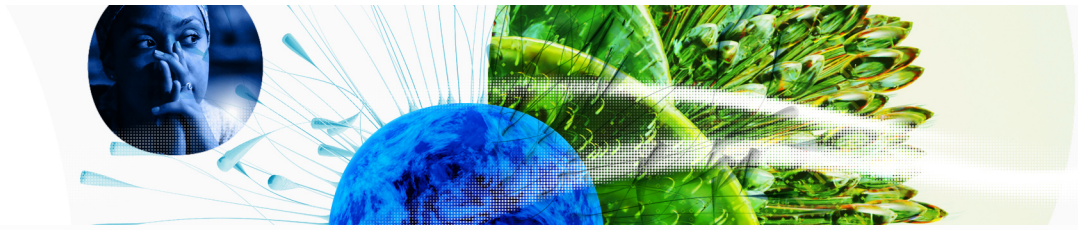
Global Innovation Index 2023



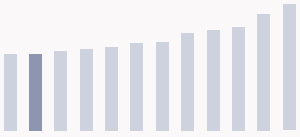
The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation**.

Burundi ranking in the Global Innovation Index 2023

> Burundi ranks 130th among the 132 economies featured in the GII 2023.

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



> Burundi ranks 26th among the 28 economies in Sub-Saharan Africa.

> Burundi GII Ranking (2020-2023)

The table shows the rankings of Burundi over the past four years. 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 2023 is between ranks 129 and 131.

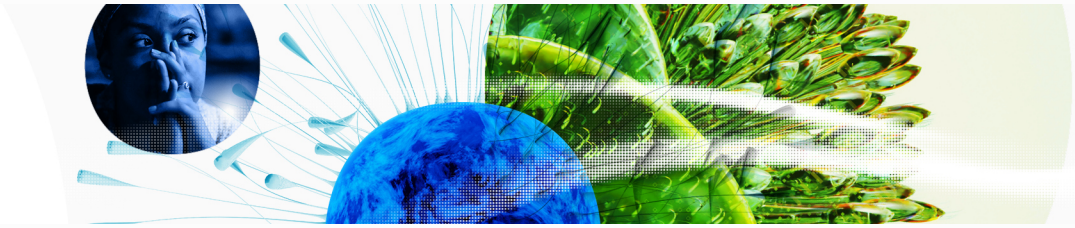
	GII Position	Innovation Inputs	Innovation Outputs
2020	n/a	n/a	n/a
2021	n/a	n/a	n/a
2022	130th	127th	130th
2023	130th	126th	130th

Burundi performs worse in **innovation outputs** than innovation inputs in 2023.

This year **Burundi ranks 126th in innovation inputs.** This position is higher than last year.

Burundi ranks 130th in innovation outputs. This position is the same as last year.

Global Innovation Index 2023

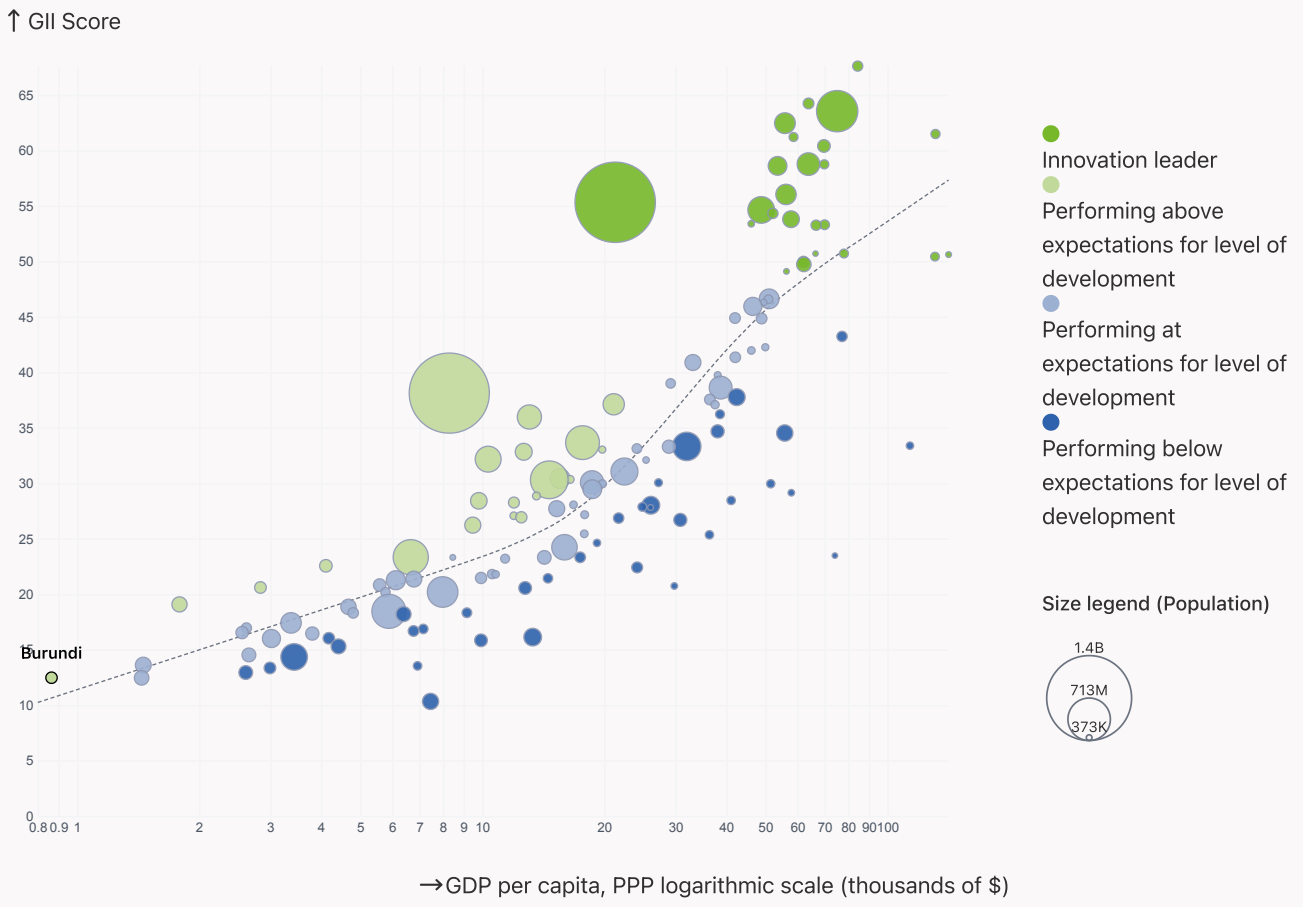


→ Expected vs. observed innovation performance

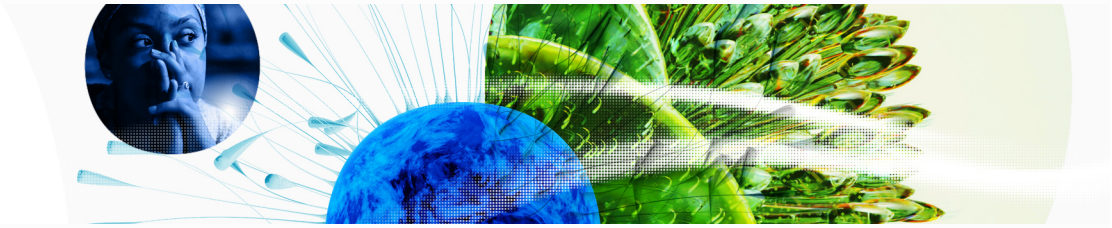
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

> Relative to GDP, Burundi is performing above expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2023

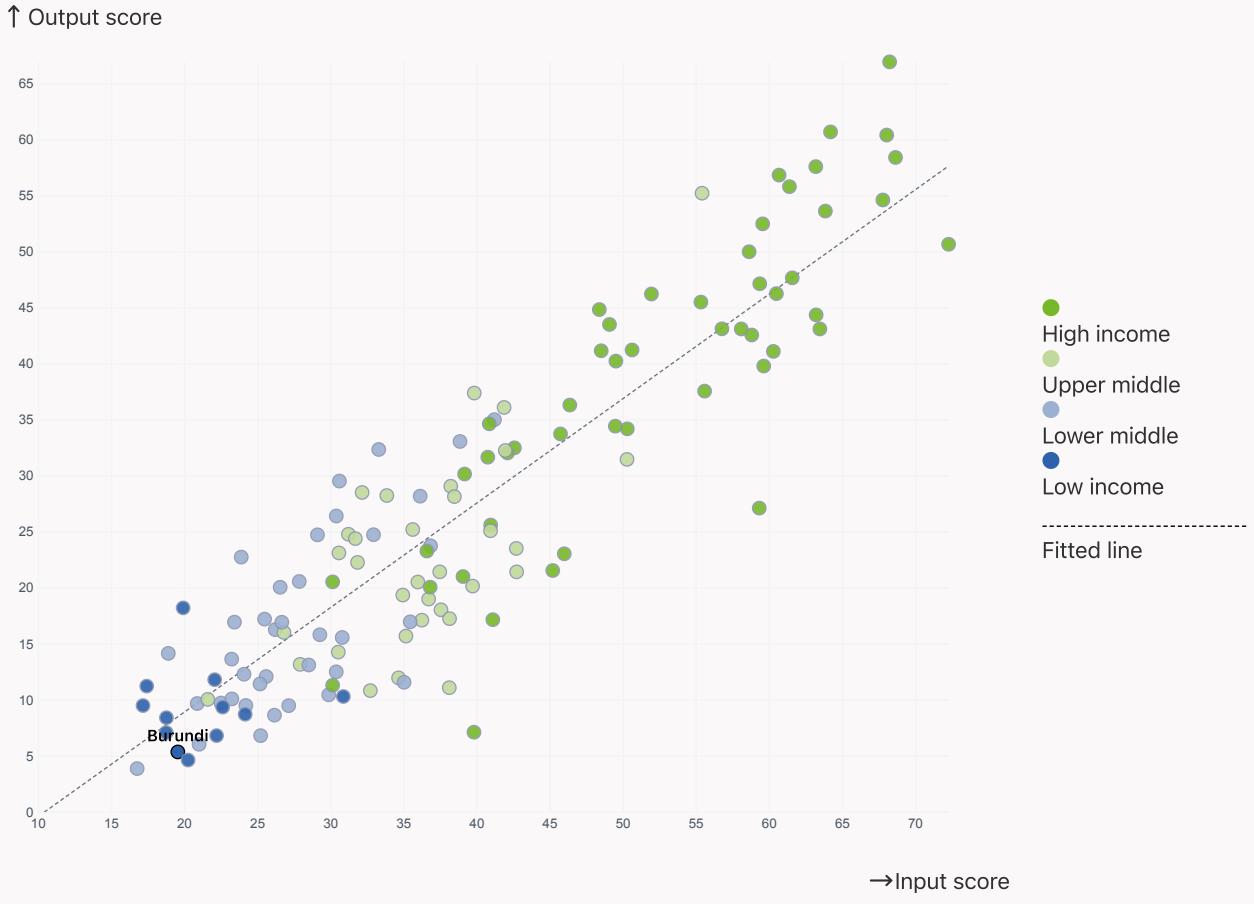


→ Effectively translating innovation investments into innovation outputs

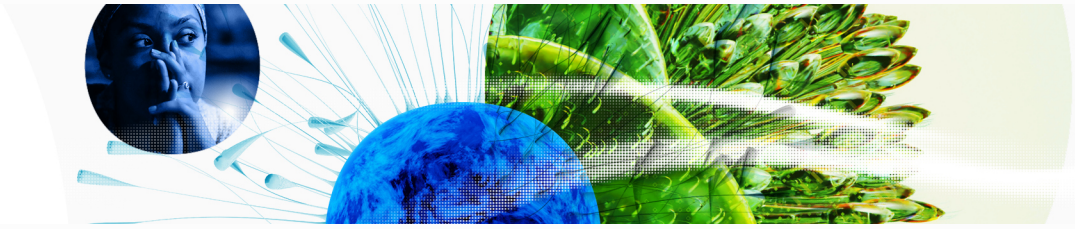
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

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

> Relationship between innovation inputs and outputs

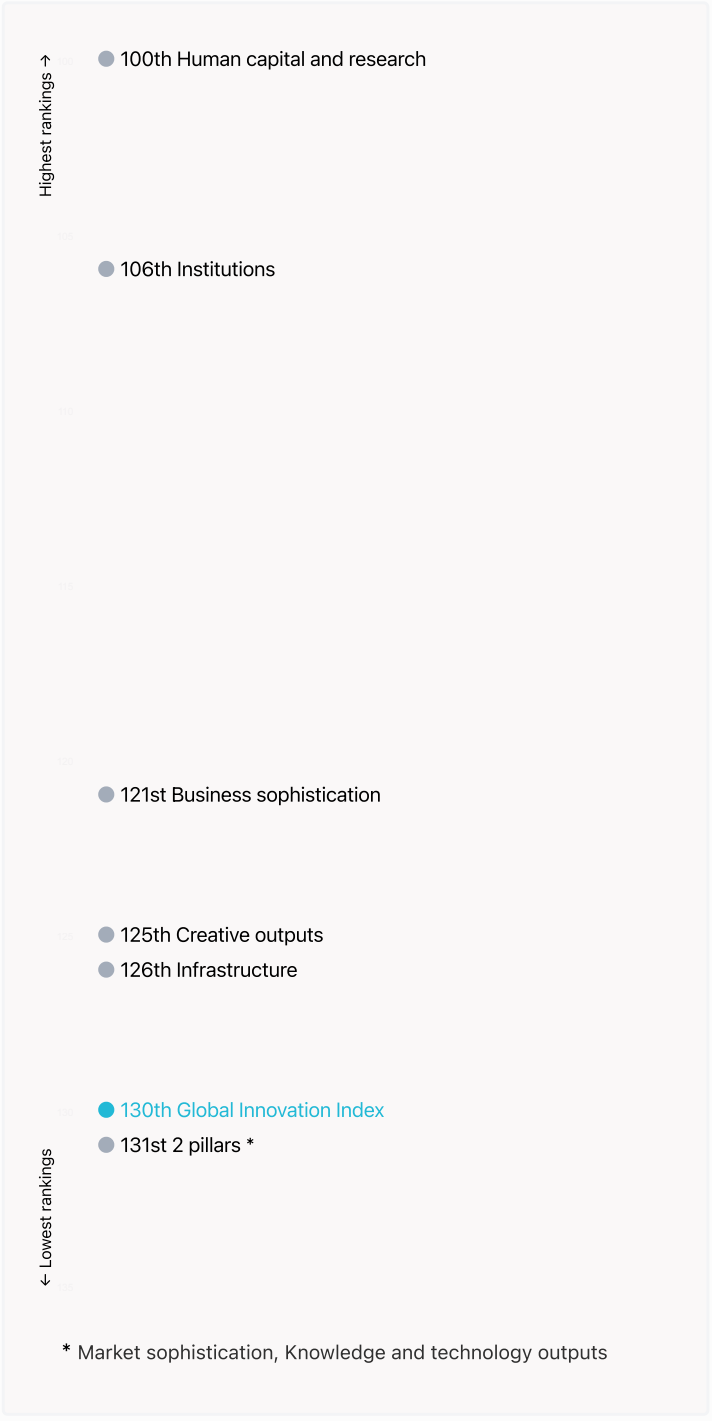


Global Innovation Index 2023



→ Overview of Burundi's rankings in the seven areas of the GII in 2023

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Burundi are those that rank above the GII (shown in blue) and the weakest are those that rank below.



> Highest rankings

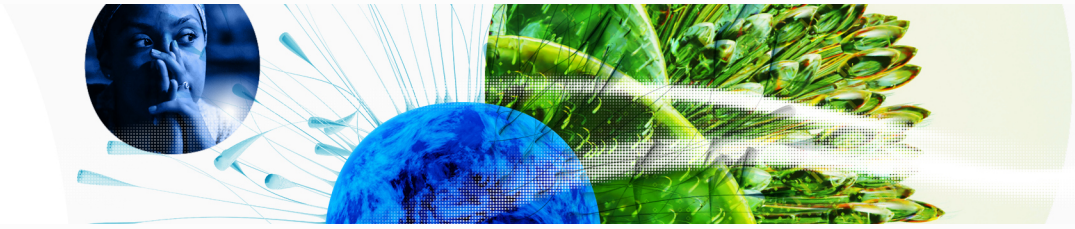
Burundi ranks highest in Human capital and research (100th), Institutions (106th), Business sophistication (121st), Creative outputs (125th) and Infrastructure (126th).

> Lowest rankings

Burundi ranks lowest in Market sophistication, Knowledge and technology outputs (131st), Infrastructure (126th) and Creative outputs (125th).

The full WIPO Intellectual Property Statistics profile for Burundi can be found on this link.

Global Innovation Index 2023



→ Benchmark of Burundi against other country groupings for each of the seven areas of the GII Index

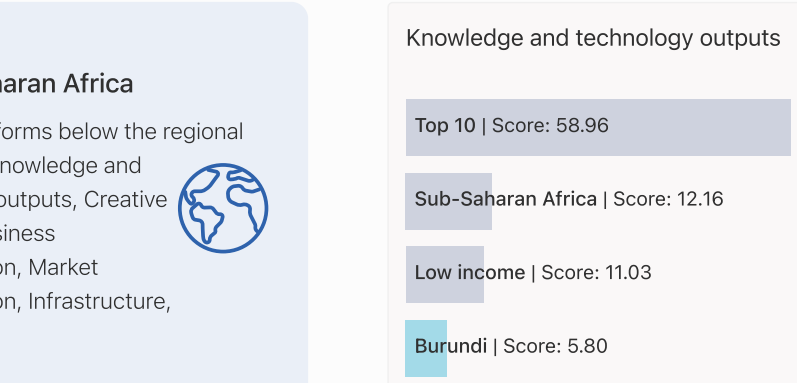
The charts shows the relative position of Burundi (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

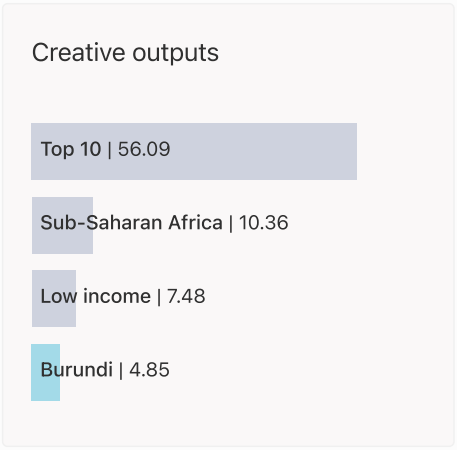
> Low-Income economies

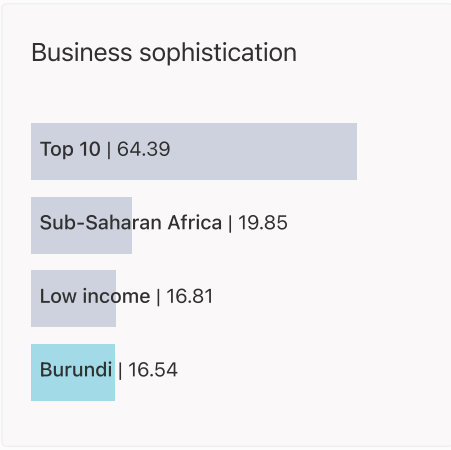
Burundi performs below the low-income group average in Knowledge and technology outputs, Creative outputs, Business sophistication, Market sophistication, Infrastructure, Institutions.

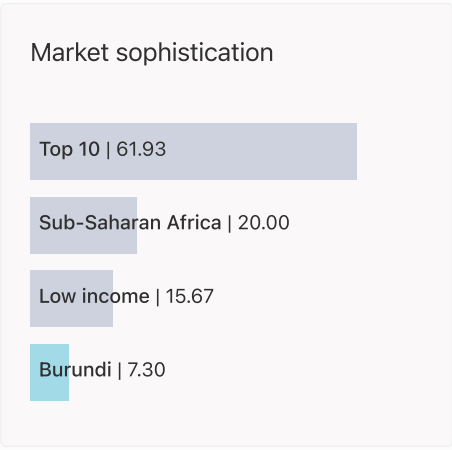
> Sub-Saharan Africa

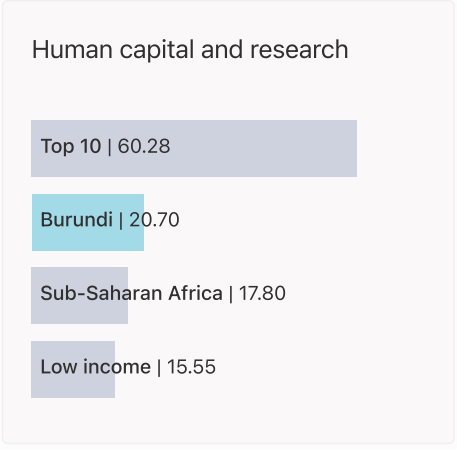
Burundi performs below the regional average in Knowledge and technology outputs, Creative outputs, Business sophistication, Market sophistication, Infrastructure, Institutions.

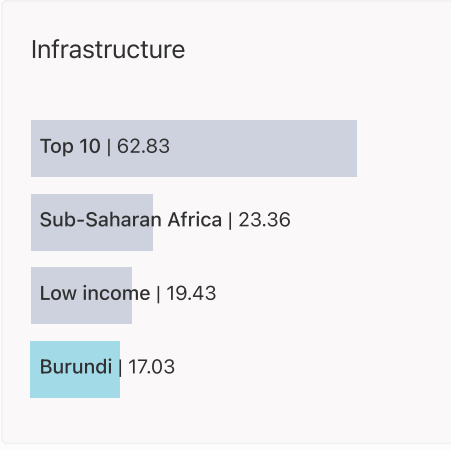


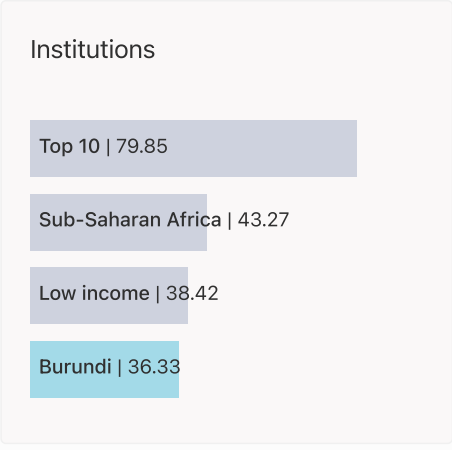




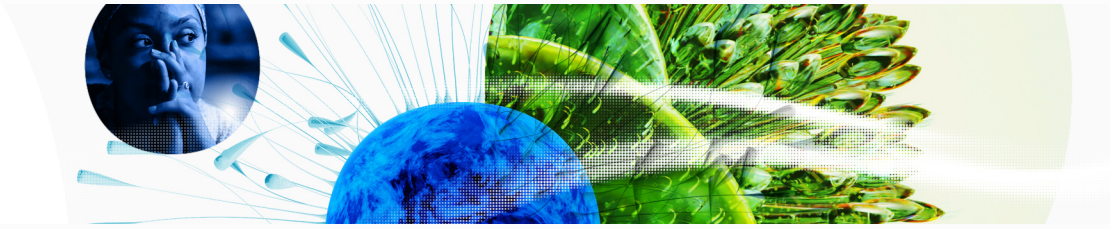








Global Innovation Index 2023



→ Innovation strengths and weaknesses in Burundi

The table below gives an overview of the indicator strengths and weaknesses of Burundi in the GII 2023.

> Burundi's main innovation strengths are **Utility models by origin/bn PPP$ GDP** (rank 37), **Expenditure on education, % GDP** (rank 39) and **High-tech imports, % total trade** (rank 41).

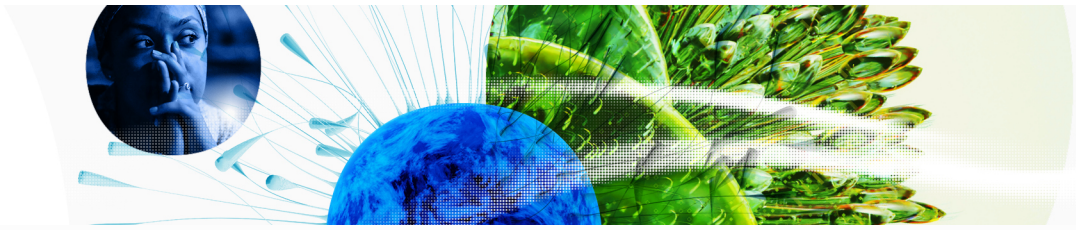
Strengths

Rank	Code	Indicator name
37	6.1.3	Utility models by origin/bn PPP$ GDP
39	2.1.1	Expenditure on education, % GDP
41	5.3.2	High-tech imports, % total trade
41	5.3.3	ICT services imports, % total trade
50	5.1.2	Firms offering formal training, %
50	3.2.3	Gross capital formation, % GDP
51	2.2.3	Tertiary inbound mobility, %
62	1.3.1	Policies for doing business
66	1.2.3	Cost of redundancy dismissal

Weaknesses

Rank	Code	Indicator name
132	1.1.2	Government effectiveness
132	3.1.2	ICT use
126	5.1.1	Knowledge-intensive employment, %
96	5.2.3	GERD financed by abroad, % GDP
95	5.2.5	Patent families/bn PPP$ GDP
74	7.1.3	Global brand value, top 5,000
71	2.3.4	QS university ranking, top 3
48	6.2.2	Unicorn valuation, % GDP
40	2.3.3	Global corporate R&D investors, top 3, mn US$

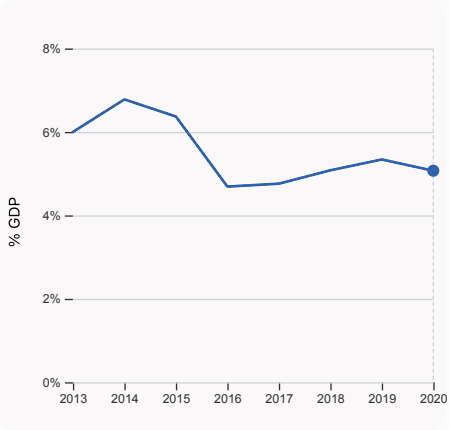
Global Innovation Index 2023



→ Burundi's innovation system

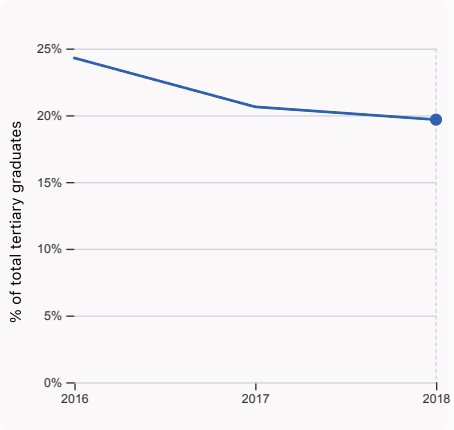
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Burundi



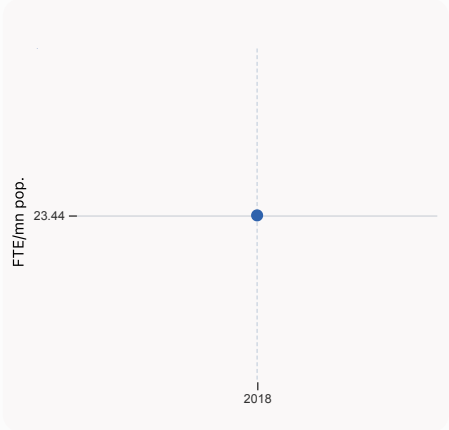
2.1.1 Expenditure on education, % GDP

was equal to 5.07% GDP in 2020, down by 0.27 percentage points from the year prior – and equivalent to an indicator rank of 39.



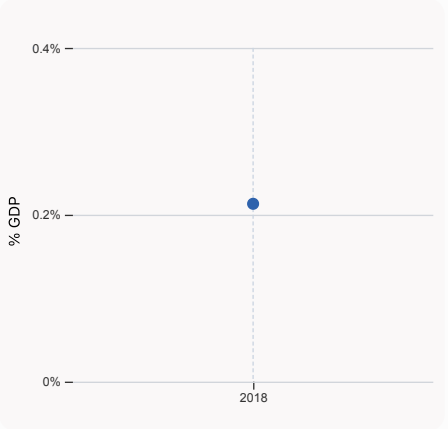
2.2.2 Graduates in science and engineering, %

was equal to 19.67% of total tertiary graduates in 2018, down by 0.96 percentage points from the year prior – and equivalent to an indicator rank of 73.



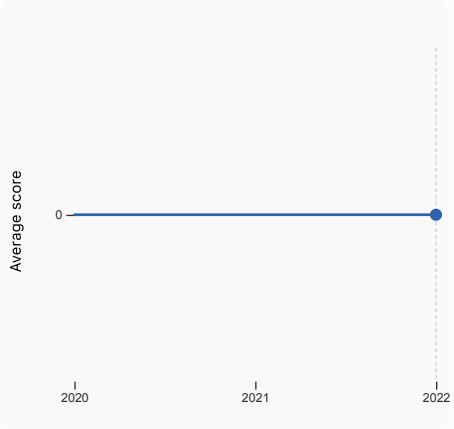
2.3.1 Researchers, FTE/mn pop.

was equal to 23.44 FTE/mn pop. in 2018, equivalent to an indicator rank of 103.



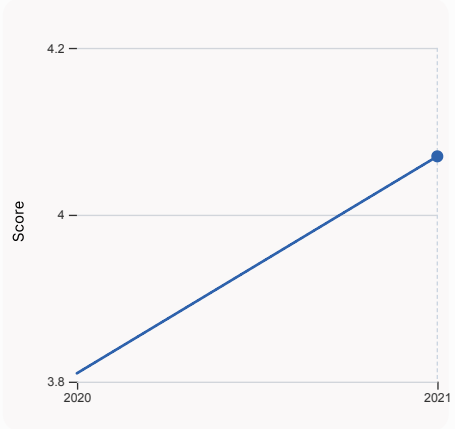
2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.213 % GDP in 2018, equivalent to an indicator rank of 86.



2.3.4 QS university ranking, top 3

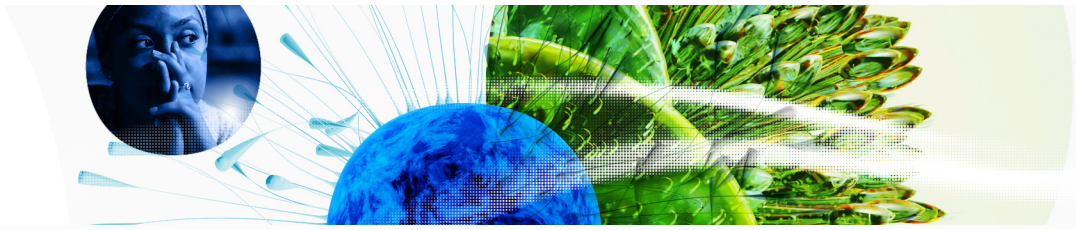
was equal to an average score of 0 for the top 3 universities in 2022, equivalent to an indicator rank of 71.

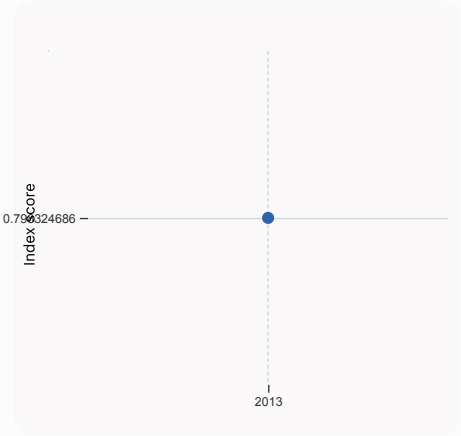


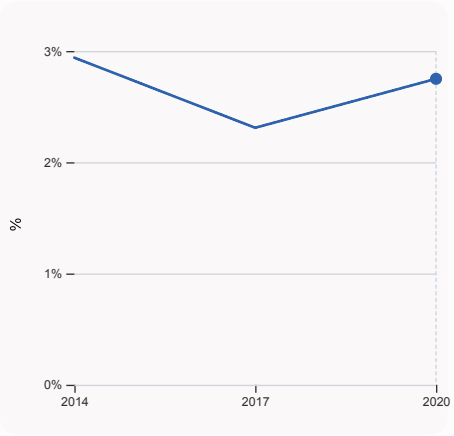
3.1.1 ICT access

was equal to a score of 4.07 in 2021, up by 6.82% from the year prior – and equivalent to an indicator rank of 130.

Global Innovation Index 2023







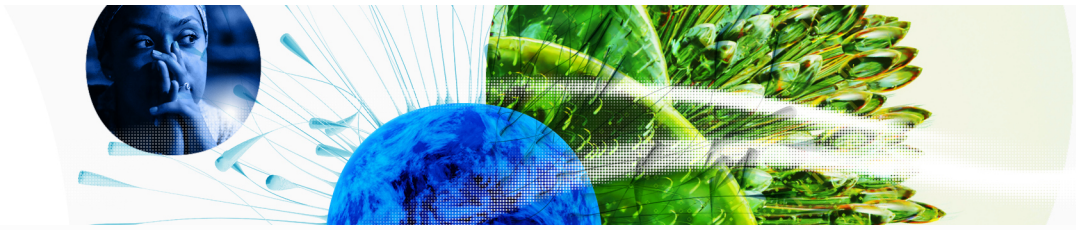
4.3.2 Domestic industry diversification

was equal to an index score of 0.798 in 2013, equivalent to an indicator rank of 111.

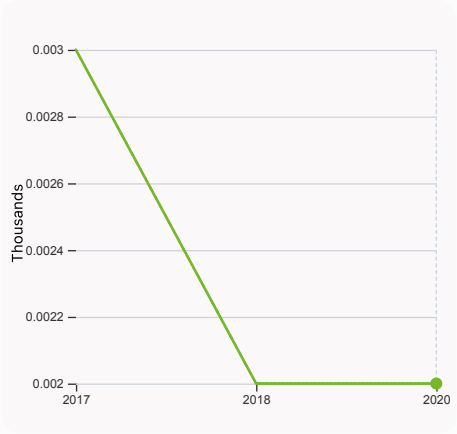
5.1.1 Knowledge-intensive employment, %

was equal to 2.75% in 2020, up by 0.44 percentage points from the year prior – and equivalent to an indicator rank of 126.

Global Innovation Index 2023

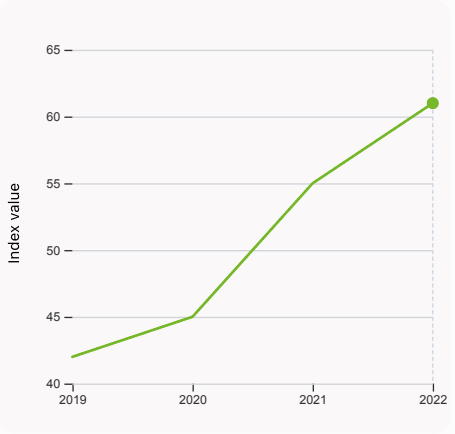


> Innovation outputs in Burundi



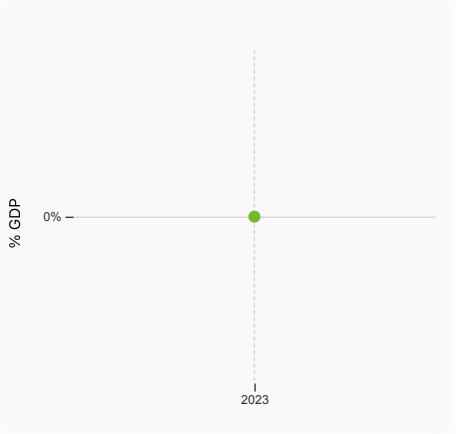
6.1.1 Patents by origin

was equal to 0.002 Thousands in 2020, up by with no change from the year prior – and equivalent to an indicator rank of 96.



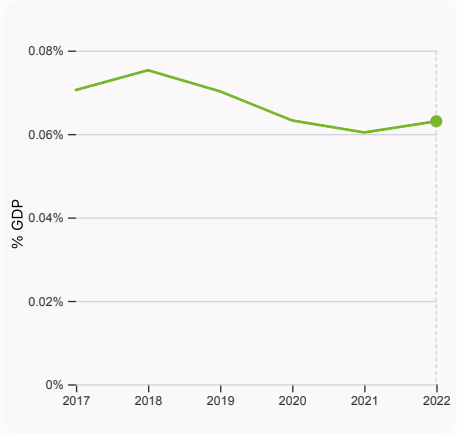
6.1.5 Citable documents H-index

was equal to an index value of 61 in 2022, up by 10.91% from the year prior – and equivalent to an indicator rank of 129.



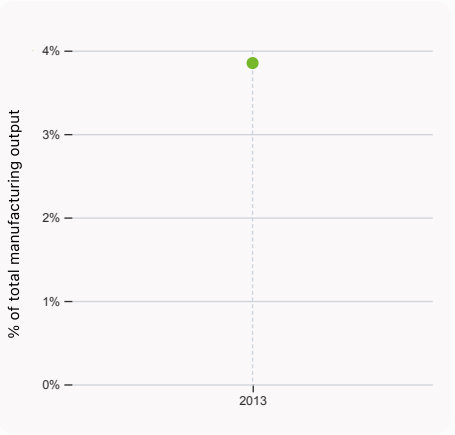
6.2.2 Unicorn valuation, % GDP

was equal to 0 % GDP in 2023 – and equivalent to an indicator rank of 48.



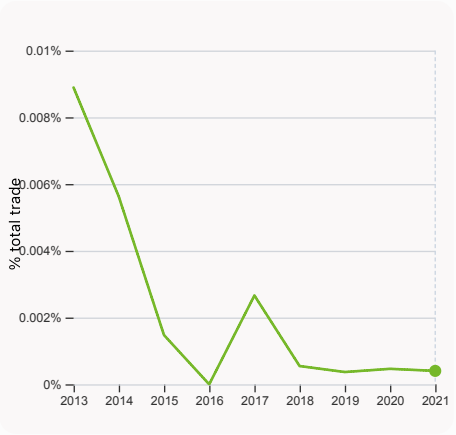
6.2.3 Software spending, % GDP

was equal to 0.063% GDP in 2022, up by 0.0027 percentage points from the year prior – and equivalent to an indicator rank of 100.



6.2.4 High-tech manufacturing, %

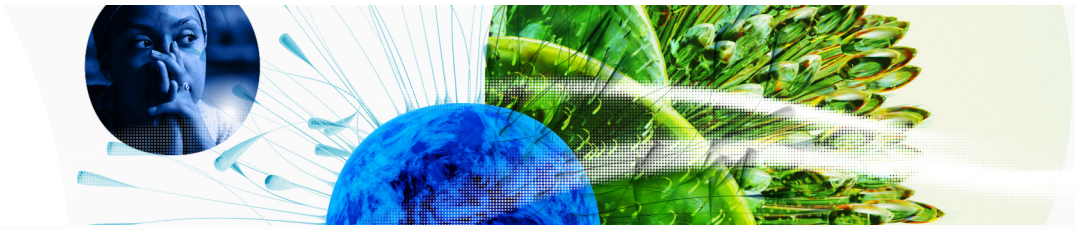
was equal to 3.85 % of total manufacturing output in 2013 – and equivalent to an indicator rank of 105.

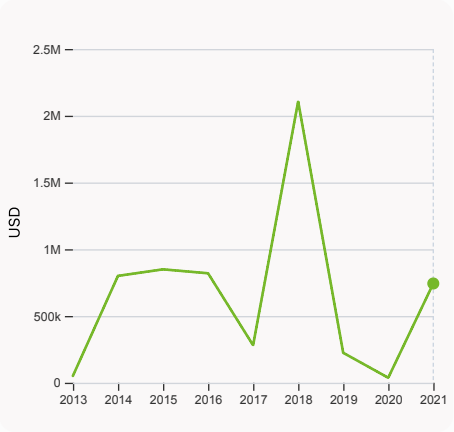


6.3.1 Intellectual property receipts, % total trade

was equal to 0% total trade in 2021, down by 0.000062 percentage points from the year prior – and equivalent to an indicator rank of 107.

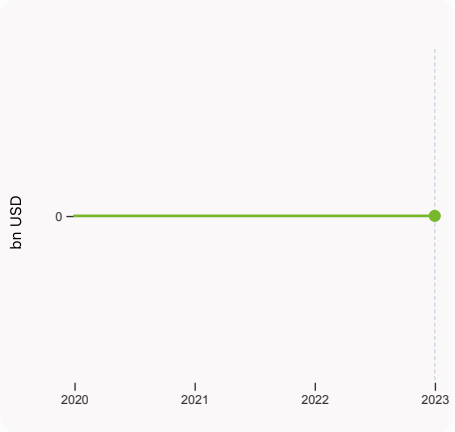
Global Innovation Index 2023





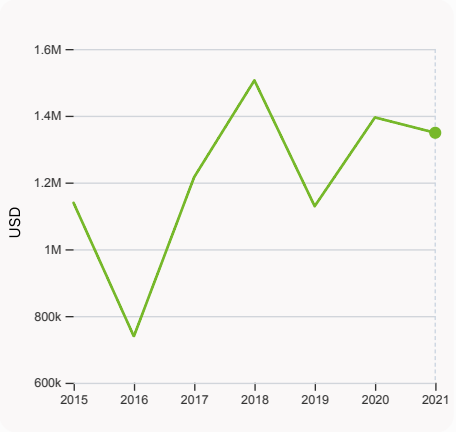
6.3.3 High-tech exports

was equal to 743,547 USD in 2021, up by 1882.74% from the year prior – and equivalent to an indicator rank of 117.



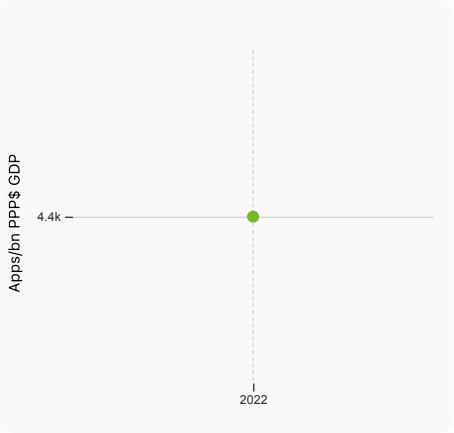
7.1.3 Global brand value, top 5,000

was equal to 0 bn USD in 2023 – and equivalent to an indicator rank of 74.



7.2.1 Cultural and creative services exports

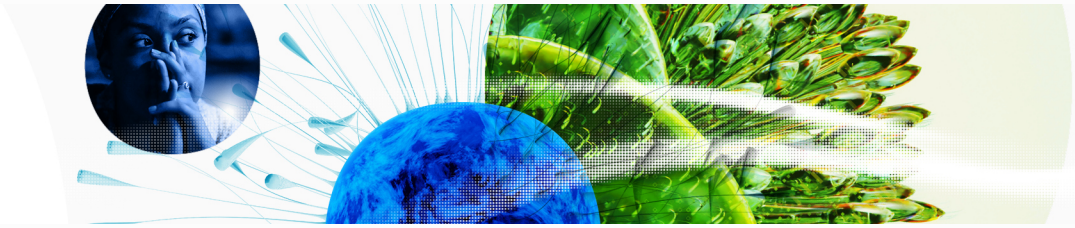
was equal to 1,349,000 USD in 2021, down by 3.3% from the year prior – and equivalent to an indicator rank of 72.



7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 4,401.73 Apps/bn PPP$ GDP in 2022 – and equivalent to an indicator rank of 107.

Global Innovation Index 2023



Burundi

GII 2023 rank **130**

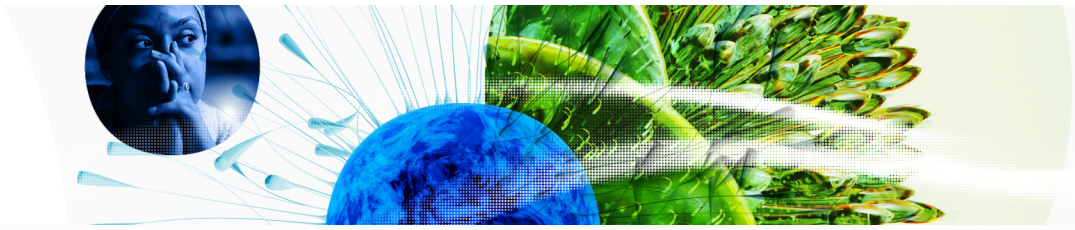
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
130	126	Low	SSA	12.9	10.9	865.0

	Score / Value	Rank	
Institutions	**36.3**	**106**	
1.1 Institutional environment	**13.2**	**128**	
1.1.1 Operational stability for businesses*	26.4	122	
1.1.2 Government effectiveness*	0.0	132	○ ◇
1.2 Regulatory environment	**46.8**	**109**	
1.2.1 Regulatory quality*	16.6	126	◇
1.2.2 Rule of law*	1.8	131	◇
1.2.3 Cost of redundancy dismissal	15.9	66	●
1.3 Business environment	**49.0**	**57**	
1.3.1 Policies for doing business†	49.0	62	●
1.3.2 Entrepreneurship policies and culture†	n/a	n/a	
Human capital and research	**20.7**	**100**	
2.1 Education	**46.3**	**79**	
2.1.1 Expenditure on education, % GDP	5.1	39	●
2.1.2 Government funding/pupil, secondary, % GDP/cap	32.8	6	
2.1.3 School life expectancy, years	10.8	99	
2.1.4 PISA scales in reading, maths and science	n/a	n/a	
2.1.5 Pupil-teacher ratio, secondary	24.9	110	
2.2 Tertiary education	**14.9**	**103**	
2.2.1 Tertiary enrolment, % gross	6.0	122	
2.2.2 Graduates in science and engineering, %	19.7	73	
2.2.3 Tertiary inbound mobility, %	4.8	51	●
2.3 Research and development (R&D)	**0.9**	**101**	
2.3.1 Researchers, FTE/mn pop.	23.4	103	
2.3.2 Gross expenditure on R&D, % GDP	0.2	86	
2.3.3 Global corporate R&D investors, top 3, mn US$	0.0	40	○ ◇
2.3.4 QS university ranking, top 3*	0.0	71	○ ◇
Infrastructure	**17.0**	**126**	
3.1 Information and communication technologies (ICTs)	**17.4**	**130**	◇
3.1.1 ICT access*	10.3	130	◇
3.1.2 ICT use*	0.0	132	○ ◇
3.1.3 Government's online service*	26.8	127	
3.1.4 E-participation*	32.6	100	
3.2 General infrastructure	**22.1**	**82**	
3.2.1 Electricity output, GWh/mn pop.	n/a	n/a	
3.2.2 Logistics performance*	n/a	n/a	
3.2.3 Gross capital formation, % GDP	25.4	50	●
3.3 Ecological sustainability	**11.6**	**122**	
3.3.1 GDP/unit of energy use	n/a	n/a	
3.3.2 Environmental performance*	19.7	109	
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.5	84	
Market sophistication	**7.3**	**131**	◇
4.1 Credit	**5.6**	**123**	
4.1.1 Finance for startups and scaleups†	n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP	23.6	112	
4.1.3 Loans from microfinance institutions, % GDP	0.3	41	
4.2 Investment	**n/a**	**n/a**	
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.3 VC recipients, deals/bn PPP$ GDP	n/a	n/a	
4.2.4 VC received, value, % GDP	n/a	n/a	
4.3 Trade, diversification, and market scale	**9.0**	**131**	◇
4.3.1 Applied tariff rate, weighted avg., %	11.3	124	
4.3.2 Domestic industry diversification	0.0	111	
4.3.3 Domestic market scale, bn PPP$	10.9	131	

	Score / Value	Rank	
Business sophistication	**16.5**	**121**	
5.1 Knowledge workers	**10.0**	**121**	
5.1.1 Knowledge-intensive employment, %	2.7	126	○ ◇
5.1.2 Firms offering formal training, %	32.0	50	●
5.1.3 GERD performed by business, % GDP	0.0	81	
5.1.4 GERD financed by business, %	8.8	76	
5.1.5 Females employed w/advanced degrees, %	0.7	122	
5.2 Innovation linkages	**14.4**	**99**	
5.2.1 University-industry R&D collaboration†	31.5	93	
5.2.2 State of cluster development†	26.1	103	
5.2.3 GERD financed by abroad, % GDP	0.0	96	○ ◇
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	95	○ ◇
5.3 Knowledge absorption	**25.2**	**102**	
5.3.1 Intellectual property payments, % total trade	0.0	117	
5.3.2 High-tech imports, % total trade	9.8	41	●
5.3.3 ICT services imports, % total trade	1.8	41	●
5.3.4 FDI net inflows, % GDP	0.2	121	
5.3.5 Research talent, % in businesses	1.5	77	
Knowledge and technology outputs	**5.8**	**131**	◇
6.1 Knowledge creation	**6.7**	**102**	
6.1.1 Patents by origin/bn PPP$ GDP	0.2	96	
6.1.2 PCT patents by origin/bn PPP$ GDP	n/a	n/a	
6.1.3 Utility models by origin/bn PPP$ GDP	0.3	37	●
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a	
6.1.5 Citable documents H-index	1.0	129	◇
6.2 Knowledge impact	**8.2**	**129**	◇
6.2.1 Labor productivity growth, %	-2.2	128	◇
6.2.2 Unicorn valuation, % GDP	0.0	48	○ ◇
6.2.3 Software spending, % GDP	0.1	100	
6.2.4 High-tech manufacturing, %	3.9	105	
6.3 Knowledge diffusion	**2.6**	**130**	◇
6.3.1 Intellectual property receipts, % total trade	0.0	107	
6.3.2 Production and export complexity	n/a	n/a	
6.3.3 High-tech exports, % total trade	0.1	117	
6.3.4 ICT services exports, % total trade	0.6	100	
6.3.5 ISO 9001 quality/bn PPP$ GDP	1.4	97	
Creative outputs	**4.9**	**125**	
7.1 Intangible assets	**2.7**	**125**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	4.6	124	
7.1.3 Global brand value, top 5,000	0.0	74	○ ◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.2	102	
7.2 Creative goods and services	**2.4**	**101**	
7.2.1 Cultural and creative services exports, % total trade	0.2	72	
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 Creative goods exports, % total trade	0.1	106	
7.3 Online creativity	**11.6**	**110**	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	0.1	128	
7.3.2 Country-code TLDs/th pop. 15-69	0.1	120	
7.3.3 GitHub commits/mn pop. 15-69	0.2	128	
7.3.4 Mobile app creation/bn PPP$ GDP	46.2	107	

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/gii-ranking. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

Global Innovation Index 2023



→ Data availability

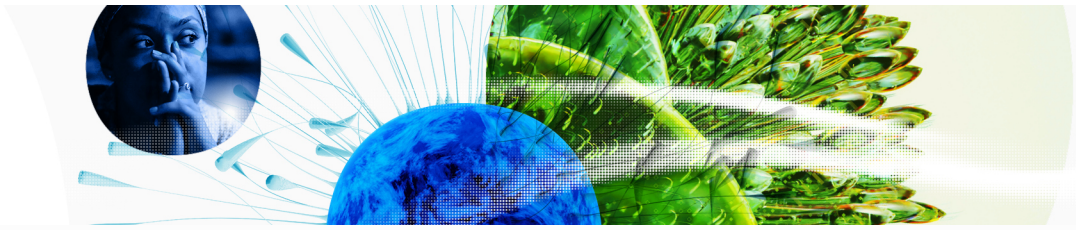
The following tables list indicators that are either missing or outdated for Burundi.

> Burundi has missing data for sixteen indicators and outdated data for twenty four indicators.

> Missing data for Burundi

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	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	2021	International Energy Agency
3.2.2	Logistics performance	n/a	2023	World Bank, Logistics Performance Index 2023 (https://lpi.worldbank.org/); and World Bank 2023, Connecting to Compete 2023: Trade Logistics in the Global Economy ÔÇô The Logistics Performance Index and its Indicators.
3.3.1	GDP/unit of energy use	n/a	2020	International Energy Agency
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges; World Bank
4.2.2	Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.3	VC recipients, deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % GDP	n/a	2022	Refinitiv; International Monetary Fund
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
6.1.2	PCT patents by origin/bn PPP$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund
6.3.2	Production and export complexity	n/a	2020	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.2.2	National feature films/mn pop. 15-69	n/a	2021	OMDIA; United Nations, World Population Prospects
7.2.3	Entertainment and media market/th pop. 15-69	n/a	2022	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

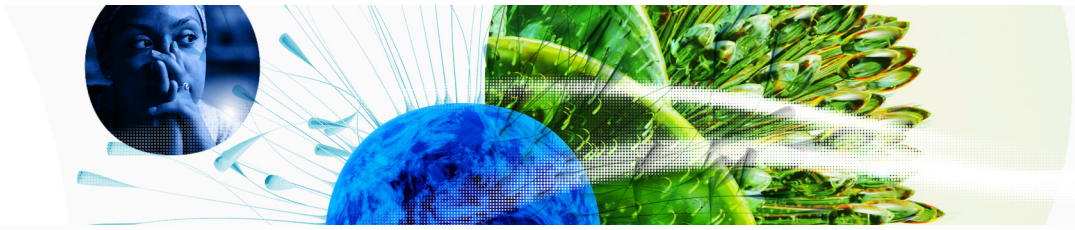
Global Innovation Index 2023



> Outdated data for Burundi

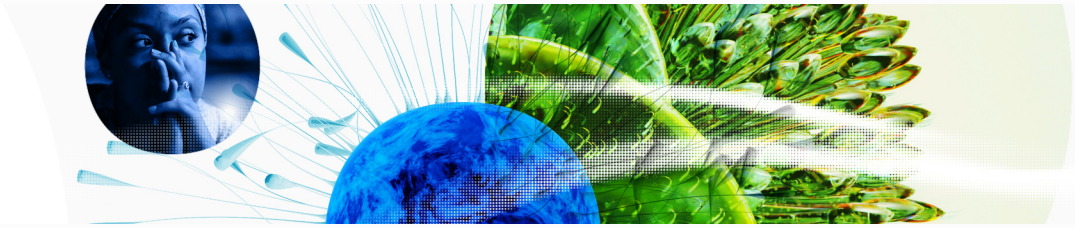
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2020	2022	World Economic Forum, Executive Opinion Survey (EOS)
2.1.1	Expenditure on education, % GDP	2020	2021	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2013	2019	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2018	2020	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD
2.2.3	Tertiary inbound mobility, %	2018	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
4.1.3	Loans from microfinance institutions, % GDP	2016	2021	International Monetary Fund, Financial Access Survey (FAS)
4.3.2	Domestic industry diversification	2013	2020	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2020	2022	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	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2020	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2020	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2020	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	GERD financed by abroad, % GDP	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.1	Patents by origin/bn PPP$ GDP	2020	2021	World Intellectual Property Organization; International Monetary Fund

Global Innovation Index 2023



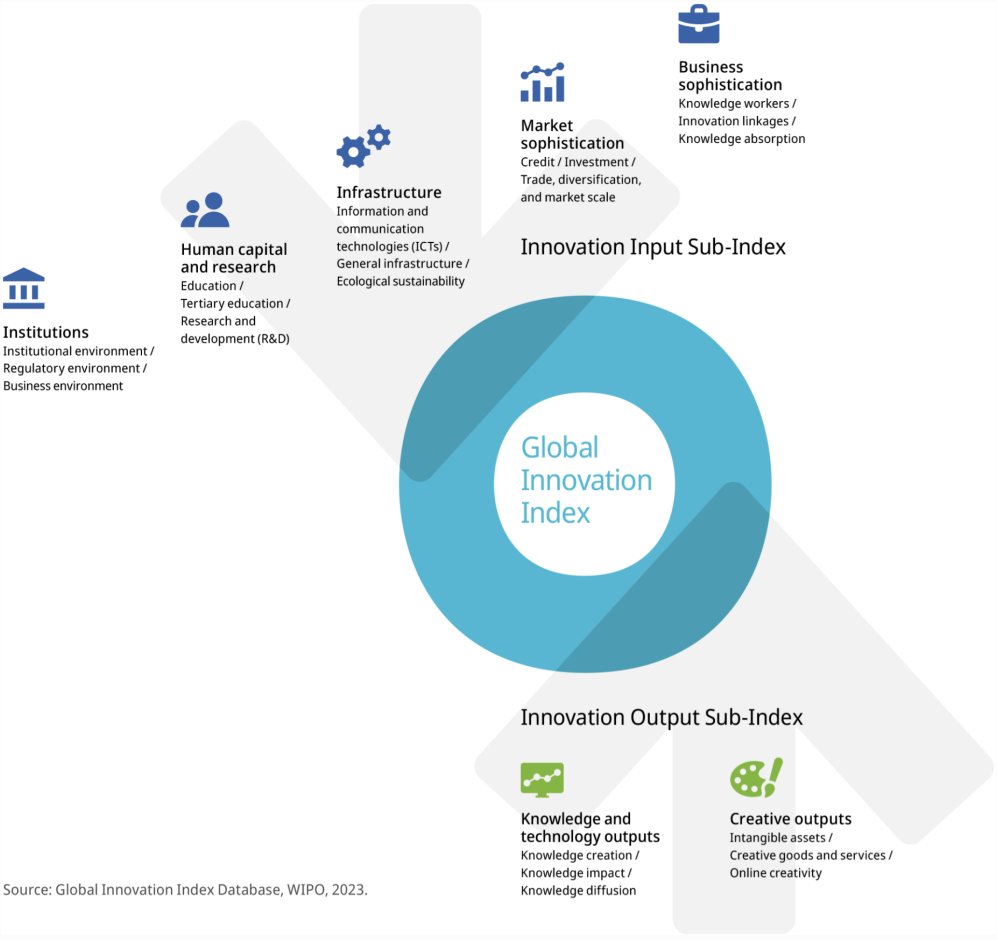
Code	Indicator name	Economy Year	Model Year	Source
6.1.3	Utility models by origin/bn PPP$ GDP	2020	2021	World Intellectual Property Organization; International Monetary Fund
6.2.4	High-tech manufacturing, %	2013	2020	United Nations Industrial Development Organization
7.1.2	Trademarks by origin/bn PPP$ GDP	2020	2021	World Intellectual Property Organization; International Monetary Fund
7.1.4	Industrial designs by origin/bn PPP$ GDP	2017	2021	World Intellectual Property Organization; International Monetary Fund

Global Innovation Index 2023



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.



Source: Global Innovation Index Database, WIPO, 2023.

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.