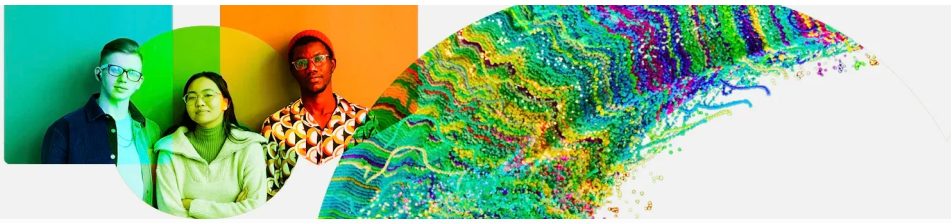
Global Innovation Index 2024



Indonesia ranking in the Global Innovation Index 2024

Indonesia ranks 54th 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.

Indonesia ranks 8th among the 34 upper-middle-income group economies.

Indonesia ranks 12th among the 17 economies in South East Asia, East Asia, and Oceania.

Indonesia GII Ranking (2020-2024)

The table shows the rankings of Indonesia 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 Indonesia in the GII 2024 is between ranks 53 and 63.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	85th	91st	76th
2021	87th	87th	84th
2022	75th	72nd	74th
2023	61st	64th	63rd
2024	54th	54th	67th

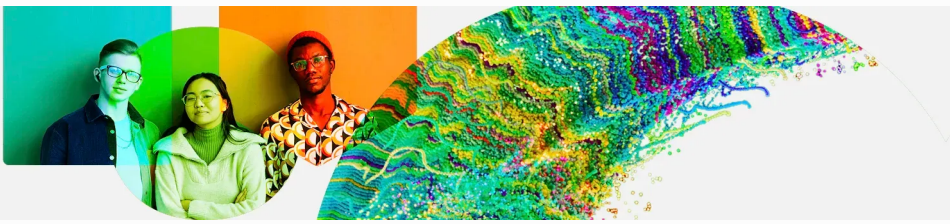
Indonesia performs worse in innovation outputs than innovation inputs in 2024.

This year **Indonesia ranks 54th in innovation inputs.** This position is higher than last year.

Indonesia ranks 67th in innovation outputs. This position is lower than last year.

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

For Indonesia, 6 indicators have improved in the short-term and 4 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -3.3% 2022 - 2023	▲ 1.3% 2019 - 2020	▼ -28.3% 2022 - 2023	▼ -55.4% 2022 - 2023	▲ 1,555.6% 2022 - 2023
▲ 16.8% 2013 - 2023	▲ 16.9% 2009 - 2020	▲ 38.9% 2013 - 2023	▲ 74.5% 2013 - 2023	▲ 25.8% 2013 - 2023

Technology adoption

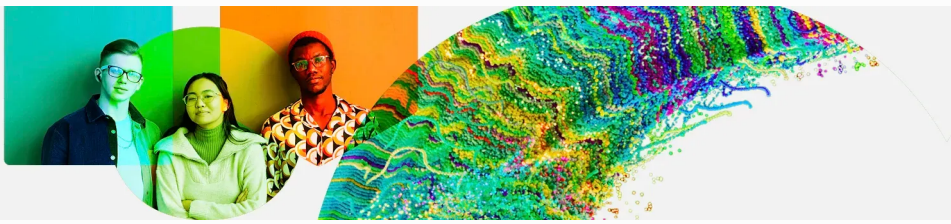
Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
n/a	▲ 7.6% 2021 - 2022	n/a	▲ 4.5% 2021 - 2022	n/a
n/a	▲ 15.1% 2012 - 2022		▲ 14% 2012 - 2022	n/a
n/a	4.9 per 100 inhabitants in 2022	4.6 per 100 inhabitants in 2021		n/a

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 1.9% 2022 - 2023	▲ 1% 2021 - 2022	▲ 1.1°C 2023
▲ 1.9% 2013 - 2023	▼ -0.1% 2012 - 2022	n/a
30,940 USD in 2023	68.3 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.

Global Innovation Index 2024



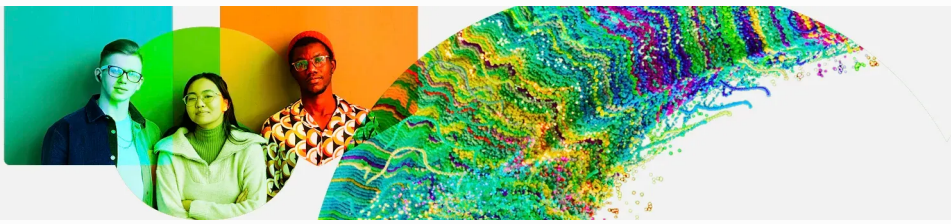
Expected vs. observed innovation performance

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, Indonesia is performing above expectations for its level of development.

> Innovation overperformers relative to their economic development

Global Innovation Index 2024



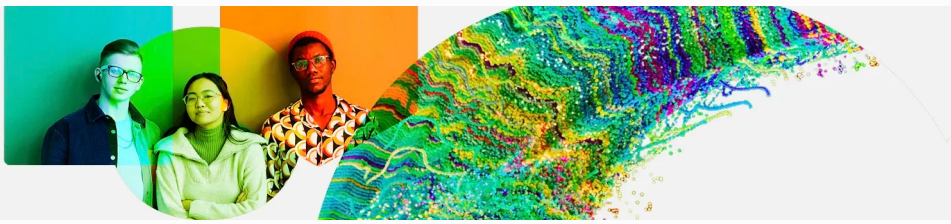
Effectively translating innovation investments into innovation outputs

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.

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

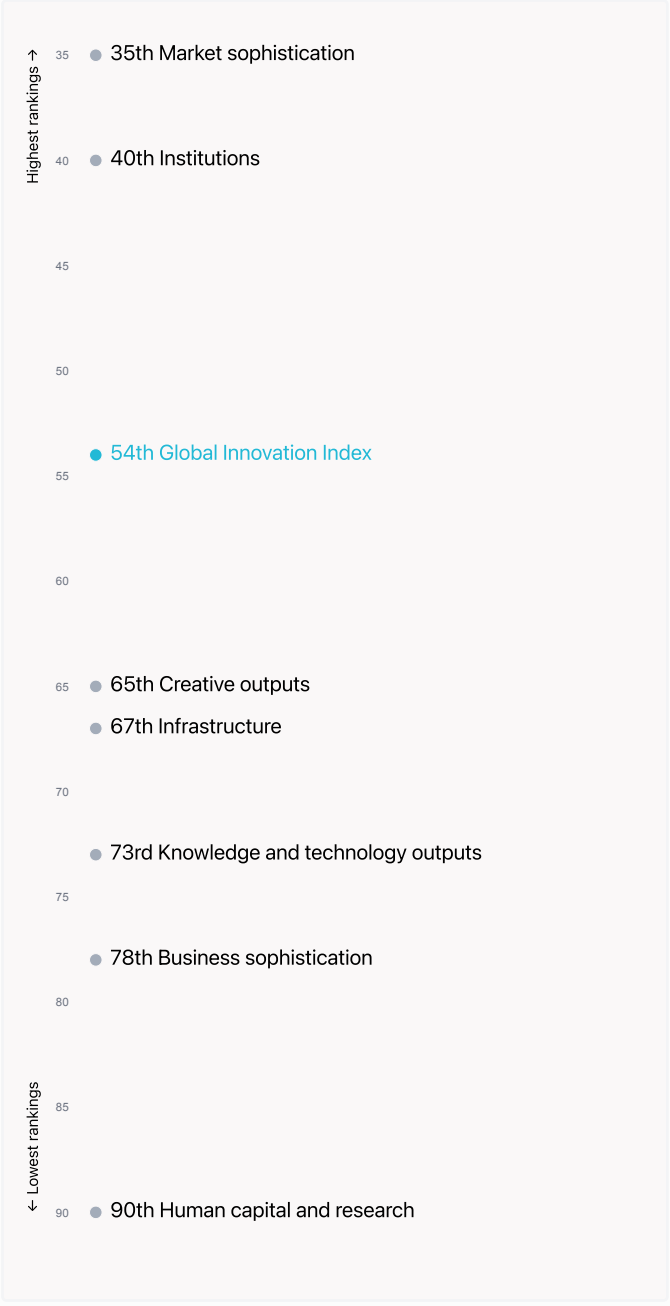
> Relationship between innovation inputs and outputs

Global Innovation Index 2024



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



Highest rankings

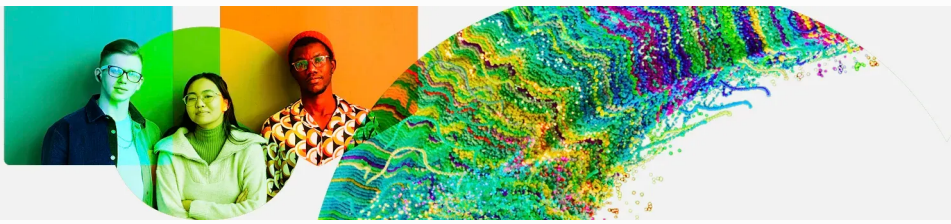
Indonesia ranks highest in Market sophistication (35th) and Institutions (40th).

Lowest rankings

Indonesia ranks lowest in Human capital and research (90th), Business sophistication (78th) and Knowledge and technology outputs (73rd).

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

Global Innovation Index 2024



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

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

Upper-Middle-Income economies

Indonesia performs above the upper-middle-income group average in Institutions, Infrastructure, Market sophistication, Creative outputs.

South East Asia, East Asia, And Oceania

Indonesia performs above the regional average in Institutions.

Institutions

- Top 10 | Score: 80.81
- Indonesia | Score: 59.51
- SEAO | Score: 59.26
- Upper middle income | Score: 43.0

Human capital and research

- Top 10 | Score: 61.30
- SEAO | Score: 39.09
- Upper middle income | Score: 29.5
- Indonesia | Score: 25.22

Infrastructure

- Top 10 | Score: 58.57
- SEAO | Score: 45.67
- Indonesia | Score: 41.21
- Upper middle income | Score: 39.8

Market sophistication

- Top 10 | Score: 62.12
- SEAO | Score: 45.28
- Indonesia | Score: 44.32
- Upper middle income | Score: 32.9

Business sophistication

- Top 10 | Score: 63.64
- SEAO | Score: 39.01
- Upper middle income | Score: 27.6
- Indonesia | Score: 24.20

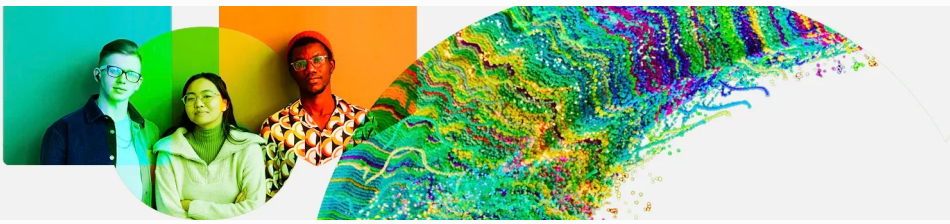
Knowledge and technology outputs

- Top 10 | Score: 57.29
- SEAO | Score: 29.72
- Upper middle income | Score: 20.6
- Indonesia | Score: 19.94

Creative outputs

- Top 10 | Score: 56.54
- SEAO | Score: 33.06
- Indonesia | Score: 24.76
- Upper middle income | Score: 24.3

Global Innovation Index 2024



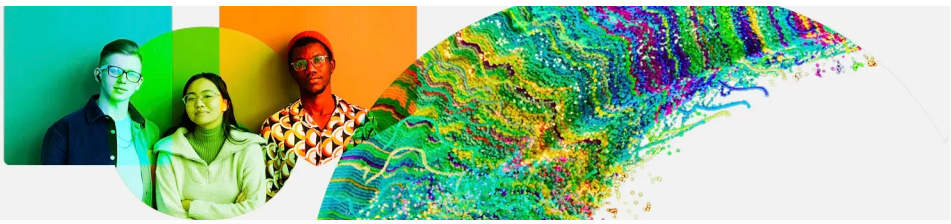
Innovation strengths and weaknesses in Indonesia

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

Indonesia's main innovation strengths are **Entrepreneurship policies and culture†** (rank 6), **University-industry R&D collaboration†** (rank 6) and **Domestic market scale, bn PPP$** (rank 7).

Strengths			Weaknesses		
Rank	Code	Indicator name	Rank	Code	Indicator name
6	1.3.2	Entrepreneurship policies and culture†	126	6.1.4	Scientific and technical articles/bn PPP$ GDP
6	5.2.2	University-industry R&D collaboration†	121	5.2.1	Public Research-Industry co-publications, %
7	4.3.3	Domestic market scale, bn PPP$	115	2.1.1	Expenditure on education, % GDP
7	4.1.1	Finance for startups and scaleups†	111	2.2.3	Tertiary inbound mobility, %
7	5.2.3	State of cluster development†	101	7.2.1	Cultural and creative services exports, % total trade
13	7.1.1	Intangible asset intensity, top 15, %	98	5.1.2	Firms offering formal training, %
13	1.3.1	Policy stability for doing business†	86	2.1.2	Government funding/pupil, secondary, % GDP/cap
22	4.3.2	Domestic industry diversification	83	5.1.3	GERD performed by business, % GDP
24	7.2.4	Creative goods exports, % total trade	75	2.1.4	PISA scales in reading, maths and science
26	6.2.3	Software spending, % GDP	61	4.1.3	Loans from microfinance institutions, % GDP

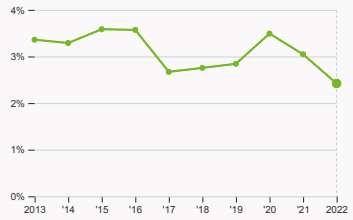
Global Innovation Index 2024



Indonesia's innovation system

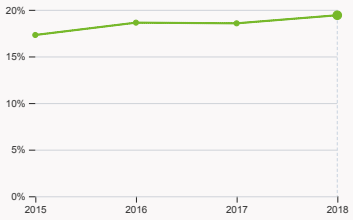
As far as practicable, the plots below present unscaled indicator data.

Innovation inputs in Indonesia



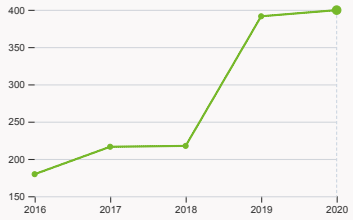
2.1.1 **Expenditure on education**

was equal to 2.42 % GDP in 2022, down by 0.63 percentage points from the year prior – and equivalent to an indicator rank of 115.



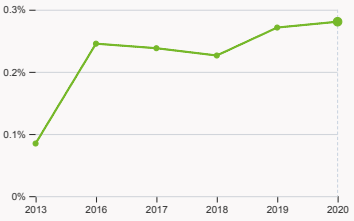
2.2.2 **Graduates in science and engineering**

was equal to 19.42 % of total graduates in 2018, up by 0.87 percentage points from the year prior – and equivalent to an indicator rank of 81.



2.3.1 **Researchers**

was equal to 399.61 FTE per million population in 2020, up by 2.11% from the year prior – and equivalent to an indicator rank of 78.



2.3.2 **Gross expenditure on R&D**

was equal to 0.28 % GDP in 2020, up by 0.009 percentage points from the year prior – and equivalent to an indicator rank of 75.

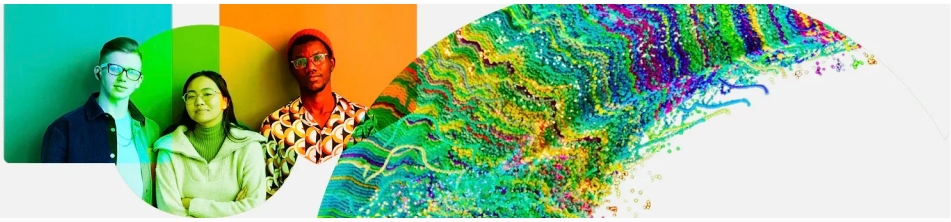
2.3.4 **QS university ranking**

was equal to an average score of 38.5 for the top three universities in 2023, down by 2.46% from the year prior – and equivalent to an indicator rank of 33.

4.2.4 **VC received, value**

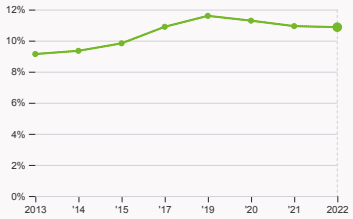
was equal to 1.31 million USD in 2023, down by 55.44% from the year prior – and equivalent to an indicator rank of 33.

Global Innovation Index 2024



4.3.2 Domestic industry diversification

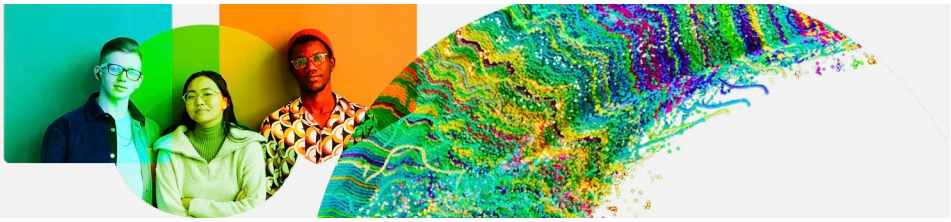
was equal to an index score of 0.09 in 2021, up by 8.44% from the year prior – and equivalent to an indicator rank of 22.



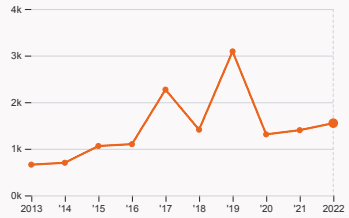
5.1.1 Knowledge-intensive employment

was equal to 10.87 % in 2022, down by 0.07 percentage points from the year prior – and equivalent to an indicator rank of 108.

Global Innovation Index 2024



Innovation outputs in Indonesia

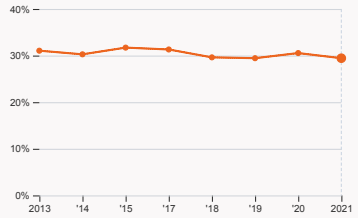


6.1.1 Patents by origin

was equal to 1.55 thousand patents in 2022, up by 10.71% from the year prior – and equivalent to an indicator rank of 82.

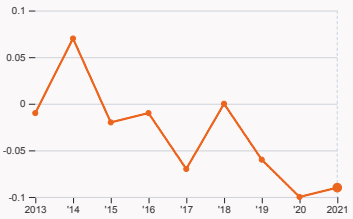
6.2.2 Unicorn valuation

was equal to 0.68 % GDP in 2024, down by 1.42 percentage points from the year prior – and equivalent to an indicator rank of 36.



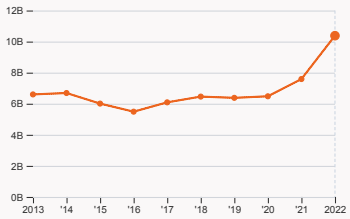
6.2.4 High-tech manufacturing

was equal to 29.44 % of total manufacturing output in 2021, down by 1.1 percentage points from the year prior – and equivalent to an indicator rank of 42.



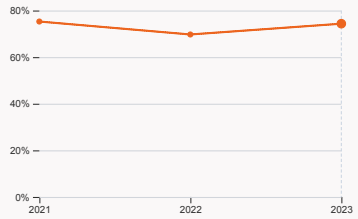
6.3.2 Production and export complexity

was equal to a score of -0.09 in 2021, up by 10% from the year prior – and equivalent to an indicator rank of 63.



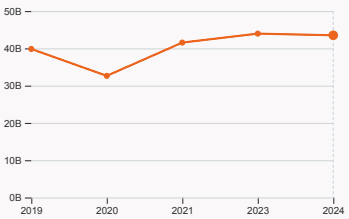
6.3.3 High-tech exports

was equal to 10.38 billion USD in 2022, up by 36.76% from the year prior – and equivalent to an indicator rank of 46.



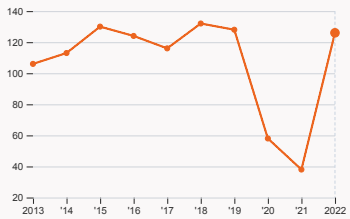
7.1.1 Intangible asset intensity

was equal to 74.35 % for the top 15 companies in 2023, up by 4.63 percentage points from the year prior – and equivalent to an indicator rank of 13.



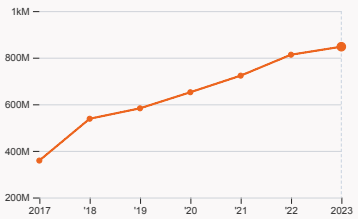
7.1.3 Global brand value

was equal to 43.51 billion USD for the brands in the top 5,000 in 2024, down by 1.001% from the year prior – and equivalent to an indicator rank of 41.



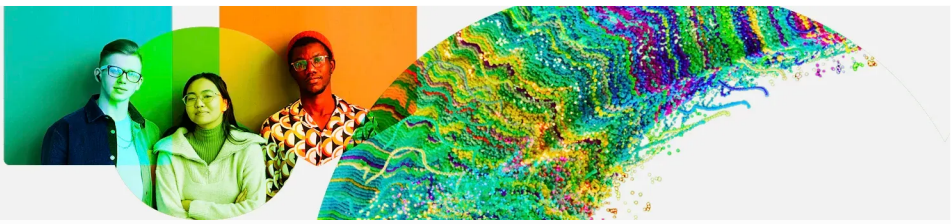
7.2.2 National feature films

was equal to 126 films in 2022, up by 231.58% from the year prior – and equivalent to an indicator rank of 74.



7.3.3 Mobile app creation

was equal to 847.14 million global downloads of mobile apps in 2023, up by 4.23% from the year prior – and equivalent to an indicator rank of 62.



Indonesia's innovation top performers

2.3.4 QS university ranking of Indonesia's top universities

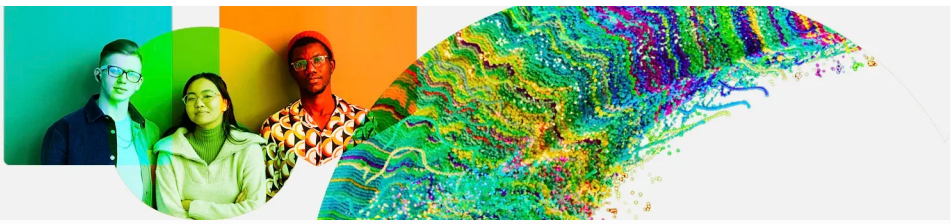
Rank	University	Score
237	UNIVERSITAS INDONESIA	40.90
263	GADJAH MADA UNIVERSITY	38.00
281	BANDUNG INSTITUTE OF TECHNOLOGY (ITB)	36.60

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2023).
Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100].
Ranks can represent a single value "x", a tie "x=" or a range "x-y".

6.2.2 Top Unicorn Companies in Indonesia

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	TRAVELOKA	Consumer & Retail	Jakarta	3
2	AKULAKU	Financial Services	Jakarta	2
3	EFISHERY	Industrials	Bandung	1

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 Indonesia

Rank	Firm	Intensity, %
1	PT BAYAN RESOURCES TBK	94.82
2	PT BANK RAKYAT INDONESIA	52.56
3	PT AMMAN MINERAL INTERNASIONAL TBK	83.97

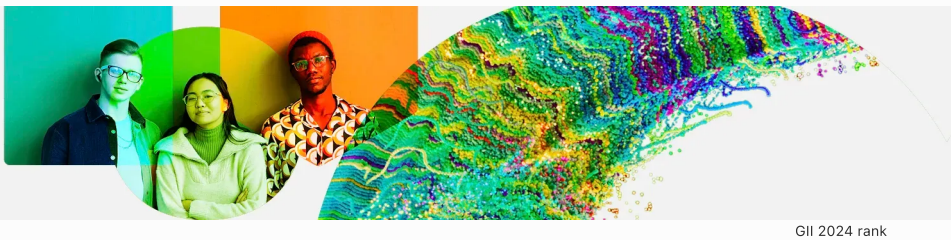
Source: Brand Finance (https://brandirectory.com/reports/gift-2022).
Note: Brand Finance only provides within economy ranks.

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

Rank	Brand	Industry	Brand Value, mn USD
1	BRI	Banking	5,364.6
2	PERTAMINA	Oil & Gas	4,457
3	BANK MANDIRI	Banking	3,674.9

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

Global Innovation Index 2024



Indonesia

GII 2024 rank **54**

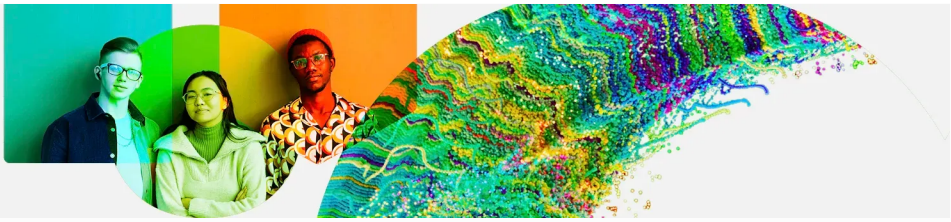
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
67	54	Upper middle	SEAO	281.2	4,393.4	15,835.8

	Score / Value	Rank	
Institutions	**59.5**	**40**	◆
1.1 Institutional environment	**57.7**	**55**	
1.1.1 Operational stability for businesses*	60	70	
1.1.2 Government effectiveness*	55.4	50	◆
1.2 Regulatory environment	**42.8**	**66**	
1.2.1 Regulatory quality*	47.2	60	
1.2.2 Rule of law*	38.4	77	
1.3 Business environment	**78**	**10**	● ◆
1.3.1 Policy stability for doing business†	78	13	● ◆
1.3.2 Entrepreneurship policies and culture†	77.9	6	● ◆
Human capital and research	**25.2**	**90**	
2.1 Education	**30.2**	**122**	○ ◇
2.1.1 Expenditure on education, % GDP	2.4	115	○ ◇
2.1.2 Government funding/pupil, secondary, % GDP/cap	10.6	86	○ ◇
2.1.3 School life expectancy, years	13.8	71	
2.1.4 PISA scales in reading, maths and science	369	75	○
2.1.5 Pupil–teacher ratio, secondary	20.7	101	
2.2 Tertiary education	**20**	**96**	
2.2.1 Tertiary enrolment, % gross	42.6	77	
2.2.2 Graduates in science and engineering, %	19.4	81	
2.2.3 Tertiary inbound mobility, %	0.1	111	○ ◇
2.3 Research and development (R&D)	**25.5**	**38**	◆
2.3.1 Researchers, FTE/mn pop.	399.6	78	
2.3.2 Gross expenditure on R&D, % GDP	0.3	75	
2.3.3 Global corporate R&D investors, top 3, mn USD	54.6	27	◆
2.3.4 QS university ranking, top 3*	39	33	
Infrastructure	**41.2**	**67**	
3.1 Information and communication technologies (ICTs)	**76.7**	**52**	
3.1.1 ICT access*	80.9	85	
3.1.2 ICT use*	81.2	49	
3.1.3 Government's online service*	74	51	
3.1.4 E-participation*	70.9	37	
3.2 General infrastructure	**32**	**61**	
3.2.1 Electricity output, GWh/mn pop.	1,223.9	93	◇
3.2.2 Logistics performance*	40.9	60	
3.2.3 Gross capital formation, % GDP	30.3	26	◆
3.3 Ecological sustainability	**14.8**	**94**	
3.3.1 GDP/unit of energy use	13.9	35	
3.3.2 Low-carbon energy use, %	6.6	99	
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.9	76	
Market sophistication	**44.3**	**35**	◆
4.1 Credit	**30.3**	**56**	
4.1.1 Finance for startups and scaleups†	80.4	7	● ◆
4.1.2 Domestic credit to private sector, % GDP	35.3	87	
4.1.3 Loans from microfinance institutions, % GDP	0.005	61	○
4.2 Investment	**13**	**53**	
4.2.1 Market capitalization, % GDP	47.3	39	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	0.04	73	
4.2.3 VC recipients, deals/bn PPP$ GDP	0.04	63	
4.2.4 VC received, value, % GDP	0.002	33	
4.3 Trade, diversification and market scale	**89.6**	**6**	● ◆
4.3.1 Applied tariff rate, weighted avg., %	1.6	57	
4.3.2 Domestic industry diversification	94.3	22	● ◆
4.3.3 Domestic market scale, bn PPP$	4,393.4	7	● ◆

	Score / Value	Rank	
Business sophistication	**24.2**	**78**	
5.1 Knowledge workers	**10.1**	**120**	○ ◇
5.1.1 Knowledge-intensive employment, %	10.9	108	◇
5.1.2 Firms offering formal training, %	8.4	98	○ ◇
5.1.3 GERD performed by business, % GDP	0.02	83	○
5.1.4 GERD financed by business, %	8	80	
5.1.5 Females employed w/advanced degrees, %	6.3	92	◇
5.2 Innovation linkages	**36.9**	**32**	◆
5.2.1 Public Research-Industry co-publications, %	0.5	121	○
5.2.2 University-industry R&D collaboration†	86.2	6	● ◆
5.2.3 State of cluster development†	91.8	7	● ◆
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.005	105	
5.2.5 Patent families/bn PPP$ GDP	0.003	101	
5.3 Knowledge absorption	**25.6**	**71**	
5.3.1 Intellectual property payments, % total trade	0.8	52	
5.3.2 High-tech imports, % total trade	8.9	55	
5.3.3 ICT services imports, % total trade	1.9	33	◆
5.3.4 FDI net inflows, % GDP	1.7	81	
5.3.5 Research talent, % in businesses	7.5	64	
Knowledge and technology outputs	**19.9**	**73**	
6.1 Knowledge creation	**11.1**	**78**	
6.1.1 Patents by origin/bn PPP$ GDP	0.4	82	
6.1.2 PCT patents by origin/bn PPP$ GDP	0.03	82	
6.1.3 Utility models by origin/bn PPP$ GDP	1	21	
6.1.4 Scientific and technical articles/bn PPP$ GDP	1.6	126	○ ◇
6.1.5 Citable documents H-index	14.4	57	
6.2 Knowledge impact	**34.9**	**41**	
6.2.1 Labor productivity growth, %	1.2	47	
6.2.2 Unicorn valuation, % GDP	0.7	36	
6.2.3 Software spending, % GDP	0.4	26	● ◆
6.2.4 High-tech manufacturing, %	29.4	42	
6.3 Knowledge diffusion	**13.8**	**80**	
6.3.1 Intellectual property receipts, % total trade	0.06	70	
6.3.2 Production and export complexity	40.7	63	
6.3.3 High-tech exports, % total trade	3.5	46	
6.3.4 ICT services exports, % total trade	0.8	89	
6.3.5 ISO 9001 quality/bn PPP$ GDP	2.5	84	
Creative outputs	**24.8**	**65**	
7.1 Intangible assets	**32.6**	**54**	
7.1.1 Intangible asset intensity, top 15, %	74.4	13	● ◆
7.1.2 Trademarks by origin/bn PPP$ GDP	26.6	72	
7.1.3 Global brand value, top 5,000, % GDP	2.8	41	
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.9	64	
7.2 Creative goods and services	**9.8**	**75**	
7.2.1 Cultural and creative services exports, % total trade	0.02	101	○
7.2.2 National feature films/mn pop. 15–69	0.6	74	
7.2.3 Entertainment and media market/th pop. 15–69	3.4	48	◇
7.2.4 Creative goods exports, % total trade	2.5	24	● ◆
7.3 Online creativity	**24**	**74**	
7.3.1 Top-level domains (TLDs)/th pop. 15–69	1.2	92	
7.3.2 GitHub commits/mn pop. 15–69	4.2	89	
7.3.3 Mobile app creation/bn PPP$ GDP	66.5	62	

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 2024



Data availability

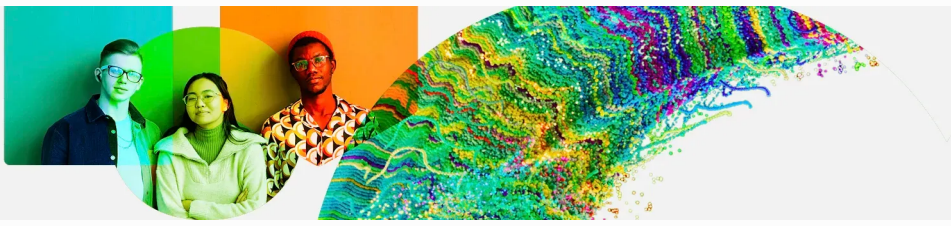
The following tables list indicators that are either missing or outdated for Indonesia.

Indonesia has missing data for zero indicators and outdated data for twelve indicators.

Outdated data for Indonesia

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture†	2022	2023	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2020	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2018	2022	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD
2.2.3	Tertiary inbound mobility, %	2018	2022	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2020	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2020	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
4.1.1	Finance for startups and scaleups†	2022	2023	Global Entrepreneurship Monitor
5.1.3	GERD performed by business, % GDP	2018	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2022	2023	International Labour Organization
5.3.5	Research talent, % in businesses	2018	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

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.

Source: Global Innovation Index Database, WIPO, 2024.

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.