowledge-intensive employment, %	2.3	114				
5.1.2	Firms offering formal training, % firms	32.0	47	●			
5.1.3	GERD performed by business, % GDP	n/a	n/a				
5.1.4	GERD financed by business, %	n/a	n/a				
5.1.5	Females employed w/advanced degrees, %Ⓞ	0.2	116				
5.2	Innovation linkages	38.7	30	●			
5.2.1	University/industry research collaboration*	33.8	96				
5.2.2	State of cluster development*	35.1	106				
5.2.3	GERD financed by abroad, %Ⓞ	39.9	7	●			
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	n/a	n/a				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.5	33	● ◆			
5.3	Knowledge absorption	33.1	65	●			
5.3.1	Intellectual property payments, % total trade	0.0	116				
5.3.2	High-tech imports, % total trade	9.0	44	●			
5.3.3	ICT services imports, % total trade	1.6	37	●			
5.3.4	FDI net inflows, % GDP	0.5	118				
5.3.5	Research talent, % in business enterprise	n/a	n/a				
KNOWLEDGE & TECHNOLOGY OUTPUTS				4.8	[127]	◇	
6.1	Knowledge creation	3.8	[112]				
6.1.1	Patents by origin/bn PPP\$ GDP	n/a	n/a				
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	n/a				
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	n/a				
6.1.4	Scientific & technical articles/bn PPP\$ GDP	4.3	89				
6.1.5	Citable documents H-index	0.0	128	○ ◇			
6.2	Knowledge impact	3.6	[126]				
6.2.1	Growth rate of PPP\$ GDP/worker, %	n/a	n/a				
6.2.2	New businesses/th pop. 15-64	n/a	n/a				
6.2.3	Computer software spending, % GDP	0.1	96				
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	0.5	120				
6.2.5	High- & medium-high-tech manufactures, %Ⓞ	0.0	97				
6.3	Knowledge diffusion	7.1	122				
6.3.1	Intellectual property receipts, % total trade	0.0	98				
6.3.2	High-tech net exports, % total trade	0.0	120				
6.3.3	ICT services exports, % total trade	0.6	96				
6.3.4	FDI net outflows, % GDP	0.0	113				
CREATIVE OUTPUTS				12.7	125		
7.1	Intangible assets	24.0	123				
7.1.1	Trademarks by origin/bn PPP\$ GDP	6.6	111				
7.1.2	Industrial designs by origin/bn PPP\$ GDP	n/a	n/a				
7.1.3	ICTs & business model creation*	37.3	123	◇			
7.1.4	ICTs & organizational model creation*	33.3	121				
7.2	Creative goods & services	2.6	[112]				
7.2.1	Cultural & creative services exports, % total trade	0.3	66	●			
7.2.2	National feature films/mn pop. 15-69	0.8	89				
7.2.3	Entertainment & Media market/th pop. 15-69	n/a	n/a				
7.2.4	Printing & other media, % manufacturing	n/a	n/a				
7.2.5	Creative goods exports, % total trade	0.1	109				
7.3	Online creativity	0.1	126				
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	0.0	127				
7.3.2	Country-code TLDs/th pop. 15-69	0.1	114				
7.3.3	Wikipedia edits/mn pop. 15-69.Ⓞ	0.1	122				
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	n/a				

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 II 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 missing or are outdated for Burundi.

Missing data

Code	Indicator name	Country year	Model year	Source
2.1.4	PISA scales in reading, maths & science	n/a	2015	OECD Programme for International Student Assessment (PISA)
2.3.1	Researchers, FTE/mn pop.	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
3.2.1	Electricity output, kWh/mn pop	n/a	2016	International Energy Agency
3.3.1	GDP/unit of energy use	n/a	2016	International Energy Agency
4.2.2	Market capitalization, % GDP	n/a	2017	World Federation of Exchanges
4.2.3	Venture capital deals/bn PPP\$ GDP	n/a	2018	Thomson Reuters
5.1.3	GERD performed by business, % GDP	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2016	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.4	JV–strategic alliance deals/bn PPP\$ GDP	n/a	2018	Thomson Reuters
5.3.5	Research talent, % in business enterprise	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.1	Patents by origin/bn PPP\$ GDP	n/a	2017	World Intellectual Property Organization
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2017	World Intellectual Property Organization
6.2.1	Growth rate of PPP\$ GDP/worker, %, 3-year average	n/a	2018	The Conference Board
6.2.2	New businesses/th pop. 15–64	n/a	2016	World Bank
7.1.2	Industrial designs by origin/bn PPP\$ GDP	n/a	2017	World Intellectual Property Organization
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2017	PwC
7.2.4	Printing & other media, % manufacturing	n/a	2016	United Nations Industrial Development Organization
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2018	App Annie

Outdated data

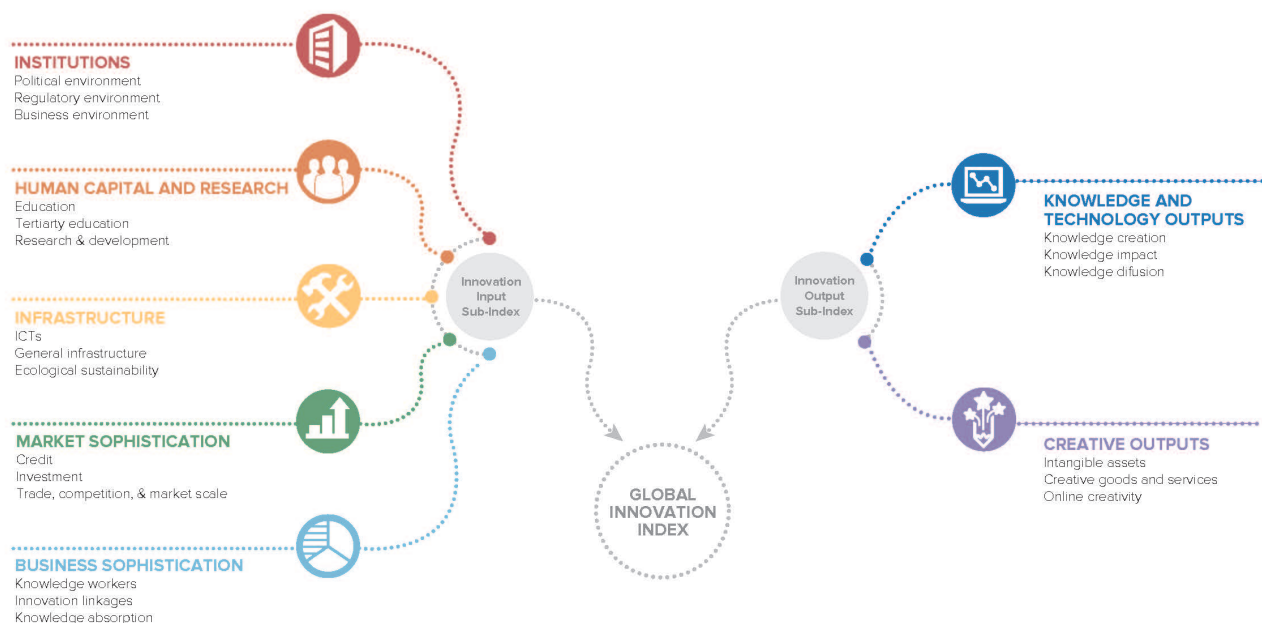
Code	Indicator name	Country year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2013	2015	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2011	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.3	Microfinance gross loans, % GDP	2016	2017	Microfinance Information Exchange
4.3.1	Applied tariff rate, weighted mean, %	2016	2017	World Bank
5.1.5	Females employed w/advanced degrees, %	2014	2017	International Labour Organization
5.2.3	GERD financed by abroad, %	2008	2016	UNESCO Institute for Statistics
6.2.5	High- & medium-high-tech manufactures, %	2013	2016	United Nations Industrial Development Organization
7.3.3	Wikipedia edits/mn pop. 15–69	2014	2017	Wikimedia Foundation

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2019, the GI presents its 12th edition devoted to the theme **Creating Healthy Lives—The Future of Medical Innovation**.

Recognizing that innovation is a key driver of economic development, the GI aims to provide a rich innovation ranking and analysis referencing around 130 economies. Over the last decade, the GI has established itself as both a leading reference on innovation and a “tool for action” for countries that incorporate the GI into their innovation agendas.

Framework of the Global Innovation Index 2019



The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that includes institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GI has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each containing three sub-pillars.

