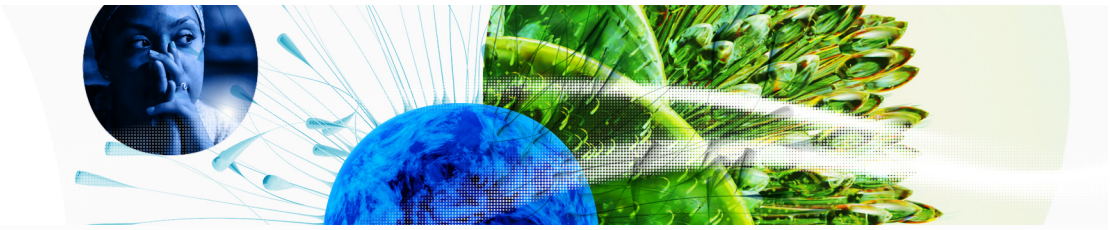
Global Innovation Index 2023



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**.

Kenya ranking in the Global Innovation Index 2023

> Kenya ranks 100th among the 132 economies featured in the GII 2023.

> Kenya ranks 20th among the 37 lower-middle-income group economies.

> Kenya ranks 8th among the 28 economies in Sub-Saharan Africa.

> Kenya GII Ranking (2020-2023)

The table shows the rankings of Kenya 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 Kenya in the GII 2023 is between ranks 91 and 104.

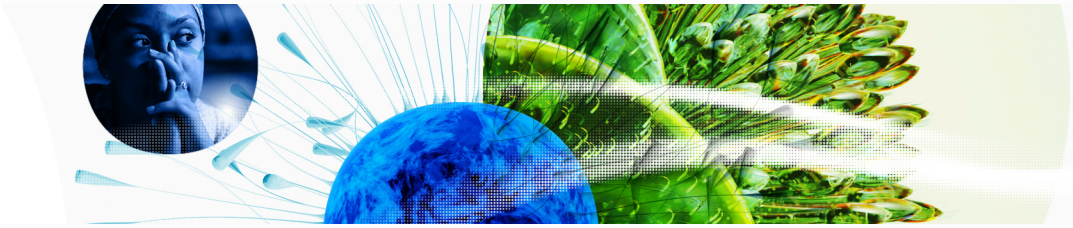
	GII Position	Innovation Inputs	Innovation Outputs
2020	86th	92nd	78th
2021	85th	89th	76th
2022	88th	103rd	79th
2023	100th	104th	91st

Kenya performs better in innovation outputs than innovation inputs in 2023.

This year Kenya ranks 104th in innovation inputs. This position is lower than last year.

Kenya ranks 91st in innovation outputs. This position is lower than last year.

Global Innovation Index 2023

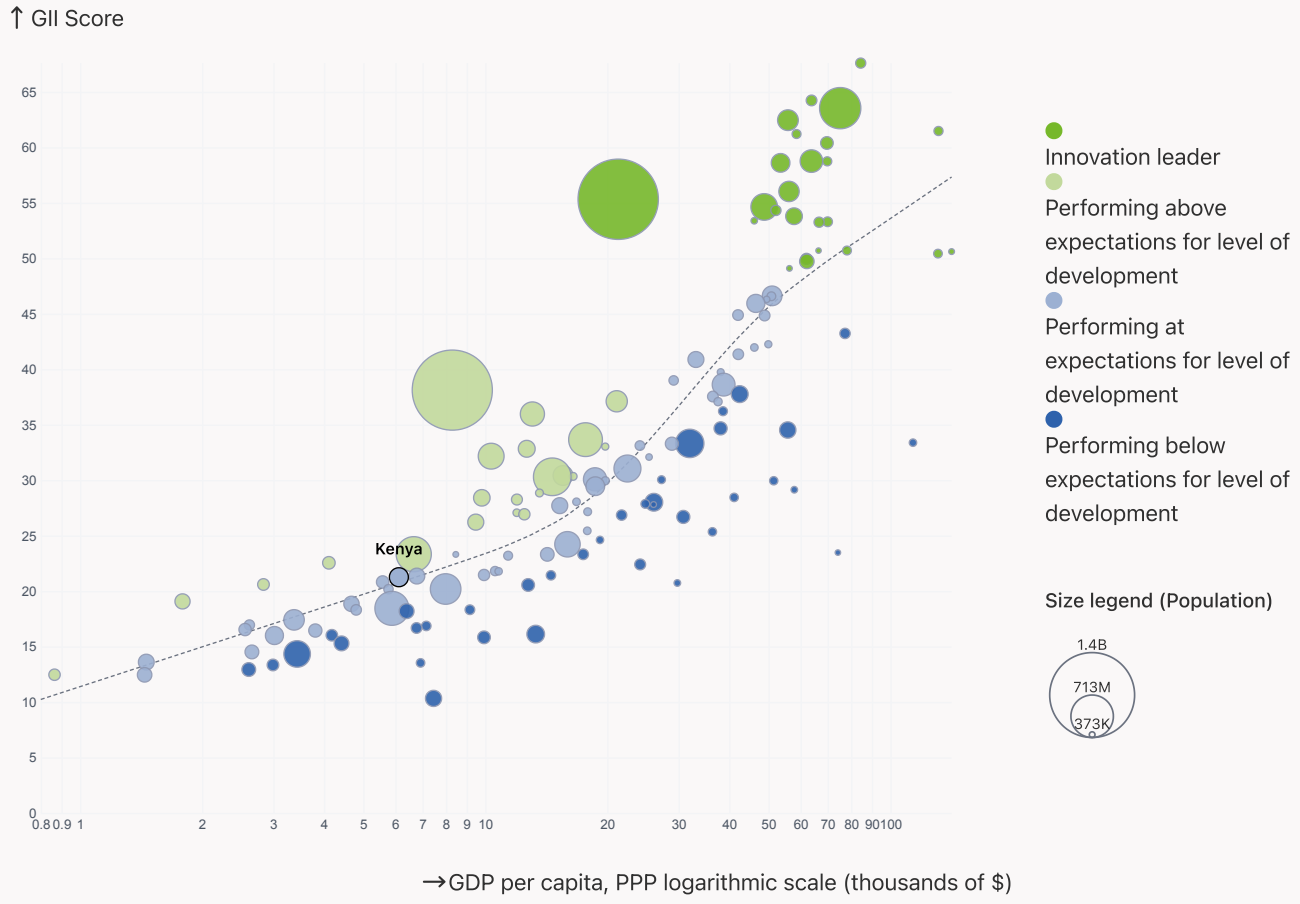


→ Expected vs. observed innovation performance

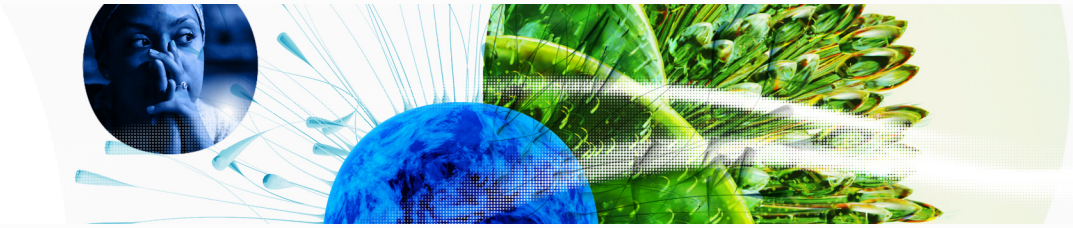
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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

> Relative to GDP, Kenya's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2023

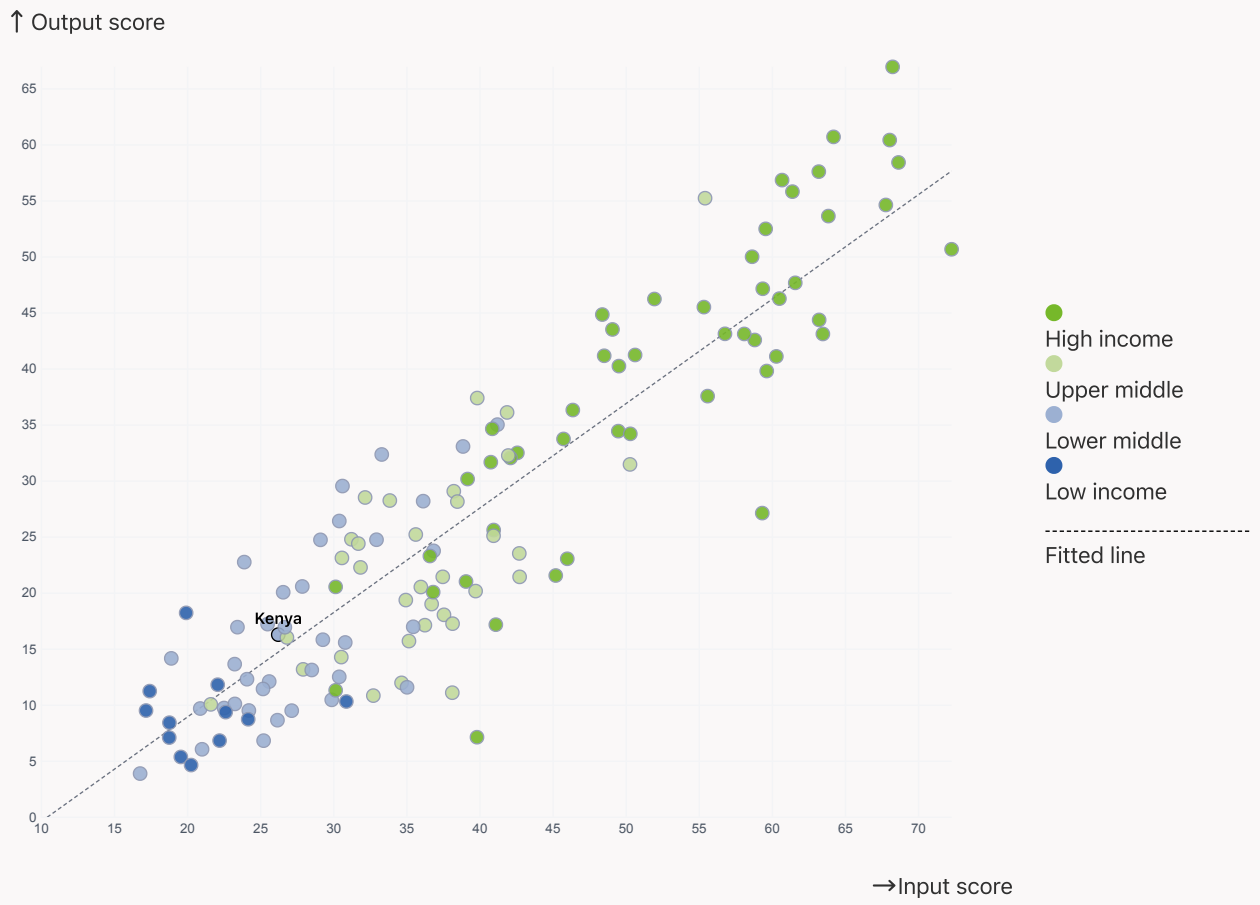


→ Effectively translating innovation investments into innovation outputs

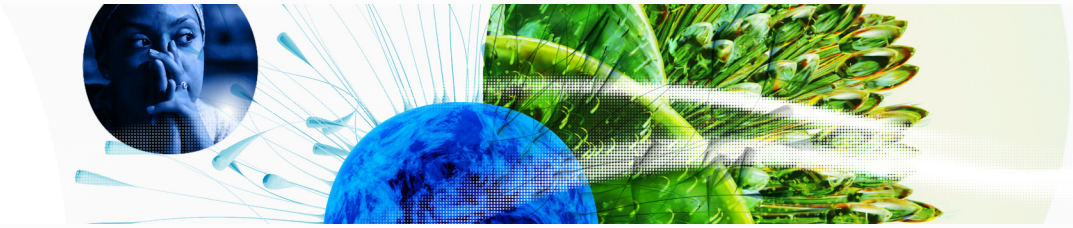
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

> Kenya produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

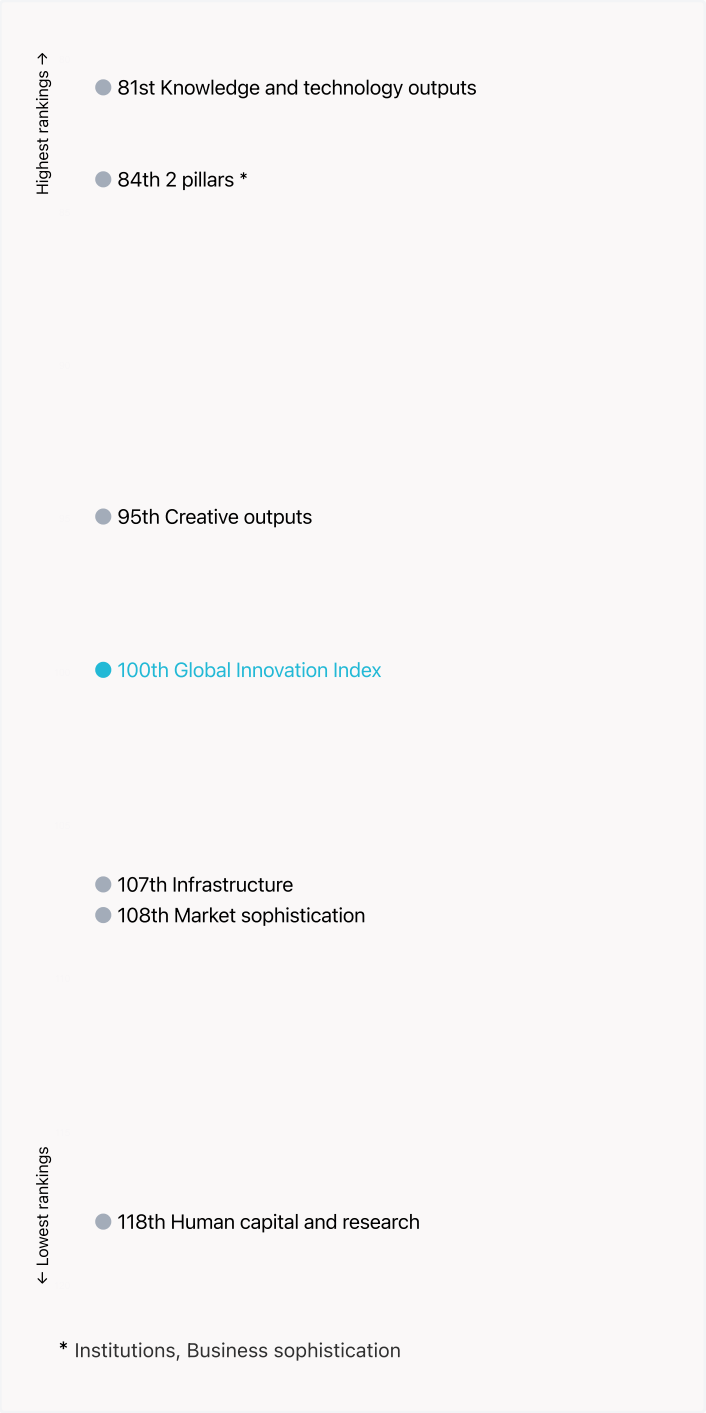


Global Innovation Index 2023



→ Overview of Kenya'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 Kenya are those that rank above the GII (shown in blue) and the weakest are those that rank below.



> Highest rankings

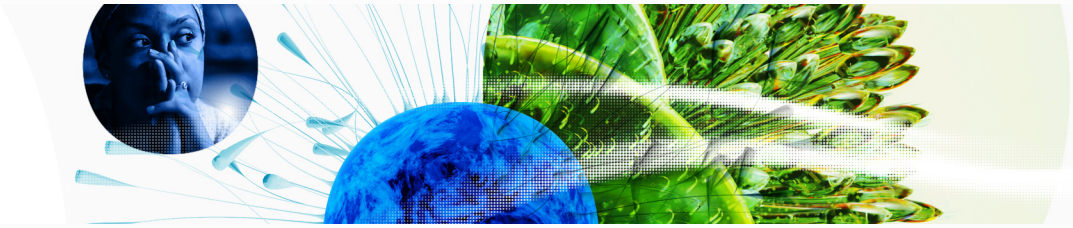
Kenya ranks highest in Knowledge and technology outputs (81st), Institutions, Business sophistication (84th) and Creative outputs (95th).

> Lowest rankings

Kenya ranks lowest in Human capital and research (118th), Market sophistication (108th) and Infrastructure (107th).

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

Global Innovation Index 2023



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

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

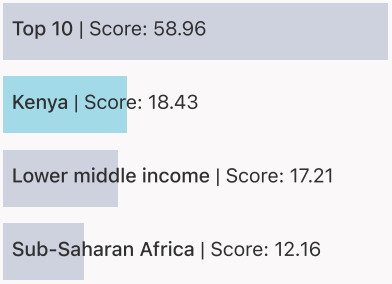
> Lower-Middle-Income economies

Kenya performs below the lower-middle-income group average in Creative outputs, Market sophistication, Human capital and research, Infrastructure.

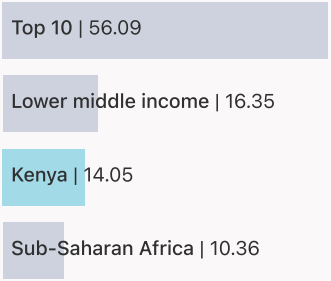
> Sub-Saharan Africa

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

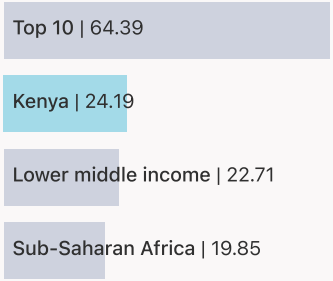
Knowledge and technology outputs



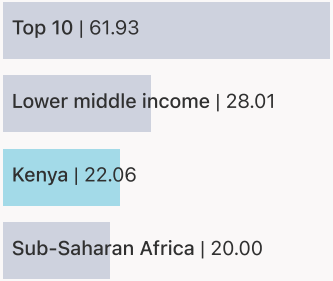
Creative outputs



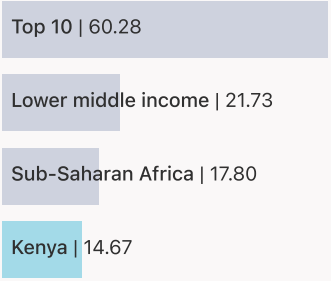
Business sophistication



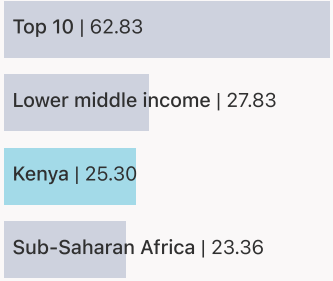
Market sophistication



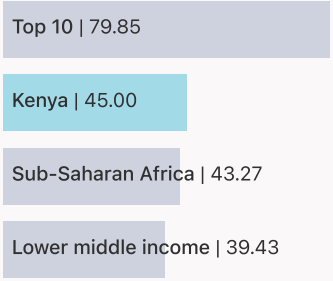
Human capital and research



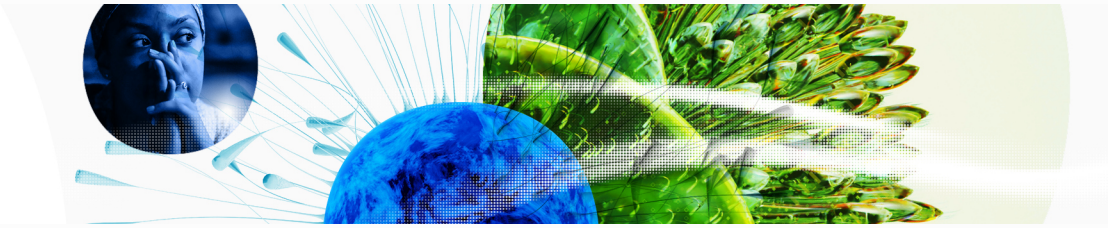
Infrastructure



Institutions



Global Innovation Index 2023



→ Innovation strengths and weaknesses in Kenya

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

> Kenya's main innovation strengths are **VC recipients, deals/bn PPP$ GDP** (rank 13), **Labor productivity growth, %** (rank 23) and **ICT services exports, % total trade** (rank 24).

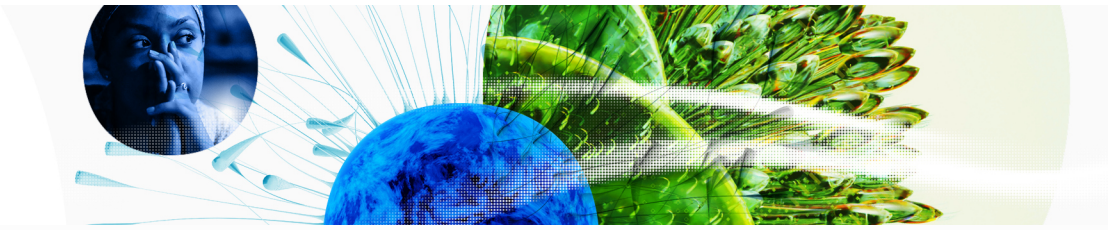
Strengths

Rank	Code	Indicator name
13	4.2.3	VC recipients, deals/bn PPP$ GDP
23	6.2.1	Labor productivity growth, %
24	6.3.4	ICT services exports, % total trade
29	4.2.4	VC received, value, % GDP
30	6.3.1	Intellectual property receipts, % total trade
34	6.1.3	Utility models by origin/bn PPP$ GDP
37	2.1.1	Expenditure on education, % GDP
41	5.1.2	Firms offering formal training, %
46	7.1.3	Global brand value, top 5,000
53	6.1.5	Citable documents H-index

Weaknesses

Rank	Code	Indicator name
122	2.1.5	Pupil-teacher ratio, secondary
118	5.3.3	ICT services imports, % total trade
116	3.2.1	Electricity output, GWh/mn pop.
114	2.2.1	Tertiary enrolment, % gross
112	5.1.5	Females employed w/advanced degrees, %
100	7.2.1	Cultural and creative services exports, % total trade
98	4.3.2	Domestic industry diversification
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$

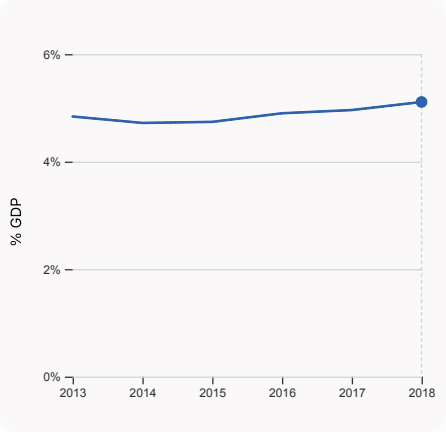
Global Innovation Index 2023



→ Kenya's innovation system

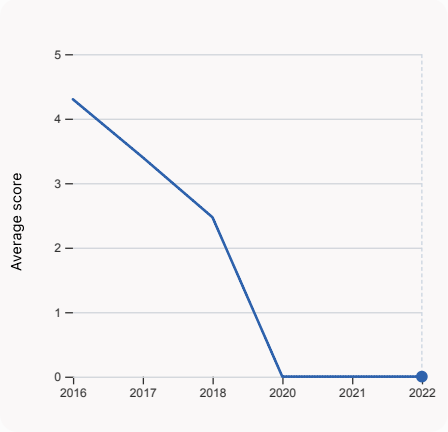
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Kenya



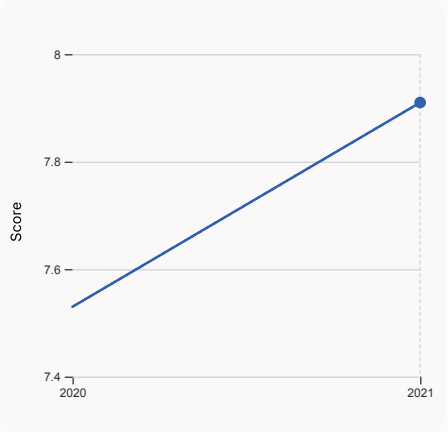
2.1.1 Expenditure on education, % GDP

was equal to 5.11% GDP in 2018, up by 0.15 percentage points from the year prior – and equivalent to an indicator rank of 37.



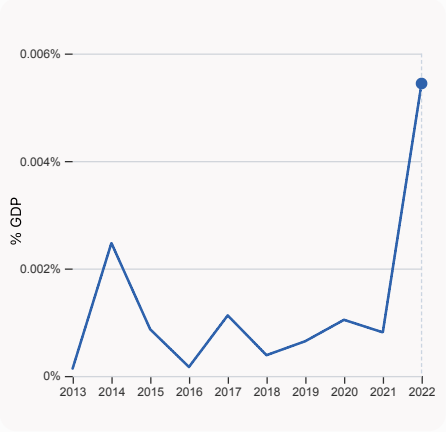
2.3.4 QS university ranking, top 3

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



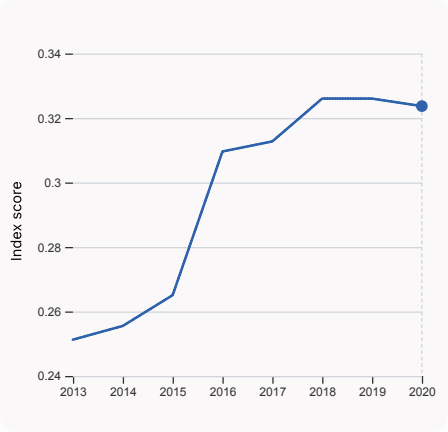
3.1.1 ICT access

was equal to a score of 7.91 in 2021, up by 5.046% from the year prior – and equivalent to an indicator rank of 92.



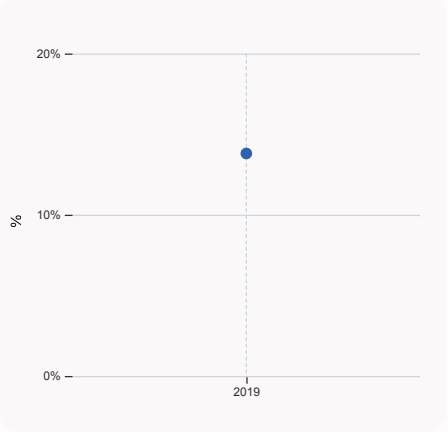
4.2.4 VC received, value, % GDP

was equal to 0.00544% GDP in 2022, up by 0.0046 percentage points from the year prior – and equivalent to an indicator rank of 29.



4.3.2 Domestic industry diversification

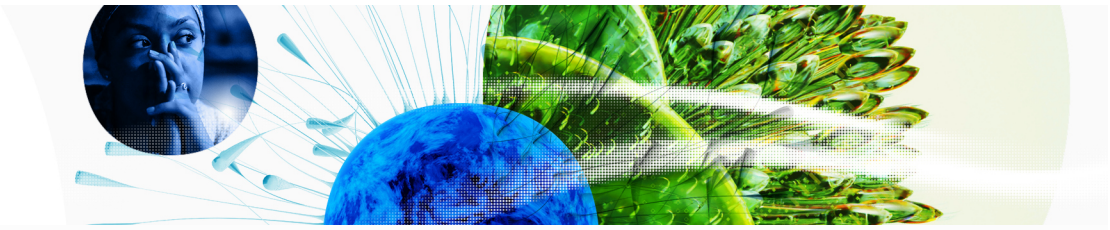
was equal to an index score of 0.324 in 2020, down by 0.72% from the year prior – and equivalent to an indicator rank of 98.



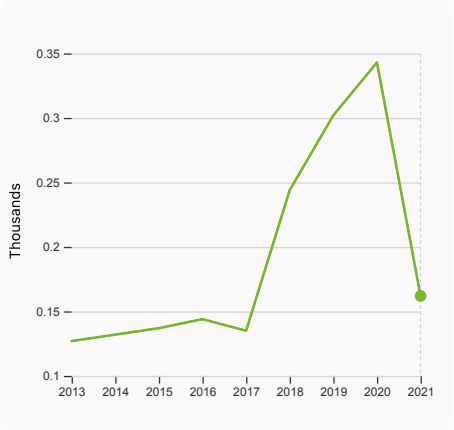
5.1.1 Knowledge-intensive employment, %

was equal to 13.8 % in 2019, equivalent to an indicator rank of 93.

Global Innovation Index 2023

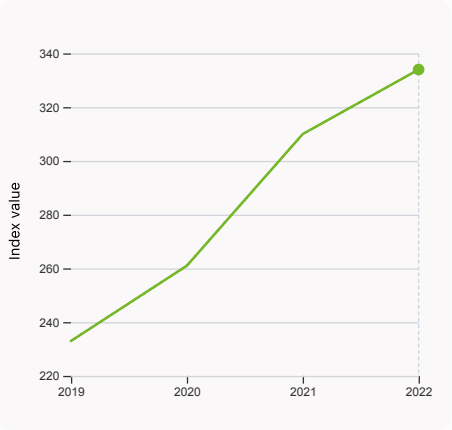


> Innovation outputs in Kenya



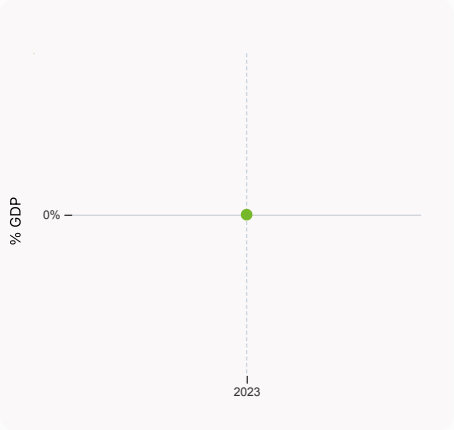
6.1.1 Patents by origin

was equal to 0.16 Thousands in 2021, down by 52.77% from the year prior – and equivalent to an indicator rank of 74.



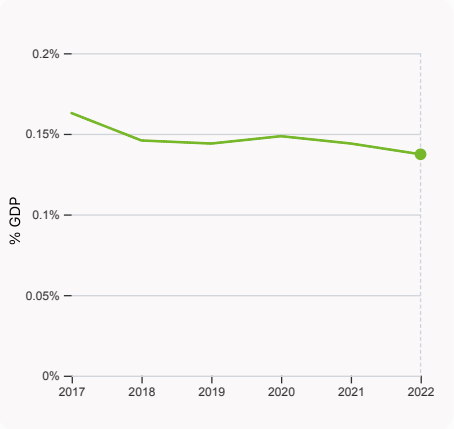
6.1.5 Citable documents H-index

was equal to an index value of 334 in 2022, up by 7.74% from the year prior – and equivalent to an indicator rank of 53.



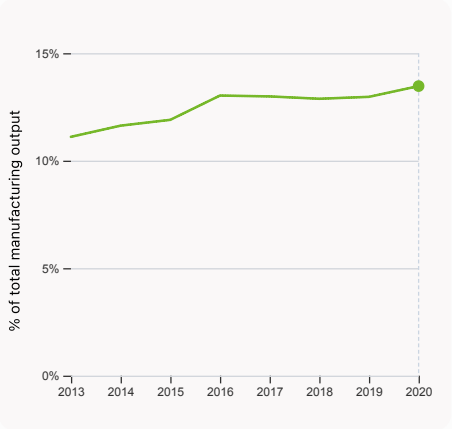
6.2.2 Unicorn valuation, % GDP

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



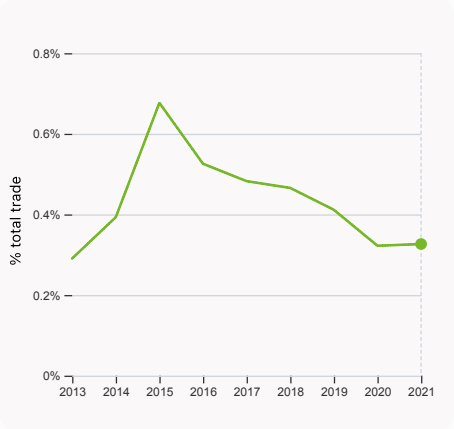
6.2.3 Software spending, % GDP

was equal to 0.137% GDP in 2022, down by 0.0067 percentage points from the year prior – and equivalent to an indicator rank of 84.



6.2.4 High-tech manufacturing, %

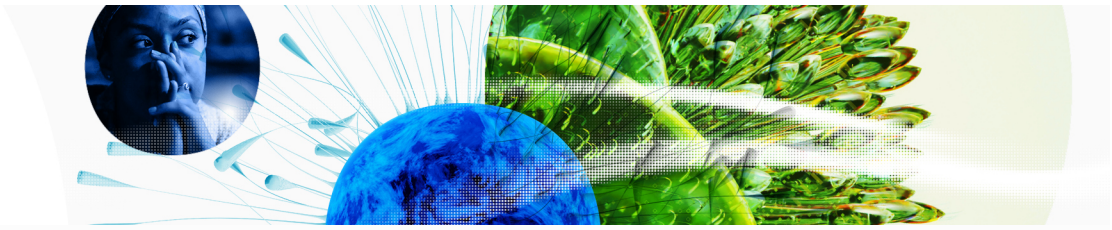
was equal to 13.47% of total manufacturing output in 2020, up by 0.5 percentage points from the year prior – and equivalent to an indicator rank of 82.

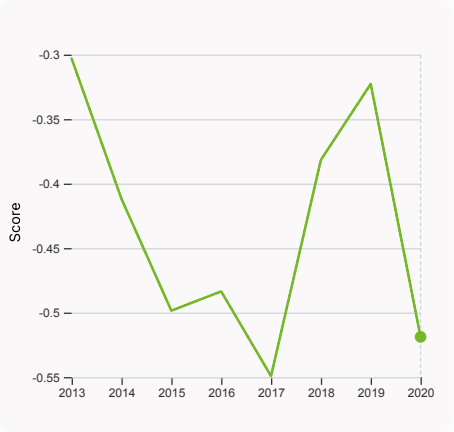


6.3.1 Intellectual property receipts, % total trade

was equal to 0.327% total trade in 2021, up by 0.0043 percentage points from the year prior – and equivalent to an indicator rank of 30.

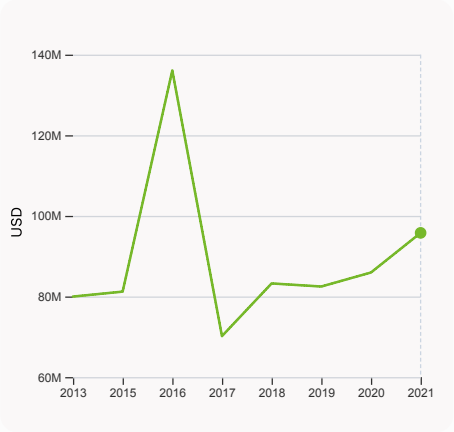
Global Innovation Index 2023





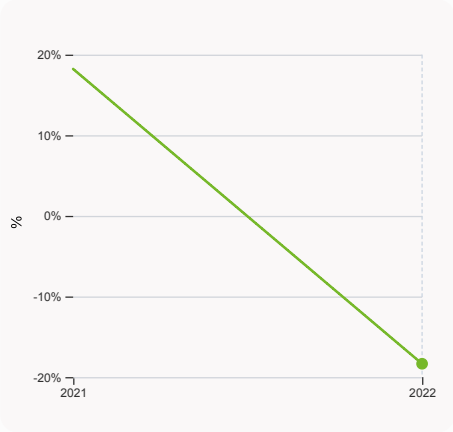
6.3.2 Production and export complexity

was equal to a score of -0.519 in 2020, down by 60.76% from the year prior – and equivalent to an indicator rank of 89.



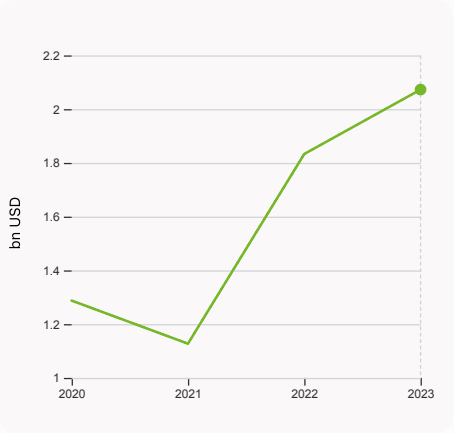
6.3.3 High-tech exports

was equal to 95,784,408 USD in 2021, up by 11.44% from the year prior – and equivalent to an indicator rank of 85.



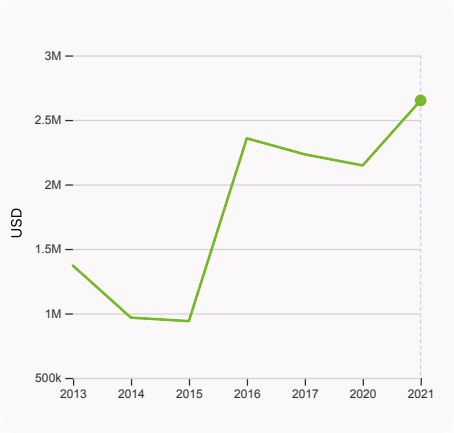
7.1.1 Intangible asset intensity, top 15, %

was equal to -18.344% in 2022, down by 36.56 percentage points from the year prior – and equivalent to an indicator rank of 72.



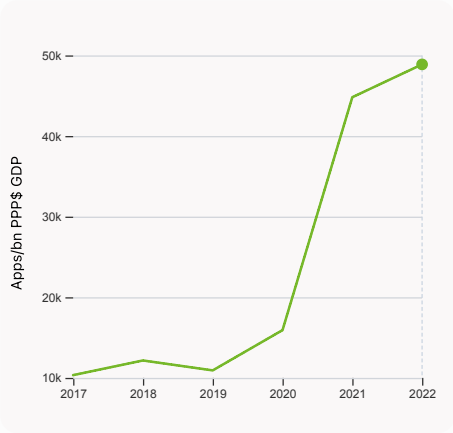
7.1.3 Global brand value, top 5,000

was equal to 2.073 bn USD in 2023, up by 13.074% from the year prior – and equivalent to an indicator rank of 46.



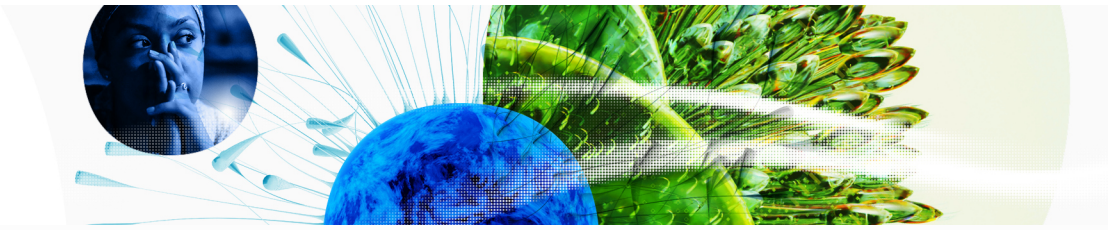
7.2.1 Cultural and creative services exports

was equal to 2,651,000 USD in 2021, up by 23.47% from the year prior – and equivalent to an indicator rank of 100.



7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 48,886.3 Apps/bn PPP$ GDP in 2022, up by 9.088% from the year prior – and equivalent to an indicator rank of 84.



Kenya's innovation top performers

7.1.1 Top 15 intangible-asset intensive companies in Kenya

Rank	Firm	Intensity, %
1	SAFARICOM PLC	78.56
2	EQUITY GROUP HOLDINGS PLC/KENYA	2.95
3	ABSA BANK KENYA PLC	1.80

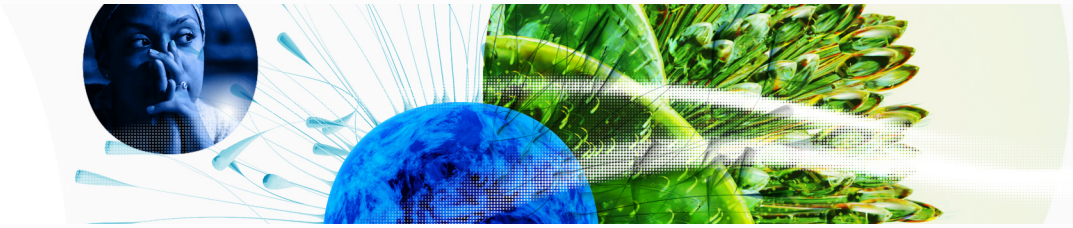
Source: Brand Finance (https://brandirectory.com/reports/gift-2022).
Note: Brand Finance only provides within economy ranks.

7.1.3 Top 5,000 companies in Kenya with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	SAFARICOM	Telecoms	710.0
2	EQUITY BANK	Banking	531.7
3	KENYA COMMERCIAL BANK	Banking	380.0

Source: Brand Finance (https://brandirectory.com).
Note: Rank corresponds to within economy ranks.

Global Innovation Index 2023



Kenya

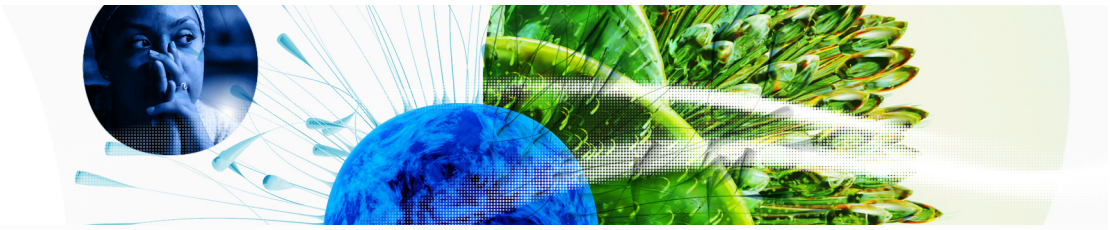
GII 2023 rank
100

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
91	104	Lower middle	SSA	54.0	311.8	6,121.9

	Score / Value	Rank
Institutions	**45.0**	**84**
1.1 Institutional environment	**32.2**	**96**
1.1.1 Operational stability for businesses*	36.8	104
1.1.2 Government effectiveness*	27.6	91
1.2 Regulatory environment	**57.0**	**81**
1.2.1 Regulatory quality*	30.5	96
1.2.2 Rule of law*	28.3	86
1.2.3 Cost of redundancy dismissal	15.8	63
1.3 Business environment	**45.8**	**67**
1.3.1 Policies for doing business†	45.8	70
1.3.2 Entrepreneurship policies and culture†	n/a	n/a
Human capital and research	**14.7**	**118**
2.1 Education	**40.5**	**98**
2.1.1 Expenditure on education, % GDP	5.1	37 ●
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a
2.1.3 School life expectancy, years	n/a	n/a
2.1.4 PISA scales in reading, maths and science	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	30.7	122 ○ ◇
2.2 Tertiary education	**3.5**	**124** ◇
2.2.1 Tertiary enrolment, % gross	10.0	114 ○
2.2.2 Graduates in science and engineering, %	n/a	n/a
2.2.3 Tertiary inbound mobility, %	1.3	85
2.3 Research and development (R&D)	**0.0**	**119**
2.3.1 Researchers, FTE/mn pop.	n/a	n/a
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a
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	**25.3**	**107**
3.1 Information and communication technologies (ICTs)	**56.4**	**87**
3.1.1 ICT access*	68.5	92
3.1.2 ICT use*	35.2	111 ◇
3.1.3 Government's online service*	64.9	68
3.1.4 E-participation*	57.0	64
3.2 General infrastructure	**7.0**	**129** ◇
3.2.1 Electricity output, GWh/mn pop.	215.9	116 ○
3.2.2 Logistics performance*	n/a	n/a
3.2.3 Gross capital formation, % GDP	19.8	99
3.3 Ecological sustainability	**12.5**	**116**
3.3.1 GDP/unit of energy use	7.4	93
3.3.2 Environmental performance*	20.2	106
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.3	98
Market sophistication	**22.1**	**108**
4.1 Credit	**7.2**	**120**
4.1.1 Finance for startups and scaleups†	n/a	n/a
4.1.2 Domestic credit to private sector, % GDP	32.1	94
4.1.3 Loans from microfinance institutions, % GDP	0.3	44
4.2 Investment	**21.5**	**33**
4.2.1 Market capitalization, % GDP	23.1	56
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	0.1	42
4.2.3 VC recipients, deals/bn PPP$ GDP	0.2	13 ●
4.2.4 VC received, value, % GDP	0.0	29 ●
4.3 Trade, diversification, and market scale	**37.5**	**109**
4.3.1 Applied tariff rate, weighted avg., %	9.3	115
4.3.2 Domestic industry diversification	66.1	98 ○
4.3.3 Domestic market scale, bn PPP$	311.8	59

	Score / Value	Rank
Business sophistication	**24.2**	**84**
5.1 Knowledge workers	**22.7**	**91**
5.1.1 Knowledge-intensive employment, %	13.8	93
5.1.2 Firms offering formal training, %	37.4	41 ●
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, %	1.7	112 ○
5.2 Innovation linkages	**23.2**	**62**
5.2.1 University-industry R&D collaboration†	44.6	64
5.2.2 State of cluster development†	41.0	69
5.2.3 GERD financed by abroad, % GDP	n/a	n/a
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	58
5.2.5 Patent families/bn PPP$ GDP	0.0	92
5.3 Knowledge absorption	**26.7**	**96**
5.3.1 Intellectual property payments, % total trade	0.6	62
5.3.2 High-tech imports, % total trade	8.5	59
5.3.3 ICT services imports, % total trade	0.4	118 ○
5.3.4 FDI net inflows, % GDP	0.4	115
5.3.5 Research talent, % in businesses	n/a	n/a
Knowledge and technology outputs	**18.4**	**81**
6.1 Knowledge creation	**11.3**	**77**
6.1.1 Patents by origin/bn PPP$ GDP	0.6	74
6.1.2 PCT patents by origin/bn PPP$ GDP	0.0	92
6.1.3 Utility models by origin/bn PPP$ GDP	0.5	34 ●
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a
6.1.5 Citable documents H-index	16.2	53 ●
6.2 Knowledge impact	**23.8**	**84**
6.2.1 Labor productivity growth, %	2.5	23 ●
6.2.2 Unicorn valuation, % GDP	0.0	48 ○ ◇
6.2.3 Software spending, % GDP	0.1	84
6.2.4 High-tech manufacturing, %	13.5	82
6.3 Knowledge diffusion	**20.2**	**74**
6.3.1 Intellectual property receipts, % total trade	0.4	30 ●
6.3.2 Production and export complexity	41.6	89
6.3.3 High-tech exports, % total trade	0.6	85
6.3.4 ICT services exports, % total trade	4.3	24 ●
6.3.5 ISO 9001 quality/bn PPP$ GDP	1.8	90
Creative outputs	**14.1**	**95**
7.1 Intangible assets	**18.9**	**89**
7.1.1 Intangible asset intensity, top 15, %	-18.3	72 ◇
7.1.2 Trademarks by origin/bn PPP$ GDP	21.3	89
7.1.3 Global brand value, top 5,000	1.8	46 ●
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.5	85
7.2 Creative goods and services	**1.3**	**112**
7.2.1 Cultural and creative services exports, % total trade	0.0	100 ○
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	1.7	52
7.2.4 Creative goods exports, % total trade	0.2	87
7.3 Online creativity	**17.2**	**84**
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	1.1	97
7.3.2 Country-code TLDs/th pop. 15-69	0.9	93
7.3.3 GitHub commits/mn pop. 15-69	7.5	59
7.3.4 Mobile app creation/bn PPP$ GDP	59.2	84

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.



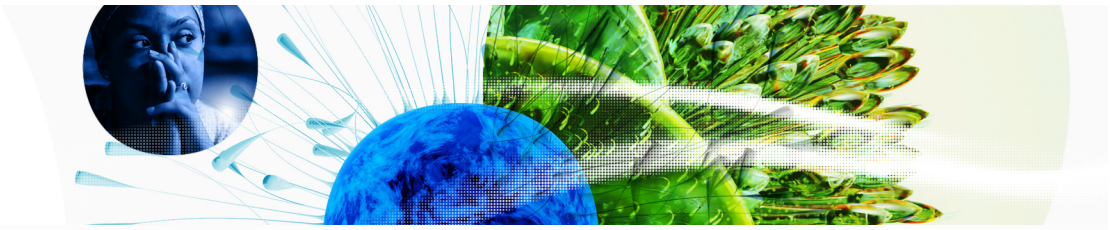
→ Data availability

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

> Kenya has missing data for fourteen indicators and outdated data for nine indicators.

> Missing data for Kenya

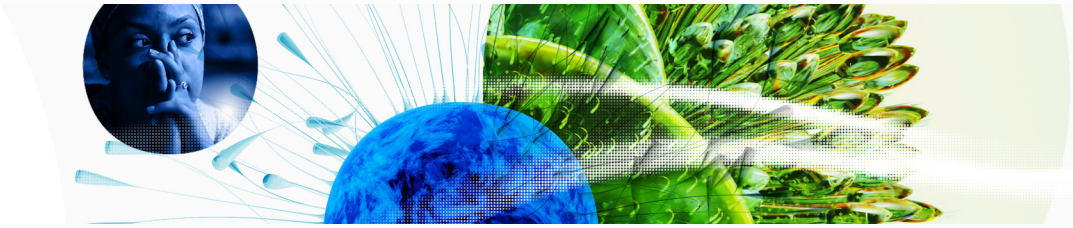
Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2019	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2020	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD
2.3.1	Researchers, FTE/mn pop.	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
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.
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
5.1.3	GERD performed by business, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.3	GERD financed by abroad, % GDP	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
7.2.2	National feature films/mn pop. 15-69	n/a	2021	OMDIA; United Nations, World Population Prospects



> Outdated data for Kenya

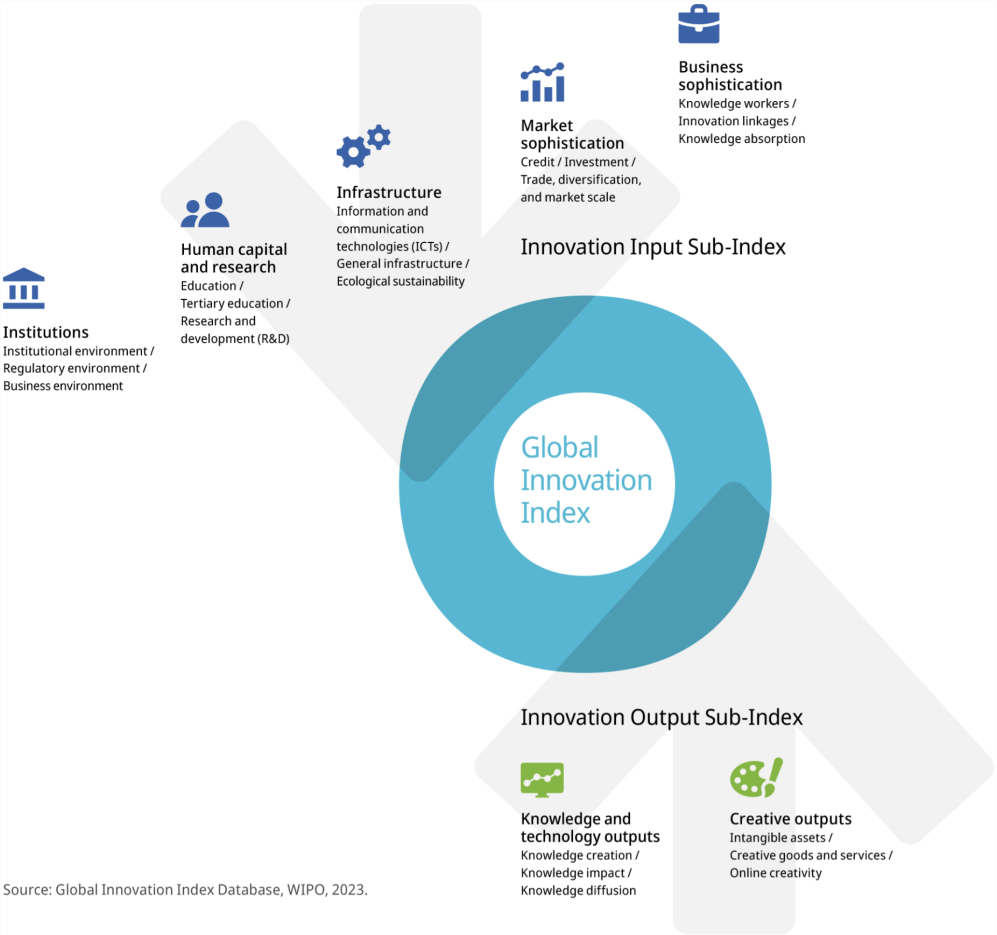
Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2018	2021	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2015	2020	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2019	2020	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2019	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
5.1.1	Knowledge-intensive employment, %	2019	2022	International Labour Organization
5.1.2	Firms offering formal training, %	2018	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2019	2022	International Labour Organization
7.1.2	Trademarks by origin/bn PPP$ GDP	2020	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.