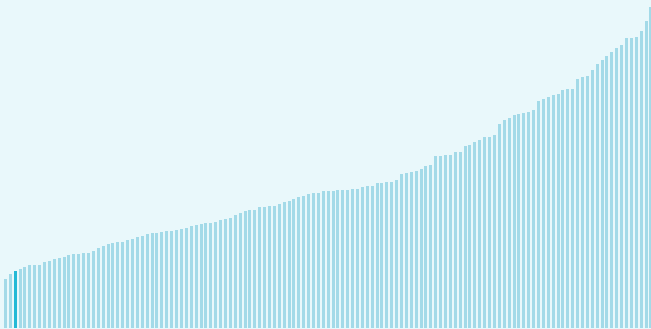




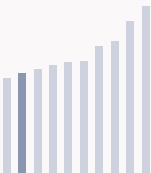
Mali ranking in the Global Innovation Index 2024

Mali ranks **131st** among the 133 economies featured in the GII 2024.

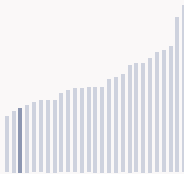
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



Mali ranks **9th** among the 10 low-income group economies.



Mali ranks **25th** among the 27 economies in Sub-Saharan Africa.



> Mali GII Ranking (2020-2024)

The table shows the rankings of Mali 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 Mali in the GII 2024 is between ranks 125 and 133.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	123rd	126th	116th
2021	124th	126th	114th
2022	126th	128th	121st
2023	129th	129th	126th
2024	131st	126th	132nd

Mali performs worse in innovation outputs than innovation inputs in 2024.

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

Mali ranks **132nd** in innovation outputs. This position is lower than last year.

Mali has no clusters in the top 100 S&T clusters of the Global Innovation Index.

Global Innovation Index 2024



> Global Innovation Tracker

The Global Innovation Tracker 2024 shows what is the current state of innovation in Mali, how rapidly is technology being embraced and what are the resulting societal impacts.



For Mali, 5 indicators have improved in the short-term and 3 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -8.6% 2022 - 2023	▲ 5.9% 2019 - 2021	0% 2022 - 2023	▼ -91.1% 2022 - 2023	n/a
▲ 5.6% 2013 - 2023	▼ -7.2% 2010 - 2021	n/a	n/a	n/a

Technology adoption

Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
▲ 3.3% 2021 - 2022	▲ 19.3% 2021 - 2022	n/a	n/a	n/a
▲ 4% 2012 - 2022	▲ 40.6% 2012 - 2022		n/a	n/a
15.9 per 100 inhabitants in 2022	0.8 per 100 inhabitants in 2022	n/a		n/a

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 0.7% 2022 - 2023	▲ 0.8% 2021 - 2022	▲ 1.7°C 2023
▲ 1.6% 2013 - 2023	▲ 0.4% 2012 - 2022	n/a
7,687 USD in 2023	59.4 years in 2022	

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 country from 1951–1980. Figures are rounded.



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, Mali's performance is below expectations for its level of development.

> Innovation overperformers relative to their economic development





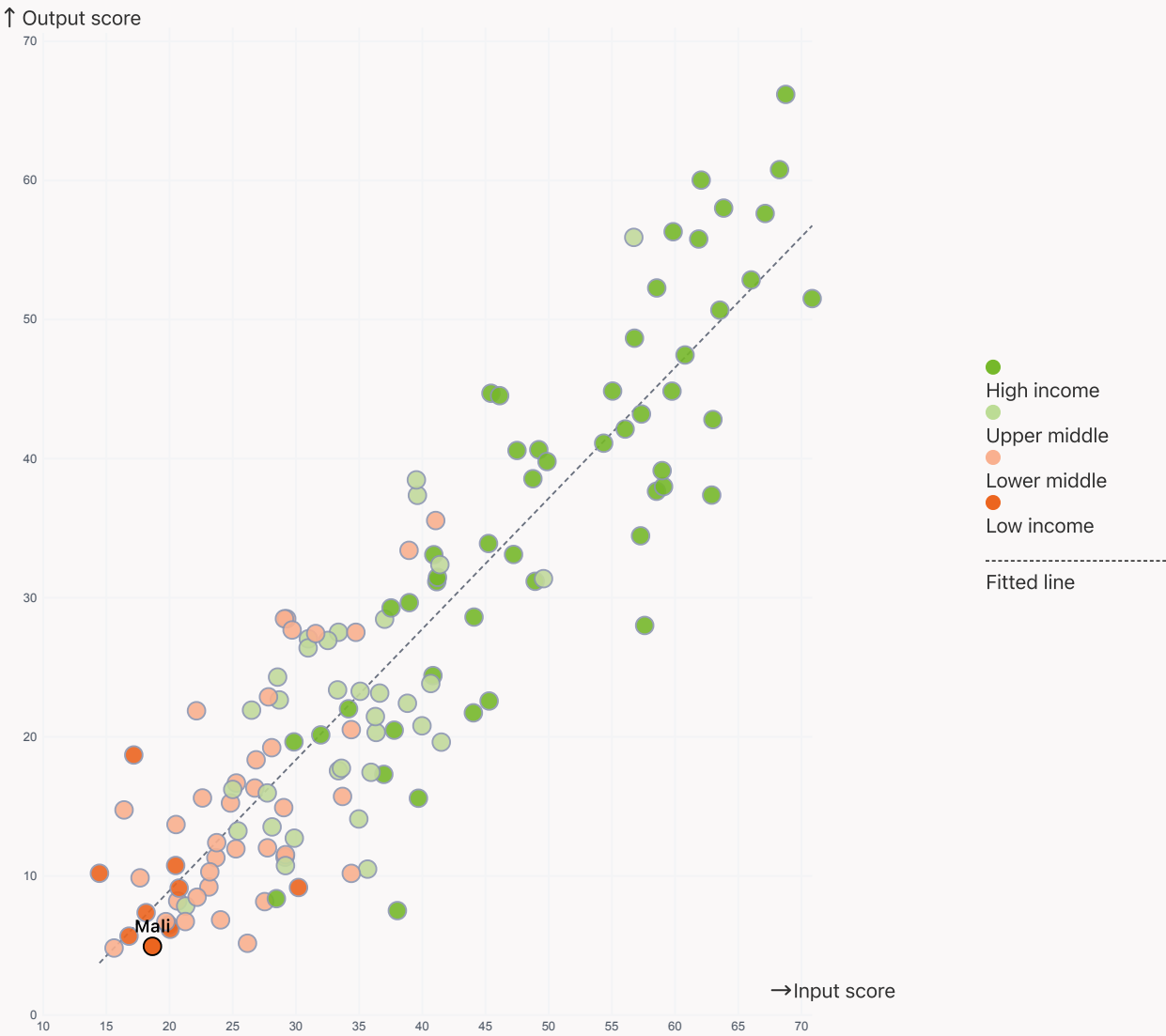
Effectively translating innovation investments into innovation outputs

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.



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

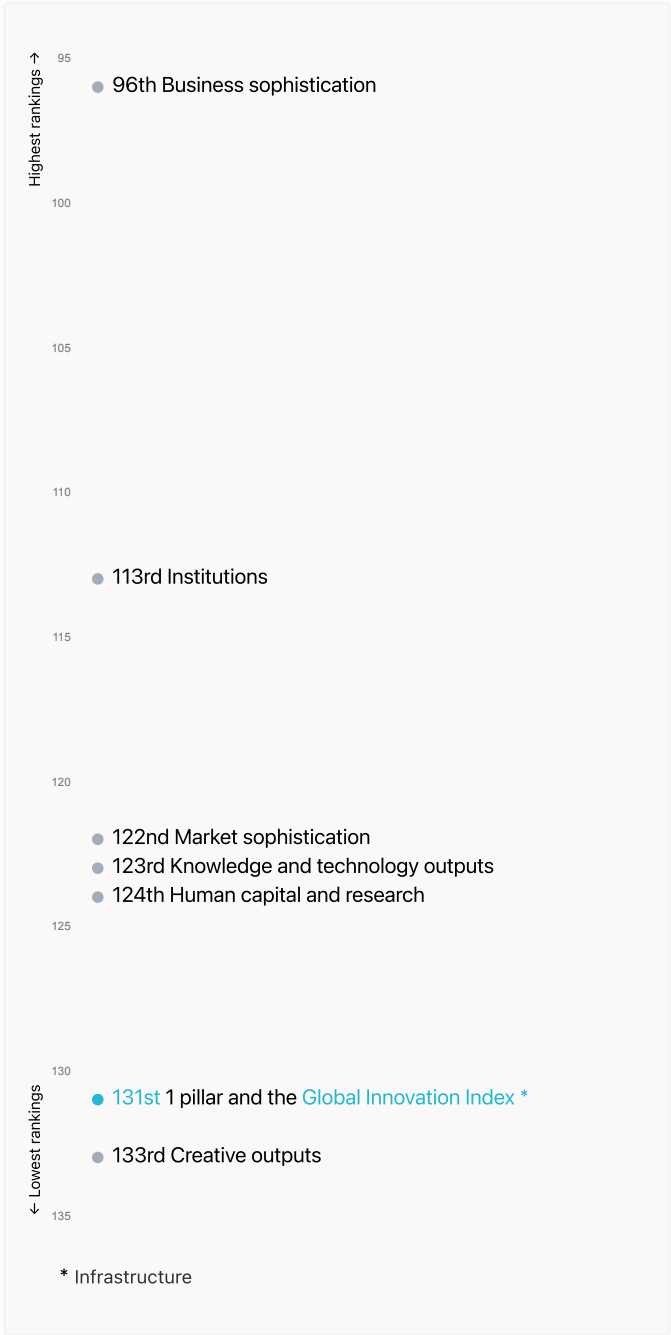
> Relationship between innovation inputs and outputs





Overview of Mali's rankings in the seven areas of the GII in 2024

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



Highest rankings



Mali ranks highest in Business sophistication (96th), Institutions (113rd), Market sophistication (122nd) and Knowledge and technology outputs (123rd).

Lowest rankings



Mali ranks lowest in Creative outputs (133rd), Infrastructure, GII Index (131st) and Human capital and research (124th).

The full WIPO Intellectual Property Statistics profile for Mali can be found on [this link](#).



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

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



Low-Income economies

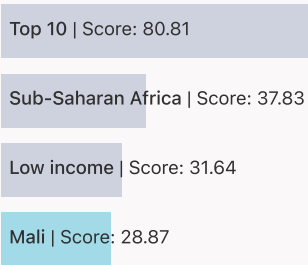
Mali performs above the low-income group average in Business sophistication.



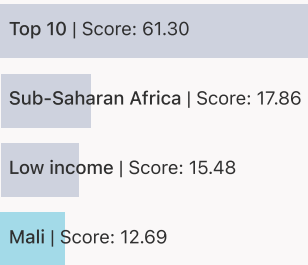
Sub-Saharan Africa

Mali performs above the regional average in Business sophistication.

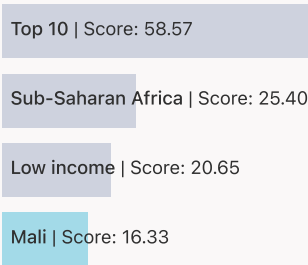
Institutions



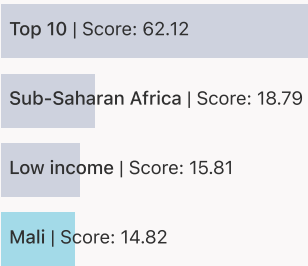
Human capital and research



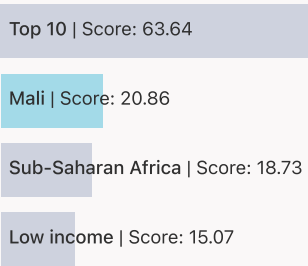
Infrastructure



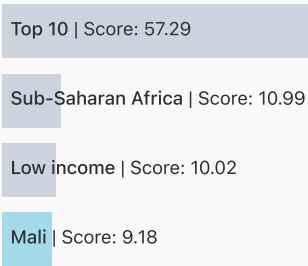
Market sophistication



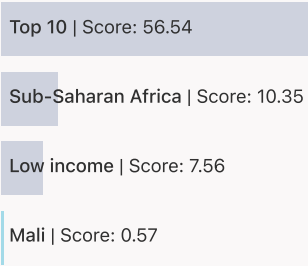
Business sophistication



Knowledge and technology outputs



Creative outputs





Innovation strengths and weaknesses in Mali

The table below gives an overview of the indicator strengths and weaknesses of Mali in the GII 2024.



Mali’s main innovation strengths are **Government funding/pupil, secondary, % GDP/cap** (rank 15), **Loans from microfinance institutions, % GDP** (rank 23) and **ICT services imports, % total trade** (rank 40).

Strengths

Rank	Code	Indicator name
15	2.1.2	Government funding/pupil, secondary, % GDP/cap
23	4.1.3	Loans from microfinance institutions, % GDP
40	5.3.3	ICT services imports, % total trade
41	5.3.5	Research talent, % in businesses
53	6.3.4	ICT services exports, % total trade
62	5.3.4	FDI net inflows, % GDP
62	1.3.1	Policy stability for doing business [†]
69	5.2.3	State of cluster development [†]
71	2.1.1	Expenditure on education, % GDP
71	3.3.2	Low-carbon energy use, %

Weaknesses

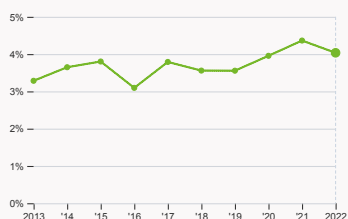
Rank	Code	Indicator name
127	2.2.1	Tertiary enrolment, % gross
125	3.1.2	ICT use*
121	5.3.1	Intellectual property payments, % total trade
112	2.1.3	School life expectancy, years
99	6.1.2	PCT patents by origin/bn PPP\$ GDP
75	7.1.3	Global brand value, top 5,000, % GDP
75	2.3.4	QS university ranking, top 3*
74	6.1.3	Utility models by origin/bn PPP\$ GDP
49	6.2.2	Unicorn valuation, % GDP
41	2.3.3	Global corporate R&D investors, top 3, mn USD



Mali's innovation system

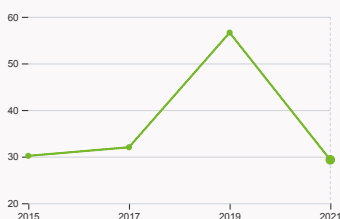
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Mali



2.1.1 Expenditure on education

was equal to 4.04 % GDP in 2022, down by 0.33 percentage points from the year prior – and equivalent to an indicator rank of 71.



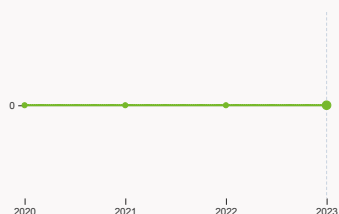
2.3.1 Researchers

was equal to 29.32 FTE per million population in 2021, down by 48.22% from the year prior – and equivalent to an indicator rank of 103.



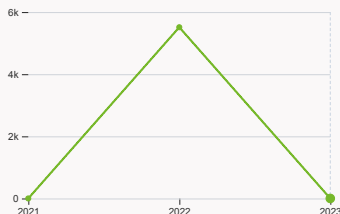
2.3.2 Gross expenditure on R&D

was equal to 0.17 % GDP in 2021, up by 0.02 percentage points from the year prior – and equivalent to an indicator rank of 90.



2.3.4 QS university ranking

was equal to an average score of 0 for the top three universities in 2023 with no change from the year prior – and equivalent to an indicator rank of 75.



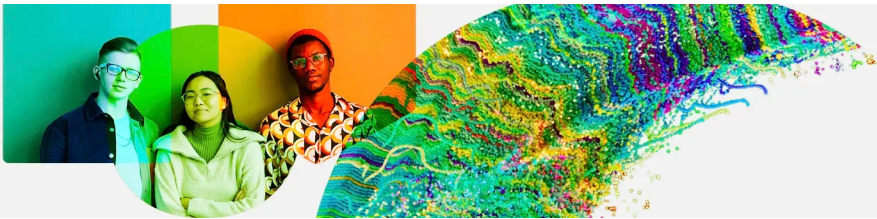
4.2.4 VC received, value

was equal to 0 USD in 2023, down by 100% from the year prior – and equivalent to an indicator rank of 84.

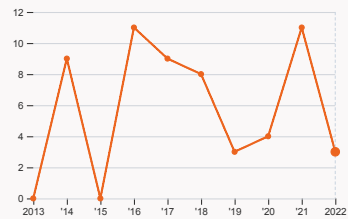


5.1.1 Knowledge-intensive employment

was equal to 3.56 % in 2020, down by 0.75 percentage points from the year prior – and equivalent to an indicator rank of 125.

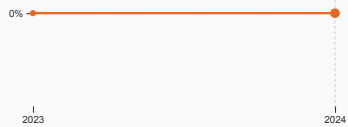


> Innovation outputs in Mali



6.1.1 Patents by origin

was equal to 3 patents in 2022, down by 72.73% from the year prior – and equivalent to an indicator rank of 118.



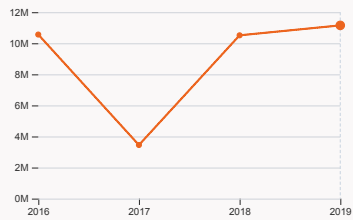
6.2.2 Unicorn valuation

was equal to 0 % GDP in 2024 with no change from the year prior – and equivalent to an indicator rank of 49.



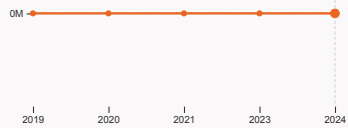
6.3.2 Production and export complexity

was equal to a score of -0.73 in 2021, up by 34.23% from the year prior – and equivalent to an indicator rank of 97.



6.3.3 High-tech exports

was equal to 11.15 million USD in 2019, up by 6.09% from the year prior – and equivalent to an indicator rank of 108.



7.1.3 Global brand value

was equal to 0 million USD for the brands in the top 5,000 in 2024 with no change from the year prior – and equivalent to an indicator rank of 75.

Global Innovation Index 2024

Mali

GII 2024 rank

131

Output rank
132

Input rank
126

Income
Low

Region
SSA




Population (mn)
23.8

GDP, PPP\$ (bn)
61.6

GDP per capita, PPP\$
2,639.4

Score / Value Rank

Score / Value Rank

 Institutions	28.9	113	
1.1 Institutional environment	16.4	130	◇
1.1.1 Operational stability for businesses*	20	129	◇
1.1.2 Government effectiveness*	12.7	129	◇
1.2 Regulatory environment	20.2	115	
1.2.1 Regulatory quality*	25.2	107	
1.2.2 Rule of law*	15.2	117	
1.3 Business environment	50.1	[58]	
1.3.1 Policy stability for doing business†	50.1	62	◆◆
1.3.2 Entrepreneurship policies and culture†	n/a	n/a	
 Human capital and research	12.7	124	
2.1 Education	36.2	112	
2.1.1 Expenditure on education, % GDP	4	71	◆◆
2.1.2 Government funding/pupil, secondary, % GDP/cap	26.5	15	◆◆
2.1.3 School life expectancy, years	7.1	112	○◇
2.1.4 PISA scales in reading, maths and science	n/a	n/a	
2.1.5 Pupil–teacher ratio, secondary	21.2	104	
2.2 Tertiary education	1.2	128	○◇
2.2.1 Tertiary enrolment, % gross	4.7	127	○
2.2.2 Graduates in science and engineering, %	n/a	n/a	
2.2.3 Tertiary inbound mobility, %	0.9	90	
2.3 Research and development (R&D)	0.7	104	
2.3.1 Researchers, FTE/mn pop.	29.3	103	
2.3.2 Gross expenditure on R&D, % GDP	0.2	90	
2.3.3 Global corporate R&D investors, top 3, mn USD	0	41	○◇
2.3.4 QS university ranking, top 3*	0	75	○◇
 Infrastructure	16.3	131	
3.1 Information and communication technologies (ICTs)	21.6	128	
3.1.1 ICT access*	31.1	124	
3.1.2 ICT use*	0	125	○◇
3.1.3 Government's online service*	29.8	124	
3.1.4 E-participation*	25.6	112	
3.2 General infrastructure	17.2	105	
3.2.1 Electricity output, GWh/mn pop.	n/a	n/a	
3.2.2 Logistics performance*	22.7	82	
3.2.3 Gross capital formation, % GDP	17.7	114	◇
3.3 Ecological sustainability	10.2	108	
3.3.1 GDP/unit of energy use	n/a	n/a	
3.3.2 Low-carbon energy use, %	15.6	71	◆◆
3.3.3 ISO 14001 environment/bn PPP\$ GDP	0.3	112	
 Market sophistication	14.8	122	
4.1 Credit	12.9	103	
4.1.1 Finance for startups and scaleups†	n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP	29.6	97	
4.1.3 Loans from microfinance institutions, % GDP	1.6	23	◆◆
4.2 Investment	4.4	[87]	
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	0.03	74	
4.2.4 VC received, value, % GDP	0.0001	84	
4.3 Trade, diversification and market scale	27.1	117	
4.3.1 Applied tariff rate, weighted avg., %	6	105	
4.3.2 Domestic industry diversification	n/a	n/a	
4.3.3 Domestic market scale, bn PPP\$	61.6	103	

 Business sophistication	20.9	96	◆
5.1 Knowledge workers	5.8	129	
5.1.1 Knowledge-intensive employment, %	3.6	125	
5.1.2 Firms offering formal training, %	17.7	84	
5.1.3 GERD performed by business, % GDP	n/a	n/a	
5.1.4 GERD financed by business, %	0.8	93	
5.1.5 Females employed w/advanced degrees, %	0.5	125	
5.2 Innovation linkages	30.5	[43]	
5.2.1 Public Research–Industry co-publications, %	1	87	
5.2.2 University–industry R&D collaboration†	36.3	88	
5.2.3 State of cluster development†	45.4	69	◆◆
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	n/a	n/a	
5.2.5 Patent families/bn PPP\$ GDP	n/a	n/a	
5.3 Knowledge absorption	26.3	66	◆◆
5.3.1 Intellectual property payments, % total trade	0	121	○◇
5.3.2 High-tech imports, % total trade	7.5	78	
5.3.3 ICT services imports, % total trade	1.7	40	◆◆
5.3.4 FDI net inflows, % GDP	2.6	62	◆◆
5.3.5 Research talent, % in businesses	31.4	41	◆◆
 Knowledge and technology outputs	9.2	123	
6.1 Knowledge creation	2.6	121	◇
6.1.1 Patents by origin/bn PPP\$ GDP	0.05	118	
6.1.2 PCT patents by origin/bn PPP\$ GDP	0	99	○◇
6.1.3 Utility models by origin/bn PPP\$ GDP	0	74	○◇
6.1.4 Scientific and technical articles/bn PPP\$ GDP	4	111	◇
6.1.5 Citable documents H-index	4.8	103	
6.2 Knowledge impact	15.6	122	
6.2.1 Labor productivity growth, %	0.1	91	
6.2.2 Unicorn valuation, % GDP	0	49	○◇
6.2.3 Software spending, % GDP	0.02	124	
6.2.4 High-tech manufacturing, %	n/a	n/a	
6.3 Knowledge diffusion	9.3	95	
6.3.1 Intellectual property receipts, % total trade	0.0006	110	
6.3.2 Production and export complexity	24.7	97	
6.3.3 High-tech exports, % total trade	0.2	108	
6.3.4 ICT services exports, % total trade	2.4	53	◆◆
6.3.5 ISO 9001 quality/bn PPP\$ GDP	0.5	125	
 Creative outputs	0.6	133	○
7.1 Intangible assets	1	126	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP\$ GDP	3.6	123	
7.1.3 Global brand value, top 5,000, % GDP	0	75	○◇
7.1.4 Industrial designs by origin/bn PPP\$ GDP	0.1	108	
7.2 Creative goods and services	0.2	[131]	
7.2.1 Cultural and creative services exports, % total trade	0.005	109	
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	0.02	120	
7.3 Online creativity	0.1	133	○◇
7.3.1 Top-level domains (TLDs)/th pop. 15–69	0.1	123	
7.3.2 GitHub commits/mn pop. 15–69	0.1	129	
7.3.3 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, ⌚ that the economy's data is outdated. Square brackets [] indicate 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.



Data availability

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



Mali has missing data for seventeen indicators and outdated data for seventeen indicators.

Missing data for Mali

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture ⁺	n/a	2023	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2022	OECD, PISA
2.2.2	Graduates in science and engineering, %	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD
3.2.1	Electricity output, GWh/mn pop.	n/a	2022	International Energy Agency
3.3.1	GDP/unit of energy use	n/a	2021	International Energy Agency
4.1.1	Finance for startups and scaleups ⁺	n/a	2023	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
4.2.2	Venture capital (VC) investors, deals/bn PPP\$ GDP	n/a	2023	LSEG Data & Analytics; International Monetary Fund
4.3.2	Domestic industry diversification	n/a	2021	United Nations Industrial Development Organization (UNIDO), Industrial Statistics Database (INDSTAT) Rev.3 and 4
5.1.3	GERD performed by business, % GDP	n/a	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	n/a	2023	LSEG Data & Analytics; International Monetary Fund
5.2.5	Patent families/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization; International Monetary Fund
6.2.4	High-tech manufacturing, %	n/a	2021	United Nations Industrial Development Organization
7.1.1	Intangible asset intensity, top 15, %	n/a	2023	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2022	OMDIA; United Nations, World Population Prospects
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2023	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund
7.3.3	Mobile app creation/bn PPP\$ GDP	n/a	2023	data.ia (a Sensor Tower Company); International Monetary Fund



Outdated data for Mali

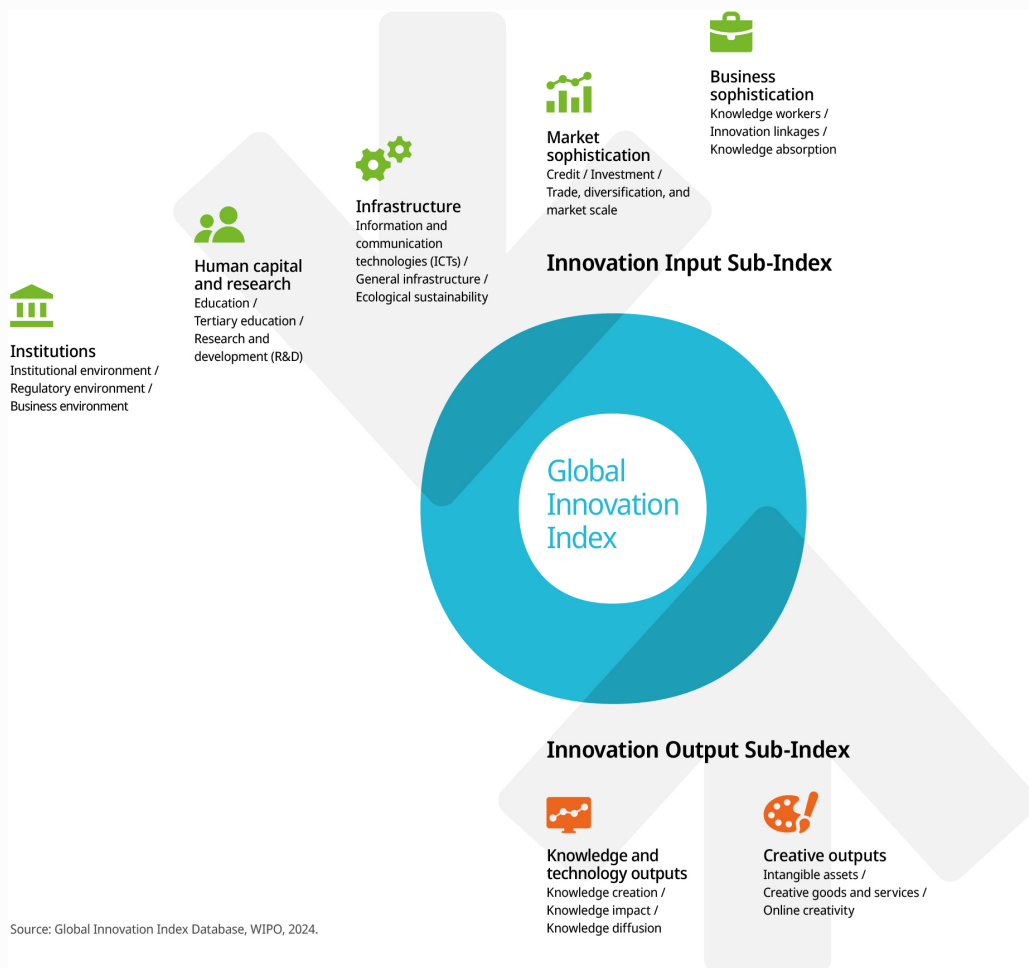
Code	Indicator name	Economy Year	Model Year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2017	2020	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2017	2022	UNESCO Institute for Statistics
2.1.5	Pupil–teacher ratio, secondary	2021	2022	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2019	2022	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2015	2022	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2021	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2021	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
4.3.1	Applied tariff rate, weighted avg., %	2019	2022	World Trade Organization
5.1.1	Knowledge-intensive employment, %	2020	2022	International Labour Organization
5.1.2	Firms offering formal training, %	2016	2023	World Bank Enterprise Surveys
5.1.4	GERD financed by business, %	2017	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2020	2023	International Labour Organization
5.3.2	High-tech imports, % total trade	2019	2022	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2017	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.3	Utility models by origin/bn PPP\$ GDP	2021	2022	World Intellectual Property Organization; International Monetary Fund
6.3.3	High-tech exports, % total trade	2019	2022	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development; Trade Data Monitor.
7.2.4	Creative goods exports, % total trade	2019	2022	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development

Global Innovation Index 2024



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.