Global Innovation Index 2025

Ghana ranking in the Global Innovation Index 2025

Ghana ranks 101st among the 139 economies featured in the GII 2025.

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.

Ghana ranks 16th among the 37 Lower middle-income group economies.

Ghana ranks 8th among the 32 economies in Sub-Saharan Africa.

Ghana GII Ranking (2020-2025)

The table shows the rankings of Ghana over the past six 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 Ghana in the GII 2025 is between ranks 93 and 114.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	108th	113rd	93rd
2021	112nd	114th	103rd
2022	95th	105th	88th
2023	99th	107th	85th
2024	101st	108th	94th
2025	101st	108th	93rd

Ghana performs better in innovation outputs than innovation inputs in 2025.

This year **Ghana ranks 108th in innovation inputs.** This position is the same as last year.

Ghana ranks 93rd in innovation outputs. This position is higher than last year.

Ghana has no clusters in the world's top innovation clusters of the Global Innovation Index.

Global Innovation Index 2025

> Global Innovation Tracker

The Global Innovation Tracker 2025 shows what is the current state of innovation in Ghana, how rapidly is technology being embraced and what are the resulting societal impacts.

For Ghana, 4 indicators have improved in the short-term and 4 indicators have worsened.

Science and innovation investment

	Scientific publications	R&D investments	Venture capital deal numbers	International patent filings
Short term	▲ 6.1 % 2023 - 2024	n/a	▼ -15 % 2023 - 2024	▼ -50 % 2023 - 2024
Long term (annual growth)	▲ 14.5 % 2014 - 2024	n/a	▼ -4 % 2020 - 2024	n/a

Technology adoption

	Safe sanitation	Connectivity		Robots	Electric vehicles
		Fixed broadband	5G		
Short term	▲ 3.5% 2023 - 2024	▼ -9.4% 2022 - 2023	n/a	n/a	n/a
Long term (annual growth)	▲ 4.4% 2014 - 2024	▲ 10.6% 2013 - 2023	n/a	n/a	n/a
Penetration	18.8 per 100 inhabitants in 2024	0.6 per 100 inhabitants in 2023	n/a	n/a	n/a

Socioeconomic impact

	Labor productivity	Life expectancy	Temperature change
Short term	▲ 1.2 % 2023 - 2024	▲ 0.4 % 2022 - 2023	+ 1.7 °C 2024
Long term (annual growth)	▲ 2.6 % 2014 - 2024	▲ 0.5 % 2013 - 2023	+ 0.9 °C 2014
Level	17,785.7 USD in 2024	65.5 years in 2023	n/a

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the countries. from 1951–1980. Figures are rounded.

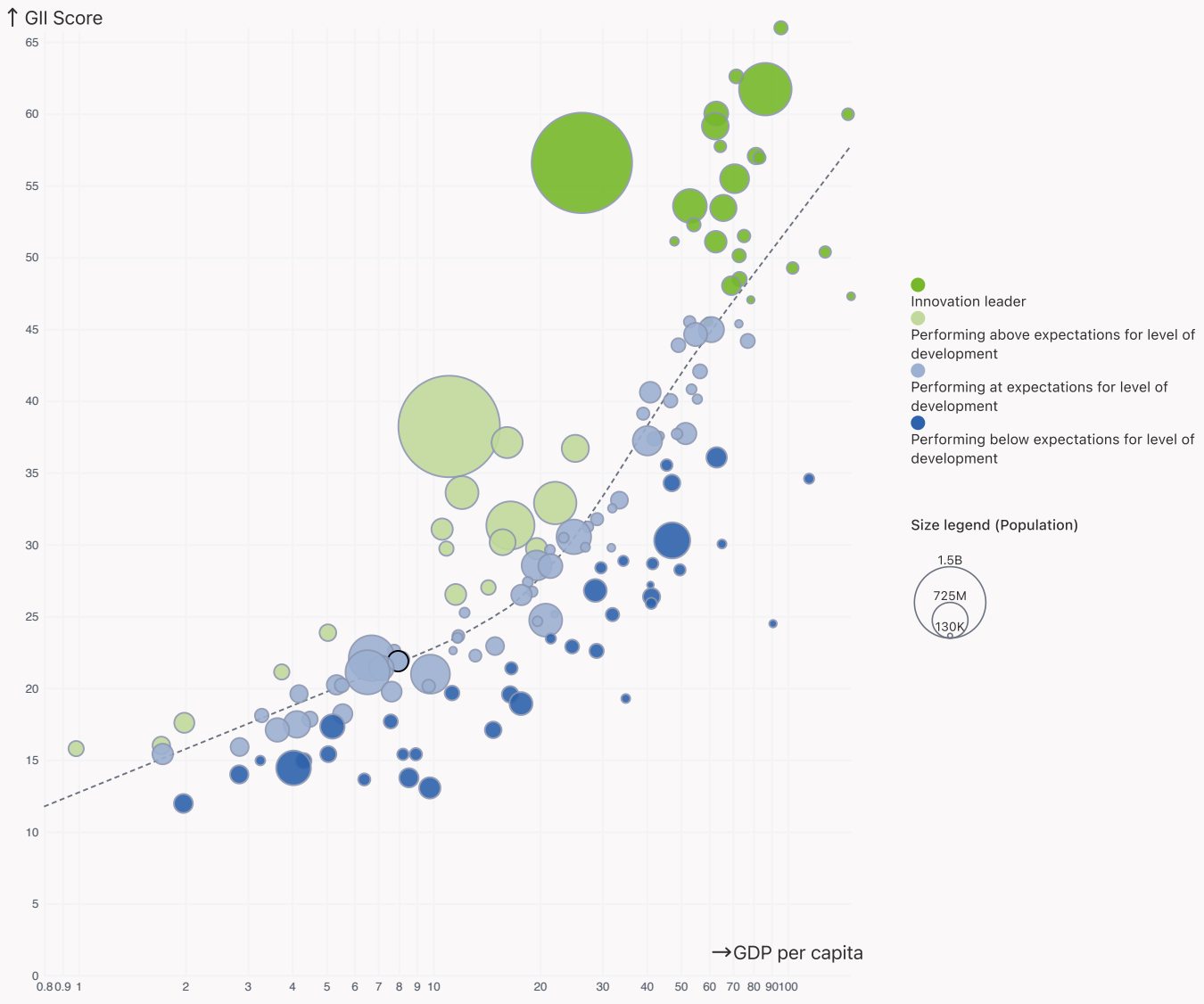
Global Innovation Index 2025

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 Ghana performs at expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2025

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.

Ghana produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

Global Innovation Index 2025

Overview of Ghana's rankings in the seven areas of the GII in 2025

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

Highest Rankings

Ghana ranks highest in Institutions (82nd), Knowledge and technology outputs (86th) and Business sophistication, Creative outputs (91st).

Lowest Rankings

Ghana ranks lowest in Market sophistication (129th), Infrastructure (109th) and Human capital and research (108th).

* Business sophistication, Creative outputs

The full WIPO Intellectual Property Statistics profile for Ghana can be found on https://www.wipo.int/edocs/statistics-country-profile/en/gh.pdf

Global Innovation Index 2025

Benchmark of Ghana against other economy groupings for each of the seven areas of the GII Index

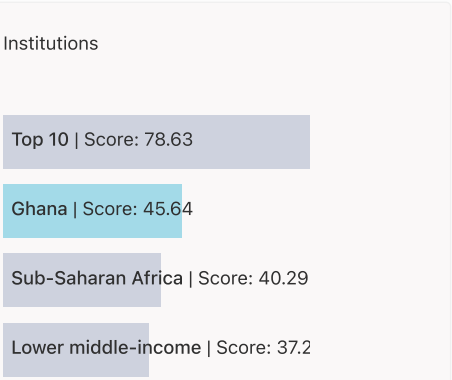
The charts shows the relative position of Ghana (blue bar) against other economy groupings (grey bars)

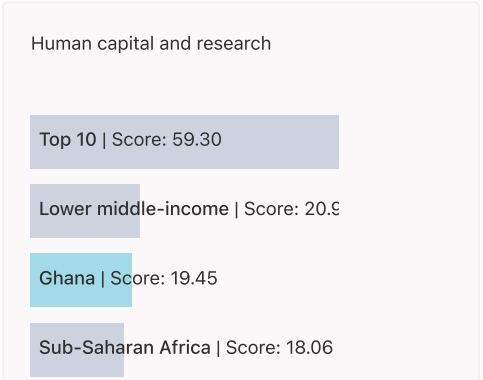
Lower middle-income economies

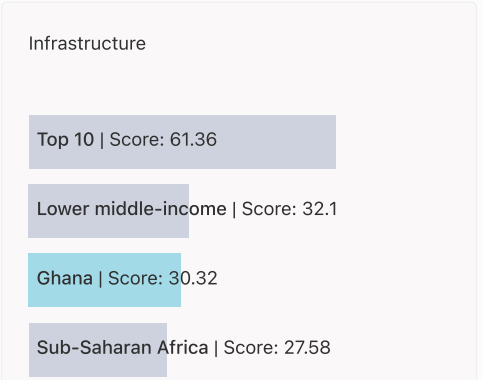
Ghana performs above the Lower middle-income group average in Institutions, Business sophistication, Knowledge and technology outputs, Creative outputs.

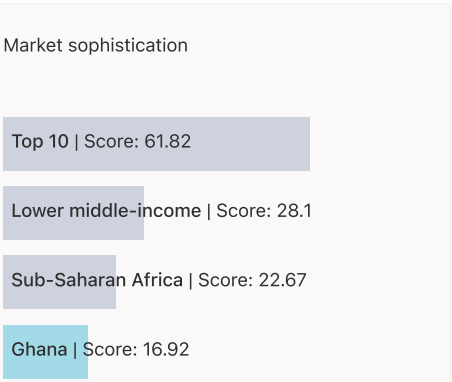
Sub-Saharan Africa

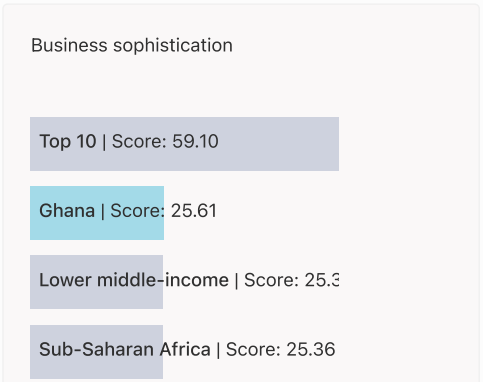
Ghana performs above the regional average in Institutions, Human capital and research, Infrastructure, Business sophistication, Knowledge and technology outputs, Creative outputs.

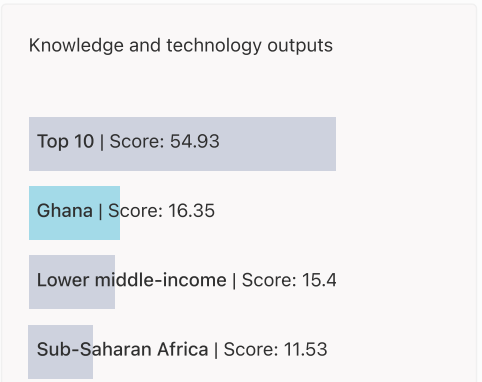


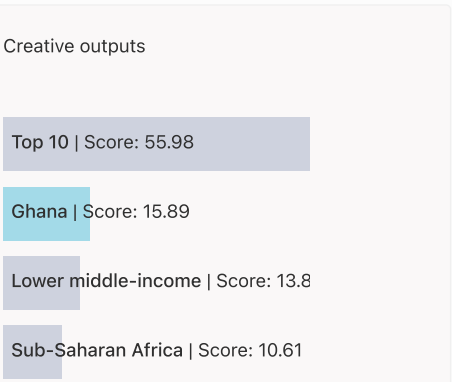












Global Innovation Index 2025

Innovation strengths and weaknesses in Ghana

The table below gives an overview of the indicator strengths and weaknesses of Ghana in the GII 2025.

Ghana's best-ranked innovation strengths are **Cultural and creative services exports, % total trade** (rank 9), **Unicorn valuation, % GDP** (rank 16) and **GDP/unit of energy use** (rank 24).

Strengths

Rank	Code	Indicator name
9	7.2.1	Cultural and creative services exports, % total trade
16	6.2.2	Unicorn valuation, % GDP
24	3.3.1	GDP/unit of energy use
26	5.1.3	Youth demographic dividend, %
39	5.3.1	Intellectual property payments, % total trade
49	6.2.1	Labor productivity growth, %
49	7.1.4	Industrial designs by origin/bn PPP$ GDP
53	5.2.1	Public research–industry co-publications, %
57	4.2.2	Venture capital (VC) received, deal count/bn PPP$ GDP
64	3.3.2	Low-carbon energy use, %

Weaknesses

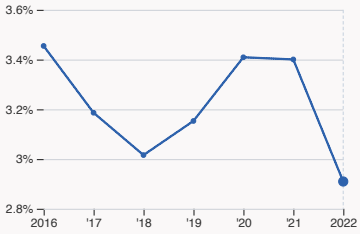
Rank	Code	Indicator name
132	6.2.3	Software spending, % GDP
131	4.1.2	Domestic credit to private sector, % GDP
131	3.2.3	Gross capital formation, % GDP
131	7.1.2	Trademarks by origin/bn PPP$ GDP
127	6.1.1	Patents by origin/bn PPP$ GDP
119	7.3.3	Mobile app creation/bn PPP$ GDP
100	5.2.5	Patent families/bn PPP$ GDP
80	2.3.4	QS university ranking, top 3*
78	7.1.1	Intangible asset intensity, top 15, %
44	2.3.3	Global corporate R&D investors, top 3, mn USD

Global Innovation Index 2025

Ghana's innovation system

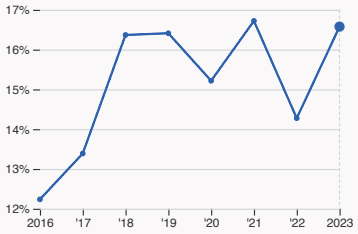
As far as practicable, the plots below present unscaled indicator data.

Innovation inputs in Ghana



2.1.1 Expenditure on education

was equal to 2.91 % GDP in 2022, down by 0.49 percentage points from the year prior – and equivalent to an indicator rank of 115.

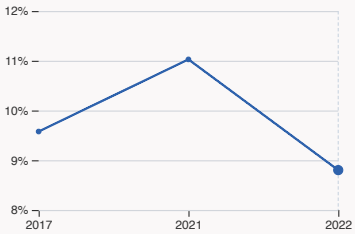


2.2.2 Graduates in science and engineering

was equal to 16.58 % of total graduates in 2023, up by 2.3 percentage points from the year prior – and equivalent to an indicator rank of 99.

2.3.4 QS university ranking

The country does not have any universities in the QS world universities ranking in 2024.

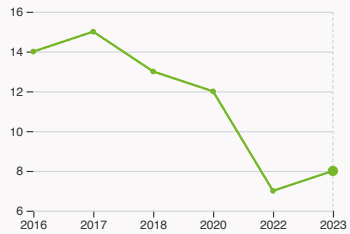


5.1.1 Knowledge-intensive employment

was equal to 8.8 % in 2022, down by 2.23 percentage points from the year prior – and equivalent to an indicator rank of 105.

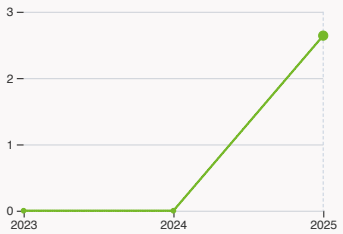
Global Innovation Index 2025

Innovation outputs in Ghana



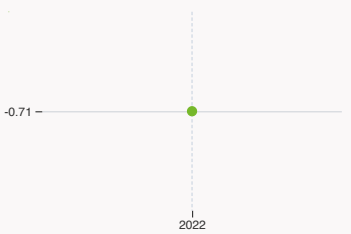
6.1.1 Patents by origin

was equal to 8 patents in 2023, up by 14.29% from the year prior – and equivalent to an indicator rank of 127.



6.2.2 Unicorn valuation

was equal to 2.64 % GDP in 2025, up by 264% from the year prior – and equivalent to an indicator rank of 16.

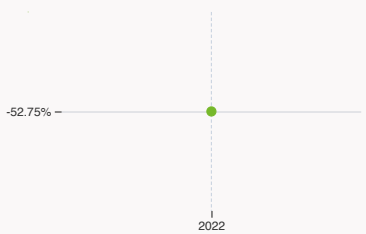


6.3.2 Production and export complexity

was equal to a score of -0.71 in 2022 – and equivalent to an indicator rank of 101.

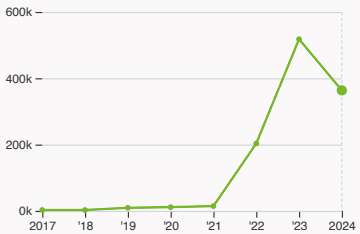
6.3.3 High-tech exports

was equal to 28.76 million USD in 2023, down by 3.65% from the year prior – and equivalent to an indicator rank of 125.



7.1.1 Intangible asset intensity, top 15

was equal to -52.75 % for the top 15 companies in 2022 – and equivalent to an indicator rank of 78.



7.3.3 Mobile app creation

was equal to 363.52 thousand global downloads of mobile apps in 2024, down by 29.82% from the year prior – and equivalent to an indicator rank of 119.

Ghana's innovation top performers

Data not available for 2.3.3 Global corporate R&D investors, 2.3.4 QS university ranking of top universities and 7.1.3 Global brand value, top 5,000.

Disclaimer: This section contains only the top performers per country. For the complete list, please visit the GII Innovation Ecosystems and Data Explorer website.

5.2.3 University industry and international engagement, top 5 universities

Rank	University	Score
1	UNIVERSITY OF GHANA	46.80
2	KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY	46.20
3	UNIVERSITY OF CAPE COAST	41.35

Source: Times Higher Education (THE), World University Rankings 2025.
Note: Rank corresponds to within economy ranks. The score is calculated as the average of the International Outlook score (encompassing international staff, students, and co-authorship) and the industry score (reflecting industry income and patent citations). The 2025 ranking corresponds to data from the academic year that ended in 2022.

6.2.2 Top Unicorn Companies in Ghana

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	CHIPPER CASH	Financial Services	Accra	2

Source: CBInsights, Tracker – The Complete List of Unicorn Companies: https://www.cbinsights.com/research-unicorn-companies.

7.1.1 Top 15 intangible-asset intensive companies in Ghana

Rank	Firm	Intensity, %
1	SCANCOM PLC	24.26
2	UNILEVER GHANA PLC	65.46
3	DIGICUT ADVERTISING & PRODUCTION LTD	42.62

Source: Brand Finance (https://brandirectory.com/reports/gift-2024).
Note: Brand Finance only provides within economy ranks.

Ghana

GII 2025 rank **101**

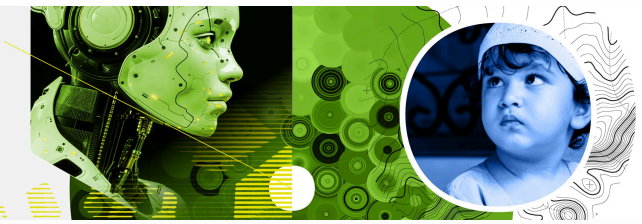
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
93	108	Lower middle	Sub-Saharan Africa	34.4	269.1	7,975.1

	Score / Value	Rank
Institutions	**45.6**	**82**
1.1 Institutional environment	**46.1**	**86**
1.1.1 Operational stability for businesses*	51.3	96
1.1.2 Government effectiveness*	40.8	79
1.2 Regulatory environment	**46.2**	**77**
1.2.1 Regulatory quality*	42.6	85
1.2.2 Rule of law*	49.8	69
1.3 Business environment	**44.7**	**[68]**
1.3.1 Policy stability for doing business†	44.7	73
1.3.2 Entrepreneurship policies and culture†	n/a	n/a
Human capital and research	**19.4**	**108**
2.1 Education	**46.2**	**[84]**
2.1.1 Expenditure on education, % GDP	2.9	115
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a
2.1.3 School life expectancy, years	11.6	101
2.1.4 PISA scales in reading, maths and science	n/a	n/a
2.1.5 Pupil–teacher ratio, secondary	16.1	86
2.2 Tertiary education	**11.9**	**113**
2.2.1 Tertiary enrolment, % gross	22.1	101
2.2.2 Graduates in science and engineering, %	16.6	99
2.2.3 Tertiary inbound mobility, %	0.7	97
2.3 Research and development (R&D)	**0.3**	**115**
2.3.1 Researchers, FTE/mn pop.	87.5	94
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a
2.3.3 Global corporate R&D investors, top 3, mn USD	0	44 ○ ◇
2.3.4 QS university ranking, top 3*	0	80 ○ ◇
Infrastructure	**30.3**	**109**
3.1 Information and communication technologies (ICTs)	**61**	**96**
3.1.1 ICT access*	65.8	102
3.1.2 ICT use*	64.2	98
3.1.3 Government's online service*	52.9	86
3.2 General infrastructure	**8.4**	**135** ◇
3.2.1 Electricity output, GWh/mn pop.	711	108
3.2.2 Logistics performance*	18.2	90
3.2.3 Gross capital formation, % GDP	12.9	131 ○ ◇
3.3 Ecological sustainability	**21.6**	**62**
3.3.1 GDP/unit of energy use	16.8	24 ●
3.3.2 Low-carbon energy use, %	20	64 ●
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.4	91
Market sophistication	**16.9**	**129** ◇
4.1 Credit	**1.1**	**138** ◇
4.1.1 Finance for startups and scaleups†	n/a	n/a
4.1.2 Domestic credit to private sector, % GDP	10	131 ○
4.1.3 Loans from microfinance institutions, % GDP	0.1	56
4.2 Investment	**3.2**	**82**
4.2.1 Market capitalization, % GDP	11.7	72
4.2.2 Venture capital (VC) received, deal count/bn PPP$ GDP	0.1	57 ●
4.2.3 Late-stage VC deal count, % global VC	0.02	57
4.2.4 VC investors, deal count/bn PPP$ GDP	0.05	85
4.2.5 VC investor co-participation/bn PPP$ GDP	0.02	95
4.3 Trade, diversification and market scale	**46.5**	**115**
4.3.1 Applied tariff rate, weighted avg., %	7.7	117
4.3.2 Domestic industry diversification	n/a	n/a
4.3.3 Domestic market scale, bn PPP$	269.1	68

	Score / Value	Rank
Business sophistication	**25.6**	**91**
5.1 Knowledge workers	**32**	**[89]**
5.1.1 Knowledge-intensive employment, %	8.8	105
5.1.2 Females employed w/advanced degrees, %	3.3	99
5.1.3 Youth demographic dividend, %	54.7	26 ●
5.1.4 GERD performed by business, % GDP	n/a	n/a
5.1.5 GERD financed by business, %	n/a	n/a
5.2 Innovation linkages	**24.3**	**71**
5.2.1 Public research–industry co-publications, %	1.8	53 ●
5.2.2 University–industry R&D collaboration†	33.6	74
5.2.3 University industry & international engagement, top 5*	22	67
5.2.4 State of cluster development†	48.2	63
5.2.5 Patent families/bn PPP$ GDP	0	100 ○ ◇
5.3 Knowledge absorption	**20.5**	**105**
5.3.1 Intellectual property payments, % total trade	1	39 ●
5.3.2 High-tech imports, % total trade	4.1	125
5.3.3 ICT services imports, % total trade	0.6	113
5.3.4 FDI net inflows, % GDP	2.3	78
5.3.5 Research talent, % in businesses	n/a	n/a
Knowledge and technology outputs	**16.3**	**86**
6.1 Knowledge creation	**6.2**	**105**
6.1.1 Patents by origin/bn PPP$ GDP	0.03	127 ○
6.1.2 PCT patents by inventor origin/bn PPP$ GDP	0.003	104
6.1.3 Utility models by origin/bn PPP$ GDP	0.01	71
6.1.4 Scientific and technical articles/bn PPP$ GDP	9.9	70
6.1.5 Citable documents H-index	9.9	79
6.2 Knowledge impact	**34**	**43**
6.2.1 Labor productivity growth, %	1.4	49 ●
6.2.2 Unicorn valuation, % GDP	2.6	16 ●
6.2.3 Software spending, % GDP	0.02	132 ○ ◇
6.2.4 High-tech manufacturing	n/a	n/a
6.3 Knowledge diffusion	**8.8**	**115**
6.3.1 Intellectual property receipts, % total trade	0.07	73
6.3.2 Production and export complexity	33	101
6.3.3 High-tech exports, % total trade	0.1	125
6.3.4 ICT services exports, % total trade	0.7	98
6.3.5 ISO 9001 quality/bn PPP$ GDP	0.8	116
Creative outputs	**15.9**	**91**
7.1 Intangible assets	**9.2**	**106**
7.1.1 Intangible asset intensity, top 15, %	-52.8	78 ○ ◇
7.1.2 Trademarks by origin/bn PPP$ GDP	3	131 ○ ◇
7.1.3 Global brand value, top 5,000, % GDP	n/a	n/a
7.1.4 Industrial designs by origin/bn PPP$ GDP	1.3	49 ●
7.2 Creative goods and services	**30.6**	**[30]**
7.2.1 Cultural and creative services exports, % total trade	2.8	9 ●
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	0.05	113
7.3 Online creativity	**14.5**	**118**
7.3.1 Top-level domains (TLDs)/th pop. 15–69	0.3	122
7.3.2 GitHub commits/mn pop. 15–69	2.8	100
7.3.3 Mobile app creation/bn PPP$ GDP	40.4	119 ○

NOTES: ● indicates a strength ○ a weakness ◆ an income group strength ◇ an income group weakness * an index † a survey question ◔ that the economy's data is outdated. Square brackets [ ] indicate the the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level, n/a represents missing values, a dash - indicates an indicator which is not relevant to this economy and thus not considered for DMC thresholds.

Global Innovation Index 2025



Data Availability

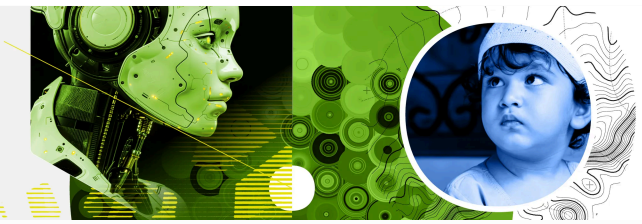
The following tables list indicators that are either missing or outdated for Ghana.

Ghana has missing data for thirteen indicators and outdated data for eight indicators.

Missing data for Ghana

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture†	n/a	2024	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2021	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2022	OECD, PISA
2.3.2	Gross expenditure on R&D, % GDP	n/a	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
4.1.1	Finance for startups and scaleups†	n/a	2024	Global Entrepreneurship Monitor
4.3.2	Domestic industry diversification	n/a	2022	United Nations Industrial Development Organization (UNIDO)
5.1.4	GERD performed by business, % GDP	n/a	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	GERD financed by business, %	n/a	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	n/a	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.2.4	High-tech manufacturing	n/a	2022	United Nations Industrial Development Organization (UNIDO)
7.1.3	Global brand value, top 5,000, % GDP	n/a	2025	Brand Finance; International Monetary Fund
7.2.2	National feature films/mn pop. 15–69	n/a	2023	OMDIA; United Nations, World Population Prospects
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2024	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

Global Innovation Index 2025



Outdated data for Ghana

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2022	2023	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2022	2023	UNESCO Institute for Statistics
2.1.5	Pupil–teacher ratio, secondary	2021	2023	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2015	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.1	Knowledge-intensive employment, %	2022	2024	International Labour Organization
5.1.2	Females employed w/advanced degrees, %	2022	2024	International Labour Organization
6.1.3	Utility models by origin/bn PPP$ GDP	2018	2023	World Intellectual Property Organization; International Monetary Fund
7.1.1	Intangible asset intensity, top 15, %	2022	2024	Brand Finance

Global Innovation Index 2025

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 140 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.