



BURUNDI

130th Burundi ranks 130th 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 Burundi 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 Burundi in the GII 2022 is between ranks 129 and 131.

Rankings for Burundi (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020			
2021			
2022	130	127	130

- Burundi performs better in innovation inputs than innovation outputs in 2022.
- This year Burundi ranks 127th in innovation inputs and was not ranked last year.
- As for innovation outputs, Burundi ranks 130th .

11th Burundi ranks 11th among the 12 low-income group economies.

26th Burundi ranks 26th among the 27 economies in Sub-Saharan Africa.

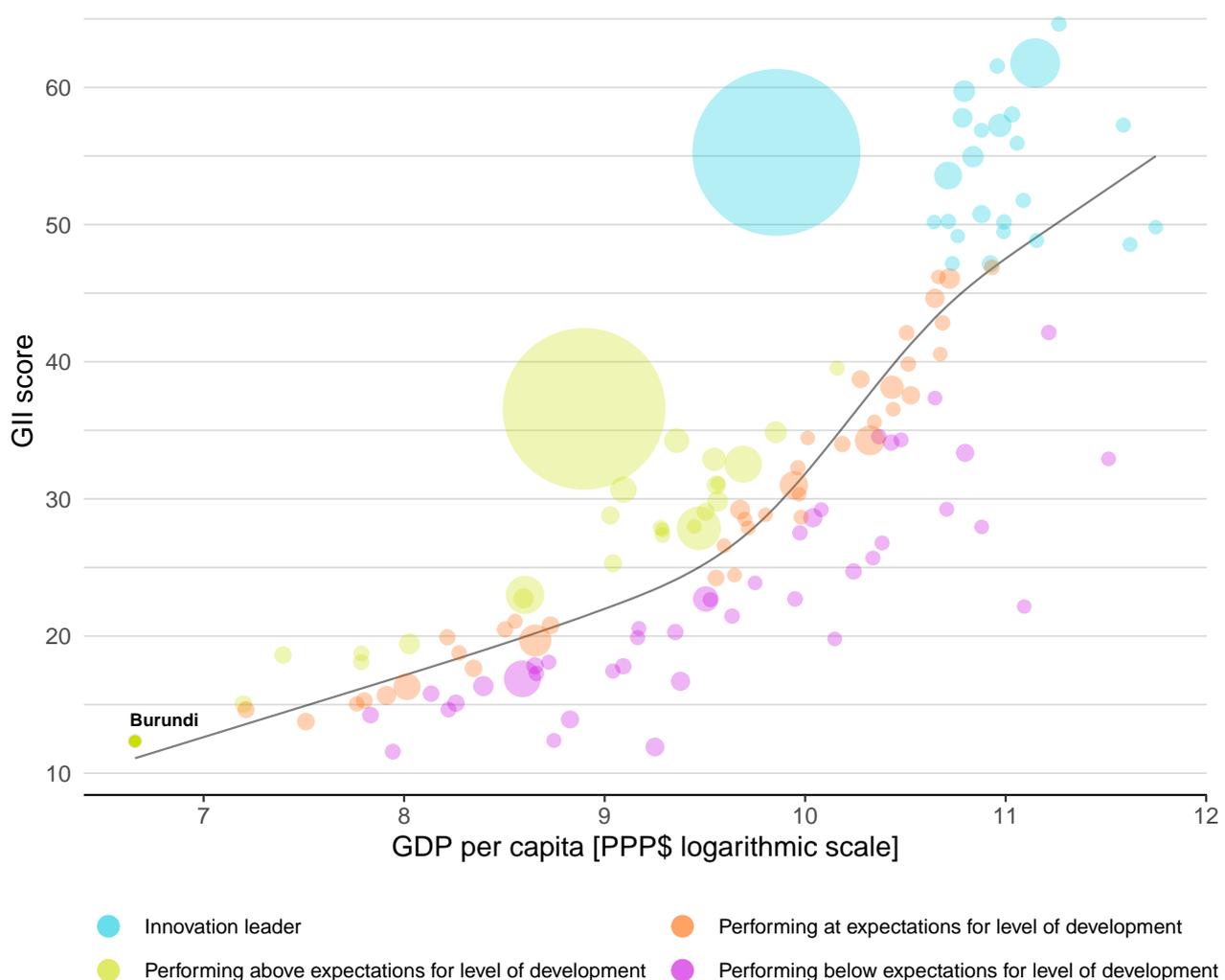


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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

The positive relationship between innovation and development



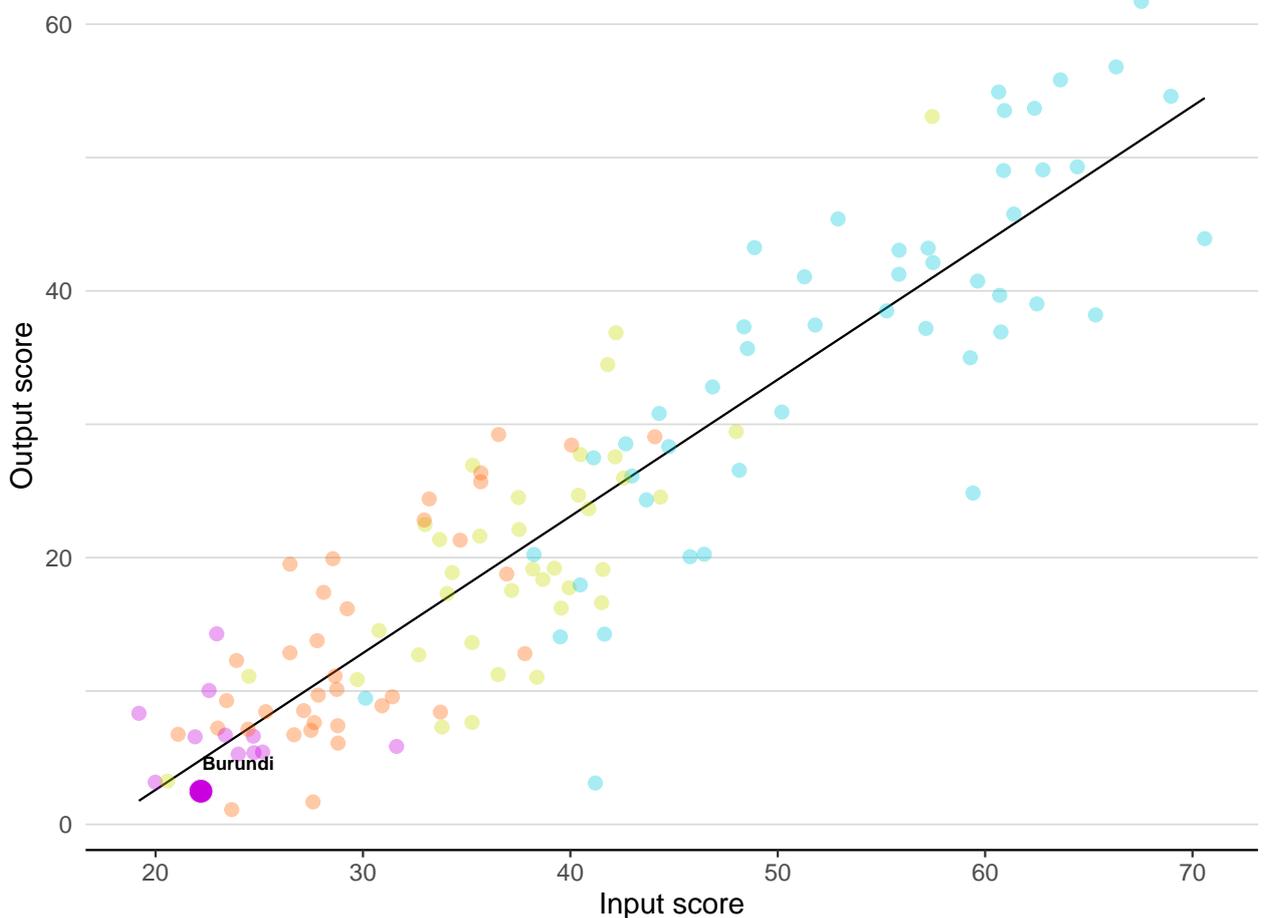


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance



Income ● High income ● Upper middle ● Lower middle ● Low income — Fitted line



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

The seven GII pillar scores for Burundi



Low-income group economies

Burundi performs above the low-income group average in two pillars, namely: Institutions; and, Human capital and research.

Sub-Saharan Africa

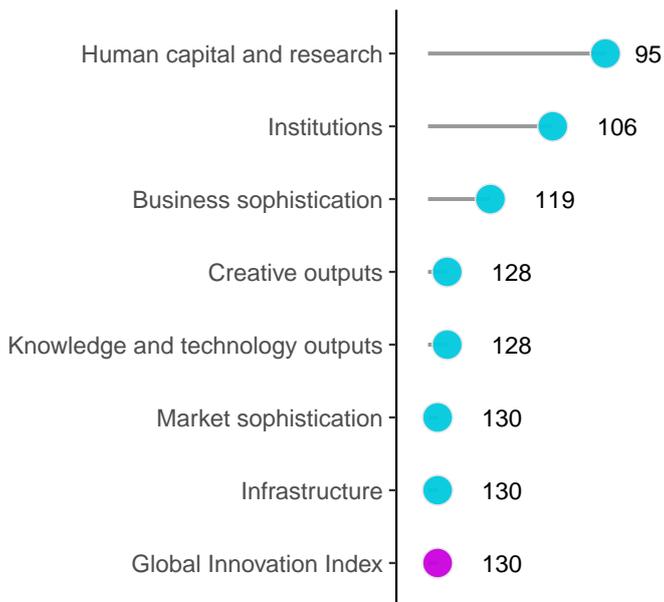
Burundi performs above the regional average in Human capital and research.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Burundi performs best in Human capital and research and its weakest performance is in Infrastructure and Market sophistication.

The seven GII pillar ranks for Burundi



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

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

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



INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Burundi

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	66	2.3.3	Global corporate R&D investors, top 3, mn USD	38
1.3.1	Policies for doing business	63	2.3.4	QS university ranking, top 3	72
2.1.1	Expenditure on education, % GDP	39	4.3.2	Domestic industry diversification	109
2.1.2	Government funding/pupil, secondary, % GDP/cap	10	4.3.3	Domestic market scale, bn PPP\$	132
2.2.3	Tertiary inbound mobility, %	51	5.1.1	Knowledge-intensive employment, %	126
5.1.2	Firms offering formal training, %	49	5.2.3	GERD financed by abroad, % GDP	97
5.3.2	High-tech imports, % total trade	34	5.2.5	Patent families/bn PPP\$ GDP	101
5.3.3	ICT services imports, % total trade	59	6.1.5	Citable documents H-index	131
6.1.3	Utility models by origin/bn PPP\$ GDP	39	6.3.3	High-tech exports, % total trade	131
7.2.1	Cultural and creative services exports, % total trade	69	7.1.3	Global brand value, top 5,000, % GDP	77

Burundi

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Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
130	127	Low	SSA	12.3	9.5	779

Institutions		Score/Value	Rank
1.1 Political environment		45.3	106
1.1.1	Political and operational stability*	35.8	128
1.1.2	Government effectiveness*	49.1	123
1.2 Regulatory environment		50.0	108
1.2.1	Regulatory quality*	19.5	127
1.2.2	Rule of law*	11.9	130
1.2.3	Cost of redundancy dismissal	15.9	66
1.3 Business environment		50.0	[59]
1.3.1	Policies for doing business [†]	50.0	63
1.3.2	Entrepreneurship policies and culture*	n/a	n/a

Human capital and research		Score/Value	Rank
2.1 Education		20.7	95
2.1.1	Expenditure on education, % GDP	45.7	78
2.1.2	Government funding/pupil, secondary, % GDP/cap	5.0	39
2.1.3	Government funding/pupil, secondary, % GDP/cap	30.8	10
2.1.4	School life expectancy, years	10.8	96
2.1.5	PISA scales in reading, maths and science	n/a	n/a
2.1.5	Pupil-teacher ratio, secondary	24.9	105
2.2 Tertiary education		15.9	100
2.2.1	Tertiary enrolment, % gross	5.0	126
2.2.2	Graduates in science and engineering, %	19.7	69
2.2.3	Tertiary inbound mobility, %	4.8	51
2.3 Research and development (R&D)		0.6	102
2.3.1	Researchers, FTE/mn pop.	23.4	105
2.3.2	Gross expenditure on R&D, % GDP	0.2	87
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38
2.3.4	QS university ranking, top 3*	0.0	72

Infrastructure		Score/Value	Rank
3.1 Information and communication technologies (ICTs)		20.7	130
3.1.1	ICT access*	30.8	126
3.1.2	ICT use*	38.1	129
3.1.3	Government's online service*	16.6	128
3.1.4	E-participation*	35.3	119
3.1.4	E-participation*	33.3	118
3.2 General infrastructure		14.6	122
3.2.1	Electricity output, GWh/mn pop.	n/a	n/a
3.2.2	Logistics performance*	0.5	124
3.2.3	Gross capital formation, % GDP	21.9	81
3.3 Ecological sustainability		16.5	116
3.3.1	GDP/unit of energy use	n/a	n/a
3.3.2	Environmental performance*	30.5	106
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.4	86

Market sophistication		Score/Value	Rank
4.1 Credit		7.4	130
4.1.1	Finance for startups and scaleups*	5.8	123
4.1.2	Domestic credit to private sector, % GDP	n/a	n/a
4.1.3	Loans from microfinance institutions, % GDP	22.4	111
4.1.3	Loans from microfinance institutions, % GDP	0.3	43
4.2 Investment		n/a	[n/a]
4.2.1	Market capitalization, % GDP	n/a	n/a
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	n/a	n/a
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	n/a	n/a
4.2.4	Venture capital received, value, % GDP	n/a	n/a
4.3 Trade, diversification, and market scale		8.9	131
4.3.1	Applied tariff rate, weighted avg., %	11.3	124
4.3.2	Domestic industry diversification	0.0	109
4.3.3	Domestic market scale, bn PPP\$	9.5	132

Business sophistication		Score/Value	Rank
5.1 Knowledge workers		16.9	119
5.1.1	Knowledge-intensive employment, %	9.5	125
5.1.2	Firms offering formal training, %	2.3	126
5.1.3	Firms offering formal training, %	32.0	49
5.1.4	GERD performed by business, % GDP	0.0	81
5.1.5	GERD financed by business, %	8.8	77
5.1.5	Females employed w/advanced degrees, %	0.2	125
5.2 Innovation linkages		19.9	93
5.2.1	University-industry R&D collaboration [†]	38.6	87
5.2.2	State of cluster development and depth [†]	41.0	100
5.2.3	GERD financed by abroad, % GDP	0.0	97
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	n/a	n/a
5.2.5	Patent families/bn PPP\$ GDP	0.0	101
5.3 Knowledge absorption		21.2	104
5.3.1	Intellectual property payments, % total trade	0.0	114
5.3.2	High-tech imports, % total trade	10.6	34
5.3.3	ICT services imports, % total trade	1.6	59
5.3.4	FDI net inflows, % GDP	0.1	120
5.3.5	Research talent, % in businesses	1.5	76

Knowledge and technology outputs		Score/Value	Rank
6.1 Knowledge creation		3.8	128
6.1.1	Patents by origin/bn PPP\$ GDP	5.8	102
6.1.2	PCT patents by origin/bn PPP\$ GDP	0.2	97
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	n/a
6.1.4	Scientific and technical articles/bn PPP\$ GDP	0.3	39
6.1.5	Citable documents H-index	10.0	87
6.2	Knowledge impact	3.9	[126]
6.2.1	Labor productivity growth, %	n/a	n/a
6.2.2	New businesses/th pop. 15-64	n/a	n/a
6.2.3	Software spending, % GDP	0.1	95
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	0.8	113
6.2.5	High-tech manufacturing, %	3.9	103
6.3 Knowledge diffusion		1.8	130
6.3.1	Intellectual property receipts, % total trade	0.0	105
6.3.2	Production and export complexity	n/a	n/a
6.3.3	High-tech exports, % total trade	0.0	131
6.3.4	ICT services exports, % total trade	0.8	91

Creative outputs		Score/Value	Rank
7.1 Intangible assets		1.2	128
7.1.1	Intangible asset intensity, top 15, %	0.9	127
7.1.2	Trademarks by origin/bn PPP\$ GDP	n/a	n/a
7.1.3	Global brand value, top 5,000, % GDP	4.6	121
7.1.4	Industrial designs by origin/bn PPP\$ GDP	0.0	77
7.2	Creative goods and services	2.7	[110]
7.2.1	Cultural and creative services exports, % total trade	0.2	69
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	0.0	124
7.3 Online creativity		0.1	129
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	0.1	126
7.3.2	Country-code TLDs/th pop. 15-69	0.1	116
7.3.3	GitHub commit pushes received/mn pop. 15-69	0.1	127
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 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 Burundi.

Missing data for Burundi

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
3.2.1	Electricity output, GWh/mn pop.	n/a	2020	International Energy Agency
3.3.1	GDP/unit of energy use	n/a	2019	International Energy Agency
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
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	n/a	2021	Refinitiv
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	n/a	2021	Refinitiv
4.2.4	Venture capital received, value, % GDP	n/a	2021	Refinitiv
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	n/a	2021	Refinitiv
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization
6.2.1	Labor productivity growth, %	n/a	2021	The Conference Board
6.2.2	New businesses/th pop. 15–64	n/a	2020	World Bank, Entrepreneurship Database
6.3.2	Production and export complexity	n/a	2019	Harvard University, Growth Lab
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 Burundi

Code	Indicator name	Economy year	Model year	Source
1.3.1	Policies for doing business	2020	2021	World Economic Forum, Executive Opinion Survey (EOS)
2.1.2	Government funding/pupil, secondary, % GDP/cap	2013	2018	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2018	2019	UNESCO Institute for Statistics

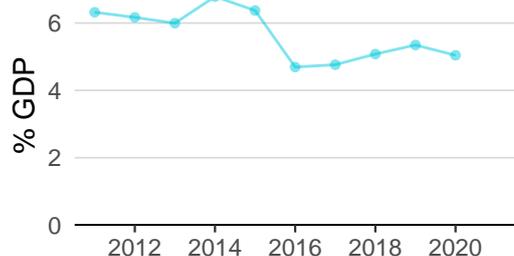


Code	Indicator name	Economy year	Model year	Source
2.2.2	Graduates in science and engineering, %	2018	2020	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2018	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2018	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2018	2020	UNESCO Institute for Statistics
4.1.3	Loans from microfinance institutions, % GDP	2016	2020	International Monetary Fund, Financial Access Survey (FAS)
4.3.2	Domestic industry diversification	2013	2019	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2017	2021	International Labour Organization
5.1.2	Firms offering formal training, %	2014	2019	World Bank Enterprise Surveys
5.1.3	GERD performed by business, % GDP	2018	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	2018	2019	UNESCO Institute for Statistics
5.1.5	Females employed w/advanced degrees, %	2014	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	2018	2019	UNESCO Institute for Statistics
5.3.1	Intellectual property payments, % total trade	2018	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.3	ICT services imports, % total trade	2018	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2018	2020	UNESCO Institute for Statistics
6.2.5	High-tech manufacturing, %	2013	2019	United Nations Industrial Development Organization
6.3.1	Intellectual property receipts, % total trade	2018	2020	World Trade Organization and United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2018	2020	World Trade Organization and United Nations Conference on Trade and Development
7.1.4	Industrial designs by origin/bn PPP\$ GDP	2017	2020	World Intellectual Property Organization

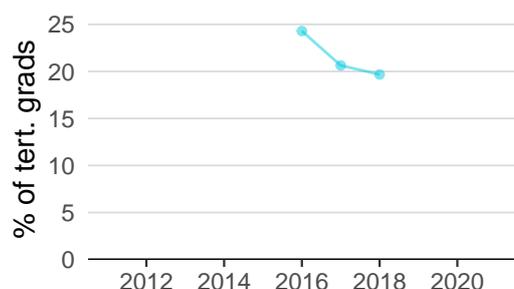
BURUNDI'S INNOVATION SYSTEM

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

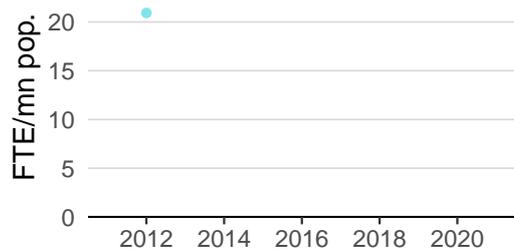
Innovation inputs



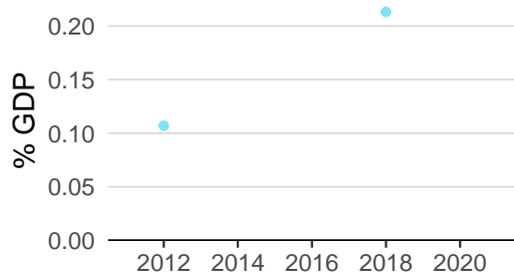
2.1.1 Expenditure on education was equal to 5.0% GDP in 2020—down by 6 percentage points from the year prior—and equivalent to an indicator rank of 39.



2.2.2 Graduates in science and engineering was equal to 19.7% of tert. grads in 2018—down by 5 percentage points from the year prior—and equivalent to an indicator rank of 69.



2.3.1 Researchers was equal to 23.4 FTE/mn pop. in 2018 and equivalent to an indicator rank of 105.



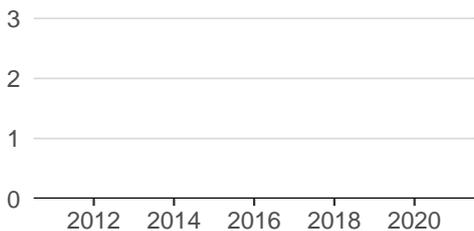
2.3.2 Gross expenditure on R&D was equal to 0.2% GDP in 2018 and equivalent to an indicator rank of 87.



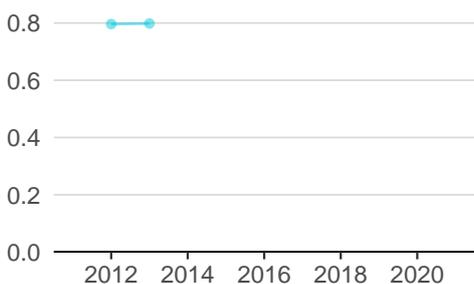
2.3.4 QS university ranking was equal to 0.0 in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 72.



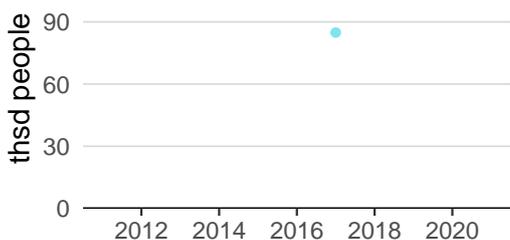
3.1.1 ICT access was equal to 3.8 in 2020 and equivalent to an indicator rank of 129.



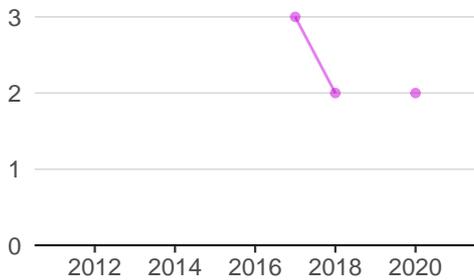
4.3.2 Domestic industry diversification was equal to 0.8 in 2013—effectively unchanged from the year prior—and equivalent to an indicator rank of 109.



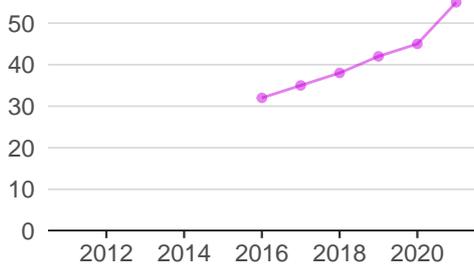
5.1.1 Knowledge-intensive employment was equal to 84.8 thsd people in 2017 and equivalent to an indicator rank of 126.



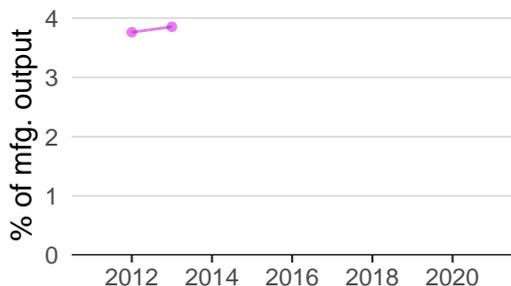
Innovation outputs



6.1.1 Patents by origin was equal to 2.0 in 2020 and equivalent to an indicator rank of 97.



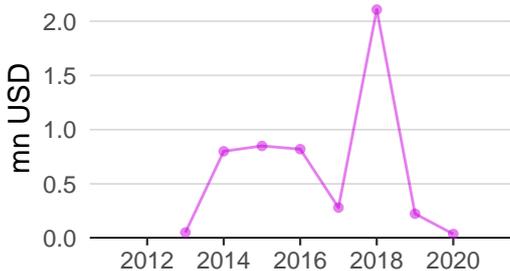
6.1.5 Citable documents H-index was equal to 55.0 in 2021—up by 22 percentage points from the year prior—and equivalent to an indicator rank of 131.



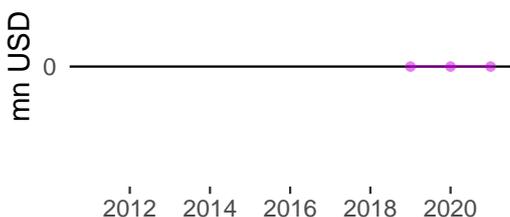
6.2.5 High-tech manufacturing was equal to 3.9% of mfg. output in 2013—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 103.



6.3.1 Intellectual property receipts was equal to 0.0 mn USD in 2018—down by 79 percentage points from the year prior—and equivalent to an indicator rank of 105.



6.3.3 High-tech exports was equal to 0.0 mn USD in 2020—down by 83 percentage points from the year prior—and equivalent to an indicator rank of 131.



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 1.2 mn USD in 2020—up by 10 percentage points from the year prior—and equivalent to an indicator rank of 69.



BURUNDI'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
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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
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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
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No observations

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

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank
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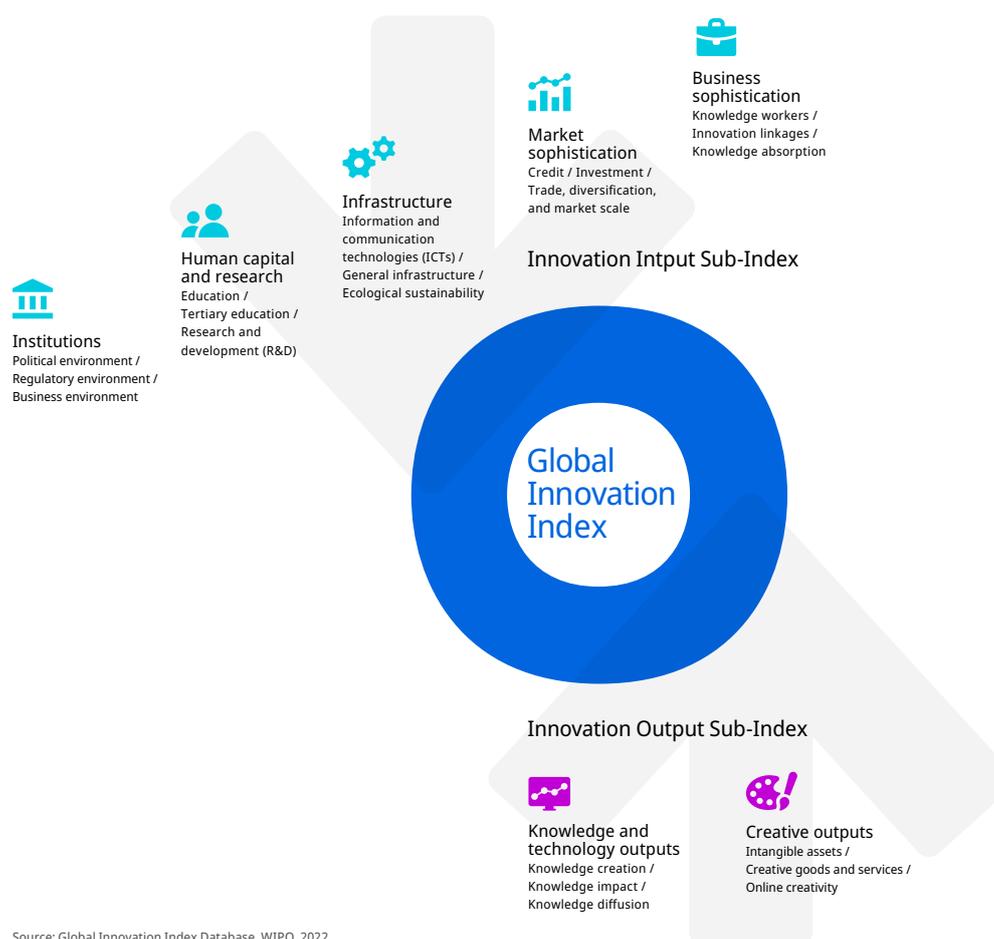
No observations

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.



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.