Global Innovation Index 2025

Madagascar ranking in the Global Innovation Index 2025

Madagascar ranks 120th 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.

Madagascar ranks 3rd among the 11 Low-income group economies.

Madagascar ranks 17th among the 32 economies in Sub-Saharan Africa.

Madagascar GII Ranking (2020-2025)

The table shows the rankings of Madagascar 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 Madagascar in the GII 2025 is between ranks 108 and 134.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	115th	125th	100th
2021	110th	127th	78th
2022	106th	125th	85th
2023	107th	125th	82nd
2024	110th	129th	81st
2025	120th	135th	96th

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

This year Madagascar ranks 135th in innovation inputs. This position is lower than last year.

Madagascar ranks 96th in innovation outputs. This position is lower than last year.

Madagascar 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 Madagascar, how rapidly is technology being embraced and what are the resulting societal impacts.

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

Science and innovation investment

	Scientific publications	R&D investments	Venture capital deal numbers	International patent filings
Short term	▼ -10.6 % 2023 - 2024	n/a	▼ -50 % 2022 - 2023	0 % 2023 - 2024
Long term (annual growth)	▲ 5.3 % 2014 - 2024	n/a	n/a	▼ -6.7 % 2014 - 2024

Technology adoption

	Safe sanitation	Connectivity		Robots	Electric vehicles
		Fixed broadband	5G		
Short term	▲ 0.4% 2023 - 2024	▲ 18.7% 2022 - 2023	▲ 2% 2022 - 2023	n/a	n/a
Long term (annual growth)	▲ 3.7% 2014 - 2024	▲ 0.2% 2013 - 2023	n/a	n/a	n/a
Penetration	12.8 per 100 inhabitants in 2024	0.1 per 100 inhabitants in 2023	6.1 per 100 inhabitants in 2023	n/a	n/a

Socioeconomic impact

	Labor productivity	Life expectancy	Temperature change
Short term	▲ 1.4 % 2023 - 2024	▲ 0.9 % 2022 - 2023	+ 1.2 °C 2024
Long term (annual growth)	▼ -0.4 % 2014 - 2024	▲ 0.1 % 2013 - 2023	+ 0.6 °C 2014
Level	3,864.5 USD in 2024	63.6 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.

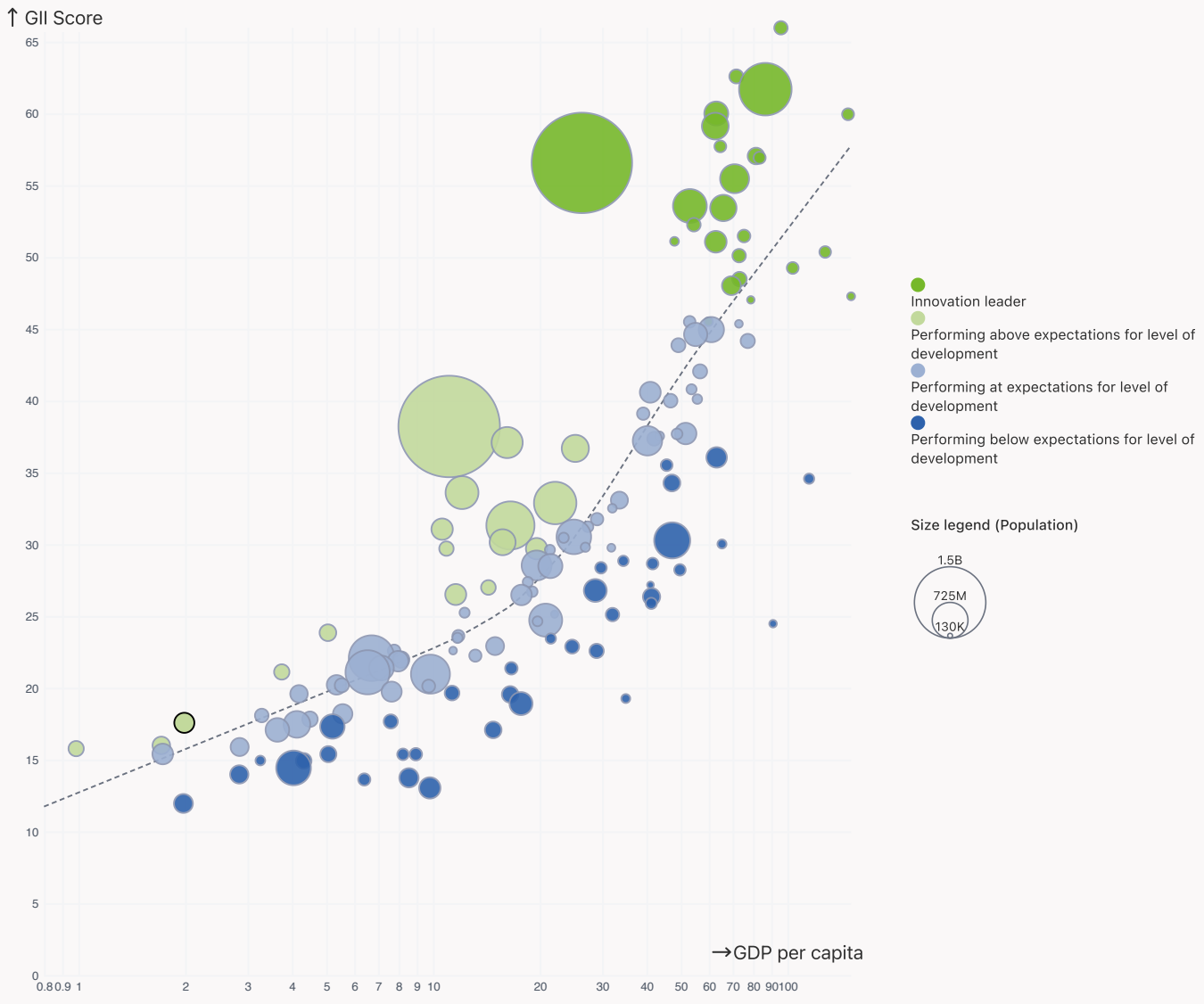
Global Innovation Index 2025

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 Madagascar performs above 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.

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

> Relationship between innovation inputs and outputs

Global Innovation Index 2025

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

Highest Rankings

Madagascar ranks highest in Creative outputs (74th), Human capital and research, Business sophistication (116th) and Market sophistication (117th).

Lowest Rankings

Madagascar ranks lowest in Infrastructure (137th), Institutions (128th) and Knowledge and technology outputs (124th).

* Human capital and research, Business sophistication

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

Global Innovation Index 2025

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

Low-income economies

Madagascar performs above the Low-income group average in Human capital and research, Market sophistication, Creative outputs.

Sub-Saharan Africa

Madagascar performs above the regional average in Human capital and research, Creative outputs.

Institutions

- Top 10 | Score: 78.63
- Sub-Saharan Africa | Score: 40.29
- Low-income | Score: 34.81
- Madagascar | Score: 25.58

Human capital and research

- Top 10 | Score: 59.30
- Madagascar | Score: 18.27
- Sub-Saharan Africa | Score: 18.06
- Low-income | Score: 15.10

Infrastructure

- Top 10 | Score: 61.36
- Sub-Saharan Africa | Score: 27.58
- Low-income | Score: 21.77
- Madagascar | Score: 13.91

Market sophistication

- Top 10 | Score: 61.82
- Sub-Saharan Africa | Score: 22.67
- Madagascar | Score: 21.15
- Low-income | Score: 20.14

Business sophistication

- Top 10 | Score: 59.10
- Sub-Saharan Africa | Score: 25.36
- Low-income | Score: 23.04
- Madagascar | Score: 22.03

Knowledge and technology outputs

- Top 10 | Score: 54.93
- Sub-Saharan Africa | Score: 11.53
- Low-income | Score: 10.90
- Madagascar | Score: 8.99

Creative outputs

- Top 10 | Score: 55.98
- Madagascar | Score: 20.88
- Sub-Saharan Africa | Score: 10.61
- Low-income | Score: 7.58

Global Innovation Index 2025

Innovation strengths and weaknesses in Madagascar

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

Madagascar's best-ranked innovation strengths are **Industrial designs by origin/bn PPP$ GDP** (rank 17), **Youth demographic dividend, %** (rank 20) and **Trademarks by origin/bn PPP$ GDP** (rank 25).

Strengths

Rank	Code	Indicator name
17	7.1.4	Industrial designs by origin/bn PPP$ GDP
20	5.1.3	Youth demographic dividend, %
25	7.1.2	Trademarks by origin/bn PPP$ GDP
29	6.3.4	ICT services exports, % total trade
31	4.1.3	Loans from microfinance institutions, % GDP
47	2.2.2	Graduates in science and engineering, %
55	5.3.3	ICT services imports, % total trade
62	4.2.5	VC investor co-participation/bn PPP$ GDP
64	5.3.4	FDI net inflows, % GDP
80	3.3.2	Low-carbon energy use, %

Weaknesses

Rank	Code	Indicator name
137	3.1.1	ICT access*
131	7.3.3	Mobile app creation/bn PPP$ GDP
112	6.2.4	High-tech manufacturing, %
109	6.1.2	PCT patents by inventor origin/bn PPP$ GDP
107	3.2.2	Logistics performance*
100	5.2.5	Patent families/bn PPP$ GDP
80	2.3.4	QS university ranking, top 3*
53	6.2.2	Unicorn valuation, % GDP
44	2.3.3	Global corporate R&D investors, top 3, mn USD

Global Innovation Index 2025

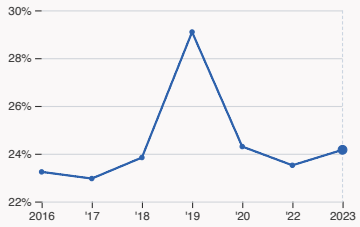
Madagascar's innovation system

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

Innovation inputs in Madagascar

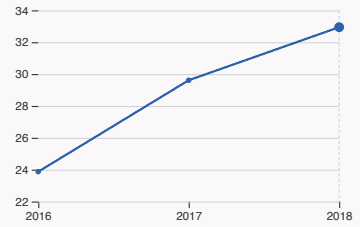
2.1.1 Expenditure on education

was equal to 3.05 % GDP in 2023, down by 0.02 percentage points from the year prior – and equivalent to an indicator rank of 109.



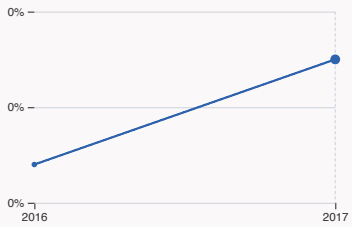
2.2.2 Graduates in science and engineering

was equal to 24.16 % of total graduates in 2023, up by 0.65 percentage points from the year prior – and equivalent to an indicator rank of 47.



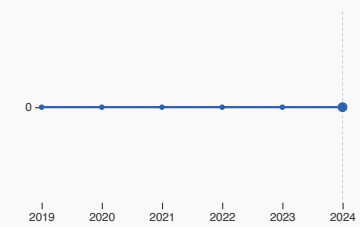
2.3.1 Researchers

was equal to 32.94 FTE per million population in 2018, up by 11.24% from the year prior – and equivalent to an indicator rank of 99.



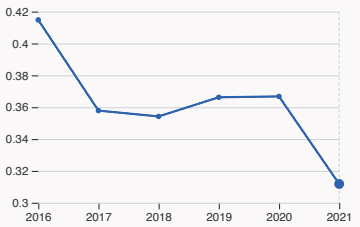
2.3.2 Gross expenditure on R&D

was equal to 0.01 % GDP in 2017, up by – and equivalent to an indicator rank of 113.



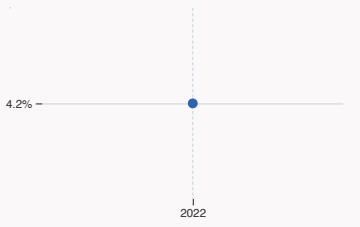
2.3.4 QS university ranking

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



4.3.2 Domestic industry diversification

was equal to an index score of 0.312 in 2021, down by 14.98% from the year prior – and equivalent to an indicator rank of 105.



5.1.1 Knowledge-intensive employment

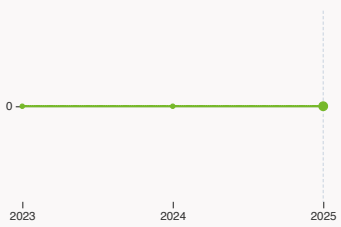
was equal to 4.19 % of total workforce in 2022 – and equivalent to an indicator rank of 118.

Global Innovation Index 2025

Innovation outputs in Madagascar

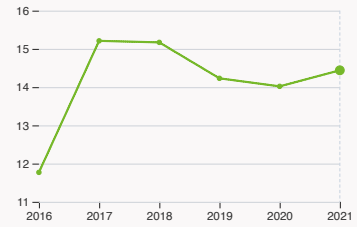
6.1.1 Patents by origin

was equal to 2 patents in 2023, down by 75% from the year prior – and equivalent to an indicator rank of 126.



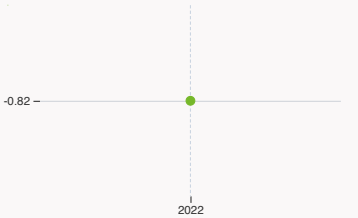
6.2.2 Unicorn valuation

The country does not have unicorns in 2025.



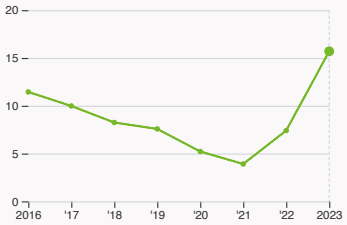
6.2.4 High-tech manufacturing

was equal to 14.44 high-tech manufacturing output in million USD in 2021, up by 3% from the year prior – and equivalent to an indicator rank of 112.



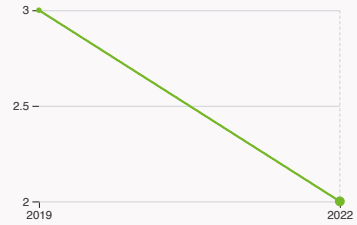
6.3.2 Production and export complexity

was equal to a score of -0.82 in 2022 – and equivalent to an indicator rank of 109.



6.3.3 High-tech exports

was equal to 15.7 million USD in 2023, up by 111.88% from the year prior – and equivalent to an indicator rank of 104.



7.3.3 Mobile app creation

was equal to 2 global downloads of mobile apps in 2022, down by 33.33% from the year prior – and equivalent to an indicator rank of 131.

Madagascar

GII 2025 rank **120**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
96	135	Low	Sub-Saharan Africa	32.0	60.9	1,989.8

	Score / Value	Rank	
Institutions	**25.6**	**128**	
1.1 Institutional environment	**29.3**	**121**	
1.1.1 Operational stability for businesses*	40.7	113	
1.1.2 Government effectiveness*	17.9	131	
1.2 Regulatory environment	**28.4**	**122**	
1.2.1 Regulatory quality*	28.3	117	
1.2.2 Rule of law*	28.6	119	
1.3 Business environment	**19**	**127**	◇
1.3.1 Policy stability for doing business†	20	124	◇
1.3.2 Entrepreneurship policies and culture†	18	81	
Human capital and research	**18.3**	**116**	
2.1 Education	**38.3**	**[112]**	
2.1.1 Expenditure on education, % GDP	3	109	
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3 School life expectancy, years	9.1	118	
2.1.4 PISA scales in reading, maths and science	n/a	n/a	
2.1.5 Pupil–teacher ratio, secondary	19.1	100	
2.2 Tertiary education	**16.4**	**106**	
2.2.1 Tertiary enrolment, % gross	6.1	126	
2.2.2 Graduates in science and engineering, %	24.2	47	●
2.2.3 Tertiary inbound mobility, %	0.3	106	
2.3 Research and development (R&D)	**0.1**	**121**	
2.3.1 Researchers, FTE/mn pop.	32.9	99	
2.3.2 Gross expenditure on R&D, % GDP	0.01	113	
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	**13.9**	**137**	◇
3.1 Information and communication technologies (ICTs)	**19.8**	**136**	
3.1.1 ICT access*	15.8	137	○
3.1.2 ICT use*	15.3	124	
3.1.3 Government's online service*	28.4	121	
3.2 General infrastructure	**13.2**	**128**	
3.2.1 Electricity output, GWh/mn pop.	88.1	126	
3.2.2 Logistics performance*	9.1	107	○ ◇
3.2.3 Gross capital formation, % GDP	21.6	92	
3.3 Ecological sustainability	**8.7**	**115**	
3.3.1 GDP/unit of energy use	4.7	121	
3.3.2 Low-carbon energy use, %	15.6	80	●
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.1	129	
Market sophistication	**21.2**	**117**	
4.1 Credit	**14.2**	**106**	
4.1.1 Finance for startups and scaleups†	27.3	80	
4.1.2 Domestic credit to private sector, % GDP	17.2	120	
4.1.3 Loans from microfinance institutions, % GDP	1.1	31	●
4.2 Investment	**3.1**	**[84]**	
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) received, deal count/bn PPP$ GDP	0.03	100	
4.2.3 Late-stage VC deal count, % global VC	n/a	n/a	
4.2.4 VC investors, deal count/bn PPP$ GDP	0.1	67	
4.2.5 VC investor co-participation/bn PPP$ GDP	0.05	62	●
4.3 Trade, diversification and market scale	**46.2**	**116**	
4.3.1 Applied tariff rate, weighted avg., %	6.3	107	
4.3.2 Domestic industry diversification	49.3	105	
4.3.3 Domestic market scale, bn PPP$	60.9	111	

	Score / Value	Rank	
Business sophistication	**22**	**116**	
5.1 Knowledge workers	**31.1**	**[94]**	
5.1.1 Knowledge-intensive employment, %	4.2	118	
5.1.2 Females employed w/advanced degrees, %	1.9	110	
5.1.3 Youth demographic dividend, %	59	20	●
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	**12.5**	**120**	
5.2.1 Public research–industry co-publications, %	1	89	
5.2.2 University–industry R&D collaboration†	14.5	123	◇
5.2.3 University industry & international engagement, top 5*	n/a	n/a	
5.2.4 State of cluster development†	26.9	116	
5.2.5 Patent families/bn PPP$ GDP	0	100	○ ◇
5.3 Knowledge absorption	**22.5**	**91**	
5.3.1 Intellectual property payments, % total trade	0.3	91	
5.3.2 High-tech imports, % total trade	6	102	
5.3.3 ICT services imports, % total trade	1.7	55	●
5.3.4 FDI net inflows, % GDP	2.7	64	●
5.3.5 Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs	**9**	**124**	
6.1 Knowledge creation	**3.8**	**121**	
6.1.1 Patents by origin/bn PPP$ GDP	0.04	126	◇
6.1.2 PCT patents by inventor origin/bn PPP$ GDP	0	109	○ ◇
6.1.3 Utility models by origin/bn PPP$ GDP	-	-	
6.1.4 Scientific and technical articles/bn PPP$ GDP	5.4	103	
6.1.5 Citable documents H-index	4.1	115	
6.2 Knowledge impact	**9.5**	**134**	◇
6.2.1 Labor productivity growth, %	-0.7	115	
6.2.2 Unicorn valuation, % GDP	0	53	○ ◇
6.2.3 Software spending, % GDP	0.03	124	
6.2.4 High-tech manufacturing, %	1	112	○ ◇
6.3 Knowledge diffusion	**13.7**	**89**	◆
6.3.1 Intellectual property receipts, % total trade	0.02	103	
6.3.2 Production and export complexity	30.5	109	
6.3.3 High-tech exports, % total trade	0.3	104	◆
6.3.4 ICT services exports, % total trade	4.6	29	● ◆
6.3.5 ISO 9001 quality/bn PPP$ GDP	0.9	113	
Creative outputs	**20.9**	**[74]**	
7.1 Intangible assets	**39.6**	**[35]**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	55.9	25	● ◆
7.1.3 Global brand value, top 5,000, % GDP	n/a	n/a	
7.1.4 Industrial designs by origin/bn PPP$ GDP	4.3	17	● ◆
7.2 Creative goods and services	**4**	**[105]**	
7.2.1 Cultural and creative services exports, % total trade	0.3	76	
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	0.09	98	
7.3 Online creativity	**0.3**	**135**	◇
7.3.1 Top-level domains (TLDs)/th pop. 15–69	0.09	132	
7.3.2 GitHub commits/mn pop. 15–69	0.9	119	
7.3.3 Mobile app creation/bn PPP$ GDP	0	131	○ ◇

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.

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Data Availability

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

Madagascar has missing data for twelve indicators and outdated data for twenty indicators.

Missing data for Madagascar

Code	Indicator name	Economy year	Model year*	Source
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
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
4.2.3	Late-stage VC deal count, % global VC	n/a	2024	PitchBook Data, Inc.
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
5.2.3	University industry & international engagement, top 5*	n/a	2025	Times Higher Education, World University Rankings 2025
5.3.5	Research talent, % in businesses	n/a	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
7.1.1	Intangible asset intensity, top 15, %	n/a	2024	Brand Finance
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

*Model year corresponds to the most frequent data year (the year that appears most often across all economies in the GII).

Outdated data for Madagascar

Code	Indicator name	Economy year	Model year*	Source
1.3.1	Policy stability for doing business†	2019	2024	World Economic Forum, Executive Opinion Survey (EOS)
1.3.2	Entrepreneurship policies and culture†	2019	2024	Global Entrepreneurship Monitor
2.1.3	School life expectancy, years	2019	2023	UNESCO Institute for Statistics
2.1.5	Pupil–teacher ratio, secondary	2019	2023	UNESCO Institute for Statistics

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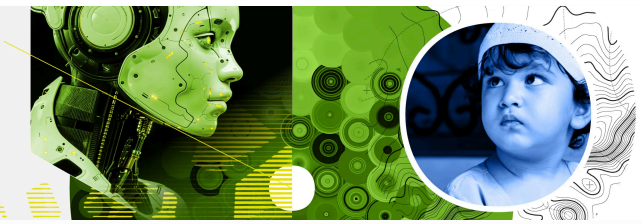

Code	Indicator name	Economy year	Model year*	Source
2.3.1	Researchers, FTE/mn pop.	2018	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2017	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.1	Electricity output, GWh/mn pop.	2022	2023	International Energy Agency
4.1.1	Finance for startups and scaleups†	2019	2024	Global Entrepreneurship Monitor
4.2.2	Venture capital (VC) received, deal count/bn PPP$ GDP	2023	2024	PitchBook Data, Inc.; International Monetary Fund
4.3.2	Domestic industry diversification	2021	2022	United Nations Industrial Development Organization (UNIDO)
5.1.1	Knowledge-intensive employment, %	2022	2024	International Labour Organization
5.1.2	Females employed w/advanced degrees, %	2015	2024	International Labour Organization
5.2.2	University–industry R&D collaboration†	2019	2024	World Economic Forum, Executive Opinion Survey (EOS)
5.2.4	State of cluster development†	2019	2024	World Economic Forum, Executive Opinion Survey (EOS)
5.3.1	Intellectual property payments, % total trade	2022	2023	World Trade Organization, Organisation for Economic Co-operation and Development; United Nations Conference on Trade and Development
5.3.3	ICT services imports, % total trade	2022	2023	World Trade Organization and United Nations Conference on Trade and Development
6.2.4	High-tech manufacturing, %	2021	2022	United Nations Industrial Development Organization (UNIDO)
6.3.1	Intellectual property receipts, % total trade	2022	2023	World Trade Organization, Organisation for Economic Co-operation and Development; United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2022	2023	World Trade Organization and United Nations Conference on Trade and Development
7.3.3	Mobile app creation/bn PPP$ GDP	2022	2024	data.ia (a Sensor Tower Company); International Monetary Fund

*Model year corresponds to the most frequent data year (the year that appears most often across all economies in the GII).

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.