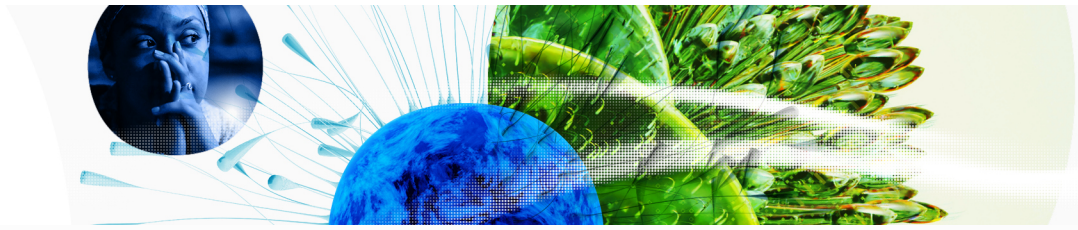
Global Innovation Index 2023



The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

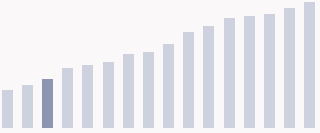
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation**.

Brunei Darussalam ranking in the Global Innovation Index 2023

> Brunei Darussalam ranks 87th among the 132 economies featured in the GII 2023.

> Brunei Darussalam ranks 49th among the 50 high-income group economies.

> Brunei Darussalam ranks 14th among the 16 economies in South East Asia, East Asia, and Oceania.



> Brunei Darussalam GII Ranking (2020-2023)

The table shows the rankings of Brunei Darussalam 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 Brunei Darussalam in the GII 2023 is between ranks 72 and 113.

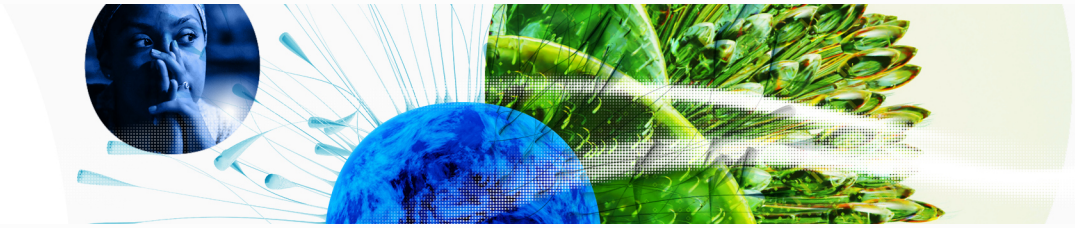
	GII Position	Innovation Inputs	Innovation Outputs
2020	71st	39th	113rd
2021	82nd	51st	115th
2022	92nd	53rd	129th
2023	87th	53rd	125th

Brunei Darussalam performs worse in innovation outputs than innovation inputs in 2023.

This year Brunei Darussalam ranks 53rd in innovation inputs. This position is the same as last year.

Brunei Darussalam ranks 125th in innovation outputs. This position is higher than last year.

Global Innovation Index 2023

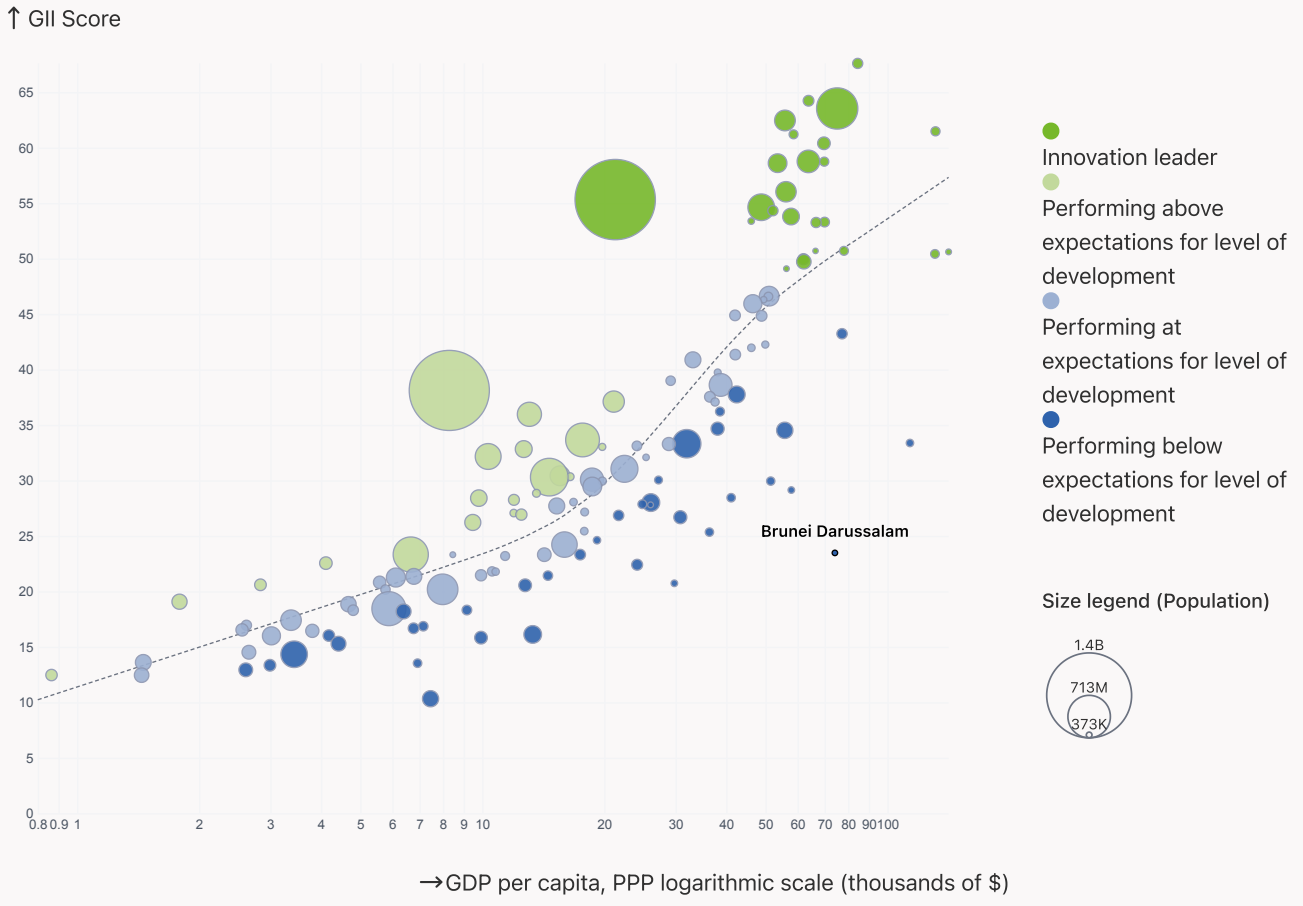


→ Expected vs. observed innovation performance

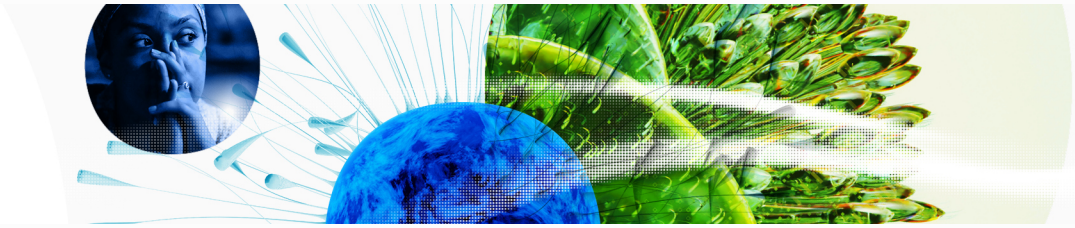
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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

> Relative to GDP, Brunei Darussalam's performance is below expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2023

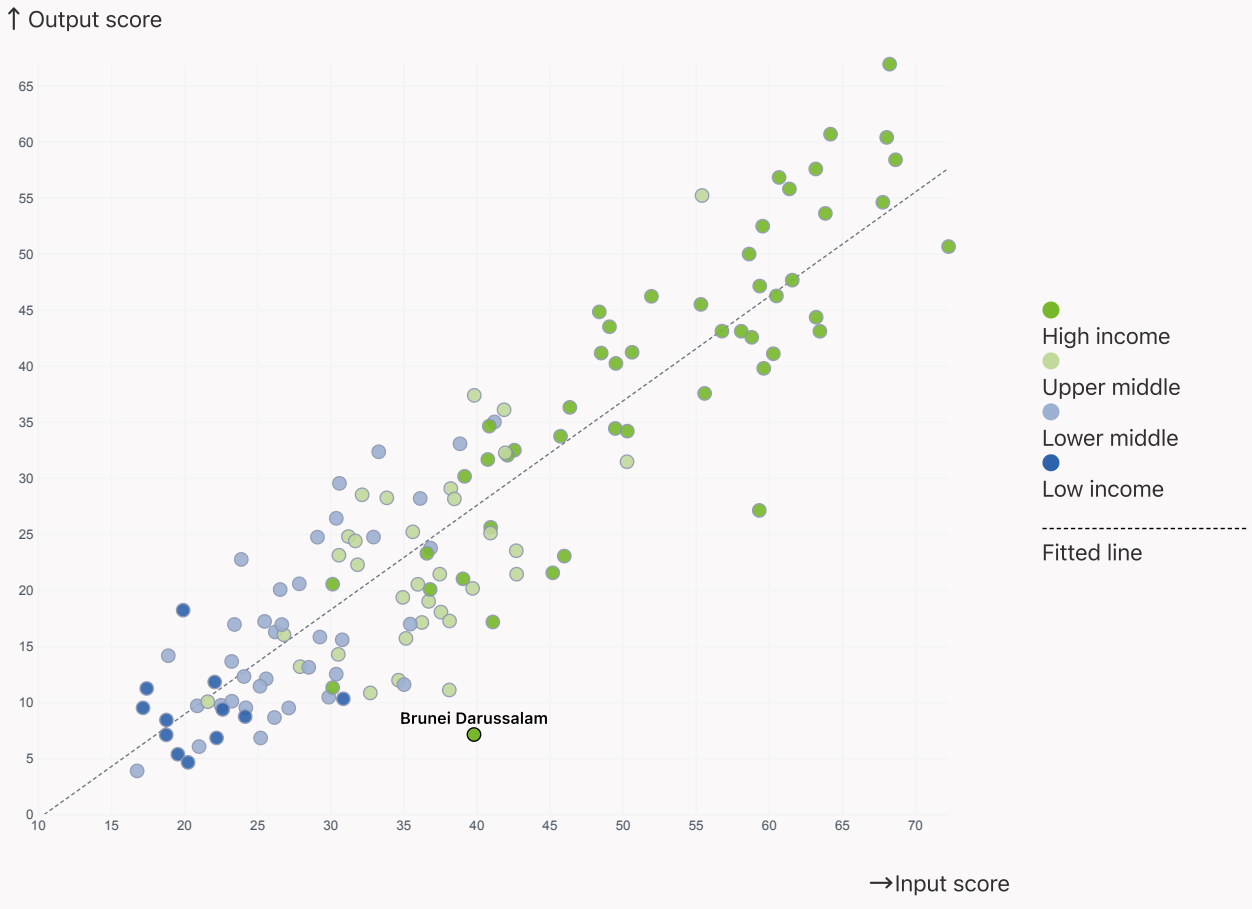


→ Effectively translating innovation investments into innovation outputs

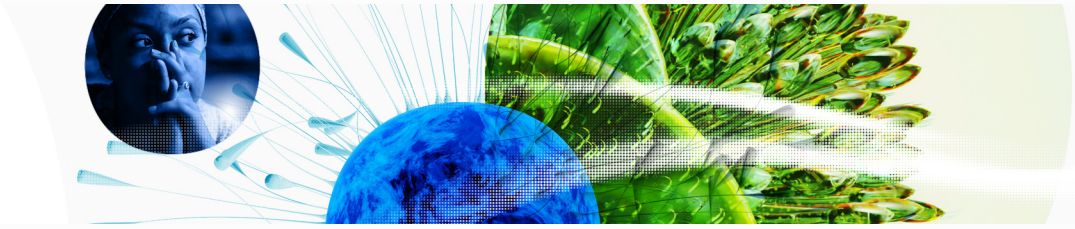
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

> Brunei Darussalam produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

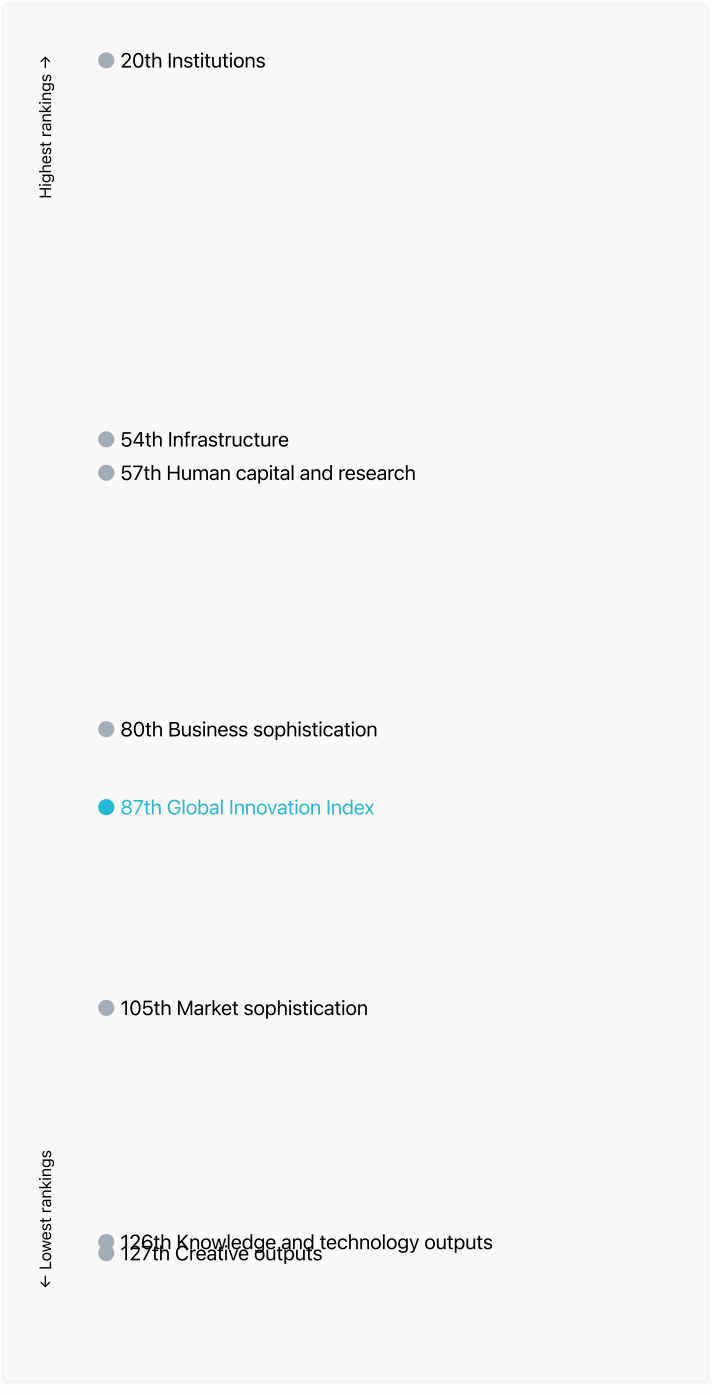


Global Innovation Index 2023



→ Overview of Brunei Darussalam's rankings in the seven areas of the GII in 2023

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



> Highest rankings

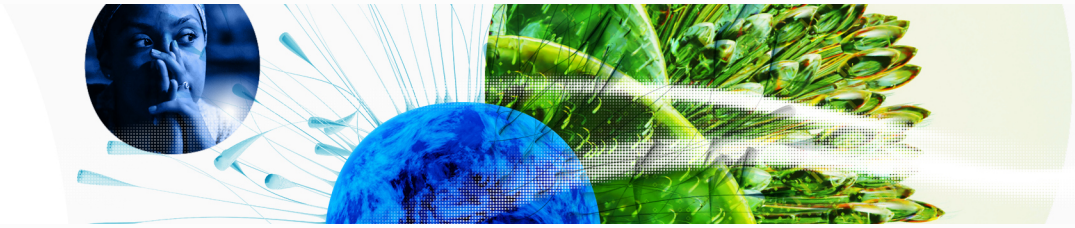
Brunei Darussalam ranks highest in Institutions (20th), Infrastructure (54th), Human capital and research (57th) and Business sophistication (80th).

> Lowest rankings

Brunei Darussalam ranks lowest in Creative outputs (127th), Knowledge and technology outputs (126th) and Market sophistication (105th).

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

Global Innovation Index 2023



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

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

> High-Income economies

Brunei Darussalam performs below the high-income group average in Knowledge and technology outputs, Creative outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure.

> South East Asia, East Asia, And Oceania

Brunei Darussalam performs below the regional average in Knowledge and technology outputs, Creative outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure.

Knowledge and technology outputs

- Top 10 | Score: 58.96
- High income | Score: 38.62
- SEAO | Score: 32.16
- Brunei Darussalam | Score: 9.76

* South East Asia, East Asia, and Oceania

Creative outputs

- Top 10 | 56.09
- High income | 40.27
- SEAO | 34.40
- Brunei Darussalam | 4.42

Business sophistication

- Top 10 | 64.39
- High income | 46.38
- SEAO | 40.54
- Brunei Darussalam | 25.25

Market sophistication

- Top 10 | 61.93
- SEAO | 47.18
- High income | 46.42
- Brunei Darussalam | 22.68

Human capital and research

- Top 10 | 60.28
- High income | 46.30
- SEAO | 40.81
- Brunei Darussalam | 33.18

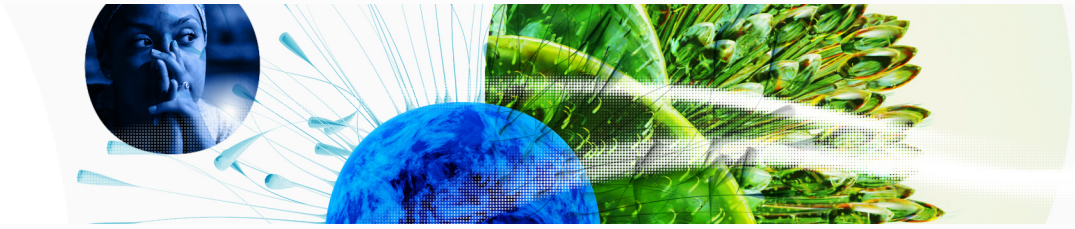
Infrastructure

- Top 10 | 62.83
- High income | 55.85
- SEAO | 47.13
- Brunei Darussalam | 45.20

Institutions

- Top 10 | 79.85
- Brunei Darussalam | 72.88
- High income | 68.16
- SEAO | 62.54

Global Innovation Index 2023



→ Innovation strengths and weaknesses in Brunei Darussalam

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

> Brunei Darussalam's main innovation strengths are **Cost of redundancy dismissal** (rank 1), **Applied tariff rate, weighted avg., %** (rank 2) and **Operational stability for businesses** (rank 3).

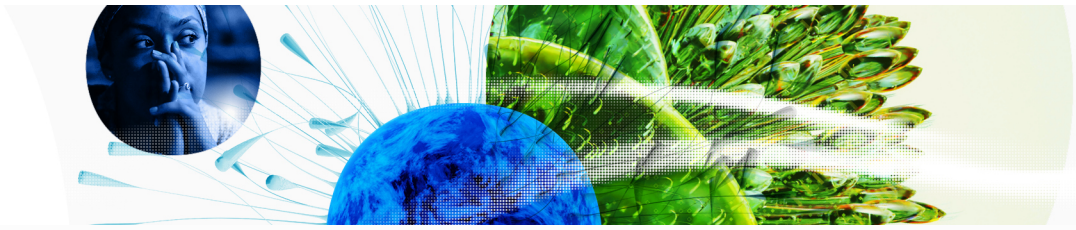
Strengths

Rank	Code	Indicator name
1	1.2.3	Cost of redundancy dismissal
2	4.3.1	Applied tariff rate, weighted avg., %
3	1.1.1	Operational stability for businesses
3	2.1.5	Pupil-teacher ratio, secondary
4	2.2.2	Graduates in science and engineering, %
10	3.2.1	Electricity output, GWh/mn pop.
15	1.1.2	Government effectiveness
25	3.2.3	Gross capital formation, % GDP
31	1.2.1	Regulatory quality
32	1.2.2	Rule of law

Weaknesses

Rank	Code	Indicator name
130	5.3.2	High-tech imports, % total trade
129	6.3.4	ICT services exports, % total trade
124	4.3.3	Domestic market scale, bn PPP$
120	7.1.4	Industrial designs by origin/bn PPP$ GDP
114	6.3.1	Intellectual property receipts, % total trade
109	7.2.1	Cultural and creative services exports, % total trade
101	6.1.2	PCT patents by origin/bn PPP$ GDP
98	5.1.4	GERD financed by business, %
48	6.2.2	Unicorn valuation, % GDP
40	2.3.3	Global corporate R&D investors, top 3, mn US$

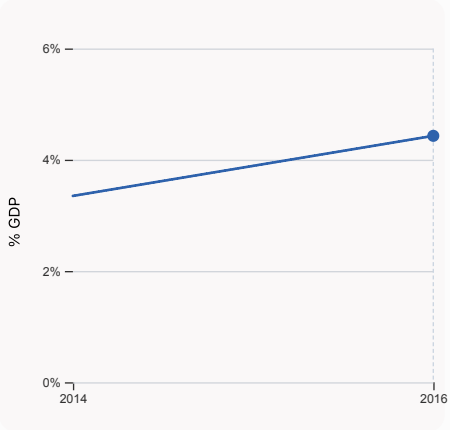
Global Innovation Index 2023



→ Brunei Darussalam's innovation system

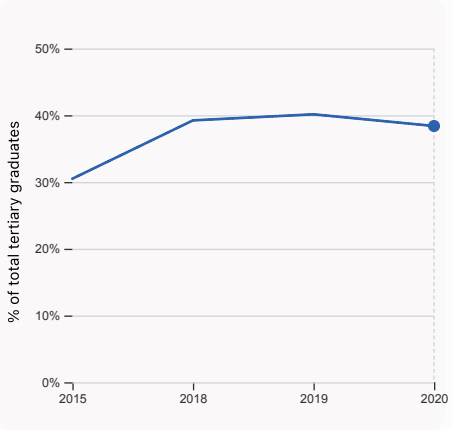
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Brunei Darussalam



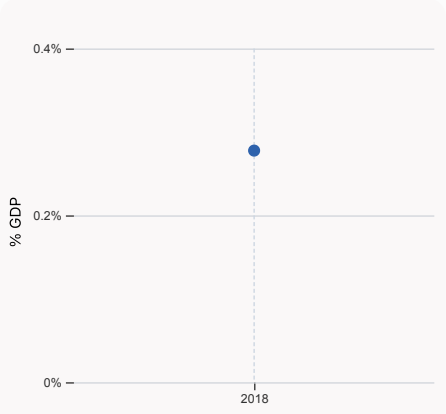
2.1.1 Expenditure on education, % GDP

was equal to 4.43% GDP in 2016, up by 1.08 percentage points from the year prior – and equivalent to an indicator rank of 56.



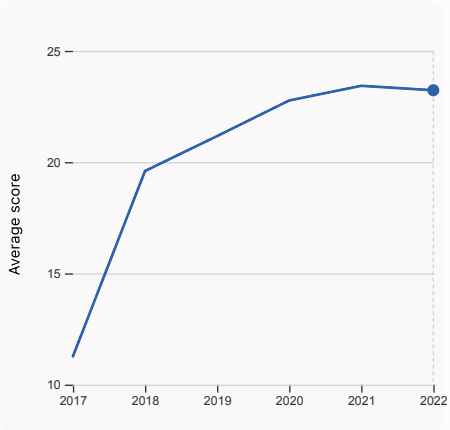
2.2.2 Graduates in science and engineering, %

was equal to 38.39% of total tertiary graduates in 2020, down by 1.75 percentage points from the year prior – and equivalent to an indicator rank of 4.



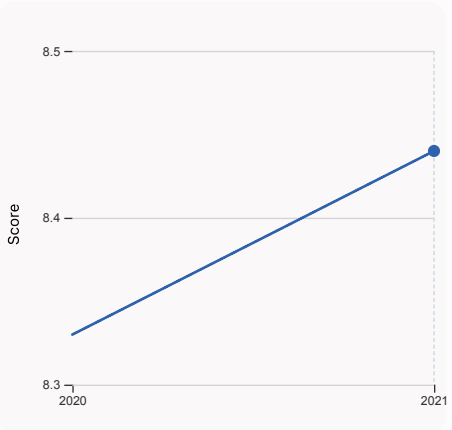
2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.278 % GDP in 2018, equivalent to an indicator rank of 80.



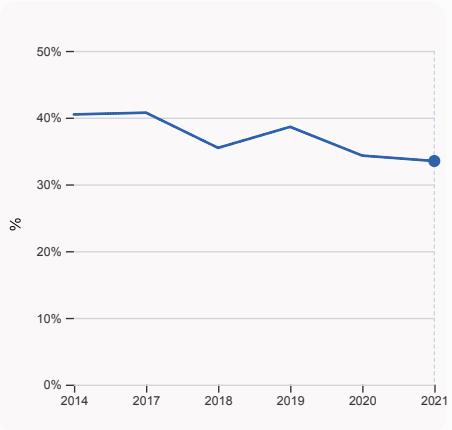
2.3.4 QS university ranking, top 3

was equal to an average score of 23.23 for the top 3 universities in 2022, down by 0.85% from the year prior – and equivalent to an indicator rank of 46.



3.1.1 ICT access

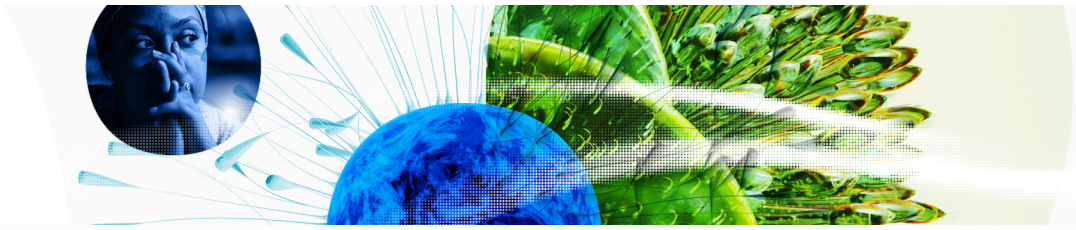
was equal to a score of 8.44 in 2021, up by 1.32% from the year prior – and equivalent to an indicator rank of 81.



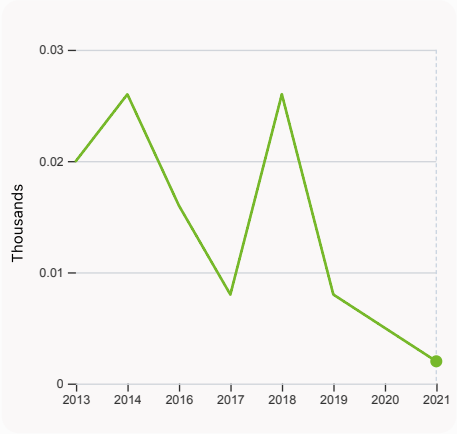
5.1.1 Knowledge-intensive employment, %

was equal to 33.5% in 2021, down by 0.81 percentage points from the year prior – and equivalent to an indicator rank of 43.

Global Innovation Index 2023

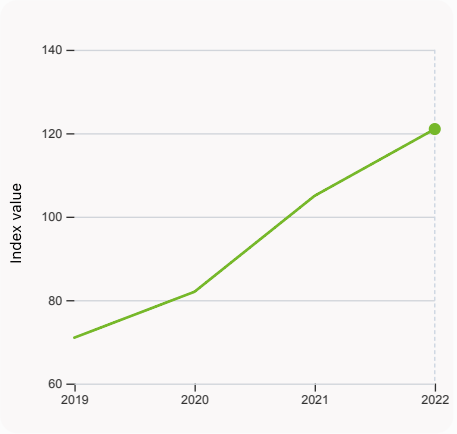


> Innovation outputs in Brunei Darussalam



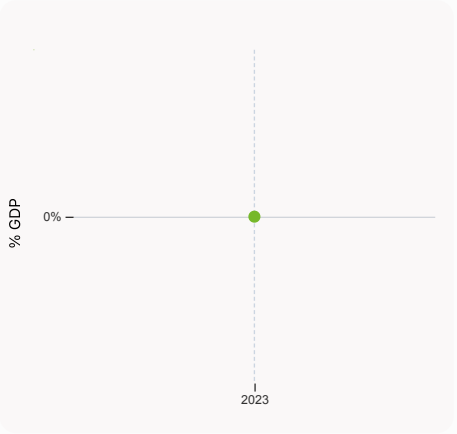
6.1.1 Patents by origin

was equal to 0.002 Thousands in 2021, down by 60% from the year prior – and equivalent to an indicator rank of 118.



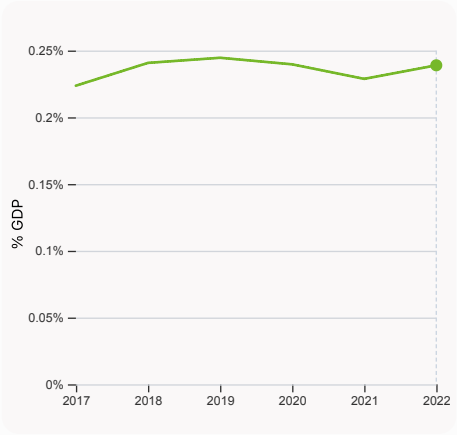
6.1.5 Citable documents H-index

was equal to an index value of 121 in 2022, up by 15.24% from the year prior – and equivalent to an indicator rank of 110.



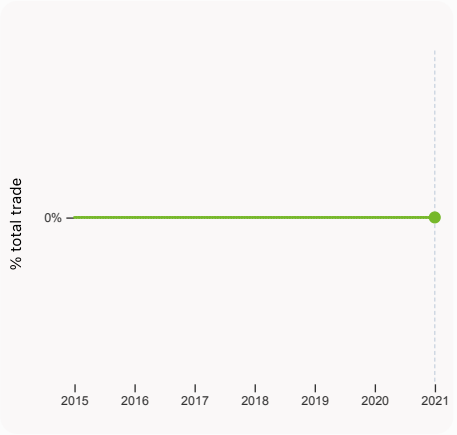
6.2.2 Unicorn valuation, % GDP

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



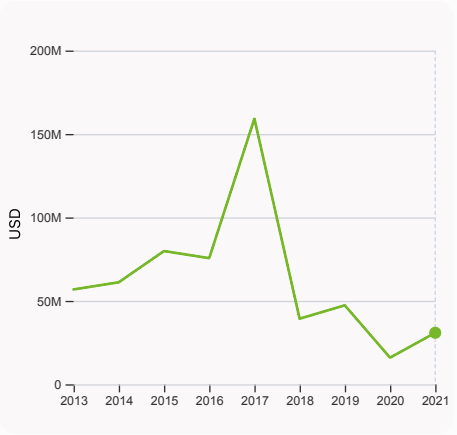
6.2.3 Software spending, % GDP

was equal to 0.239% GDP in 2022, up by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 62.



6.3.1 Intellectual property receipts, % total trade

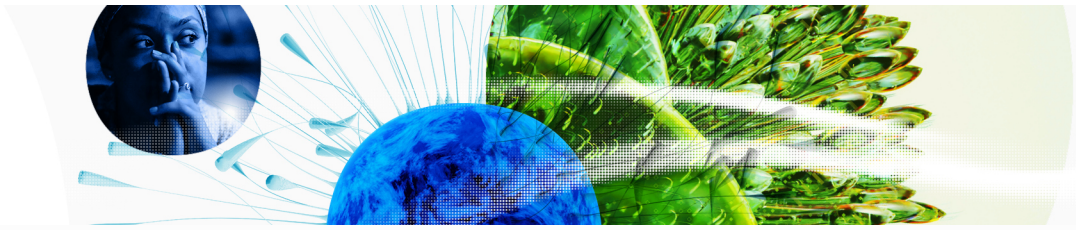
was equal to 0% total trade in 2021 – and equivalent to an indicator rank of 114.

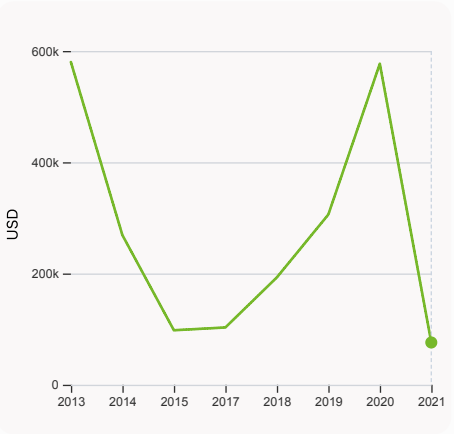


6.3.3 High-tech exports

was equal to 30,887,542 USD in 2021, up by 93.47% from the year prior – and equivalent to an indicator rank of 98.

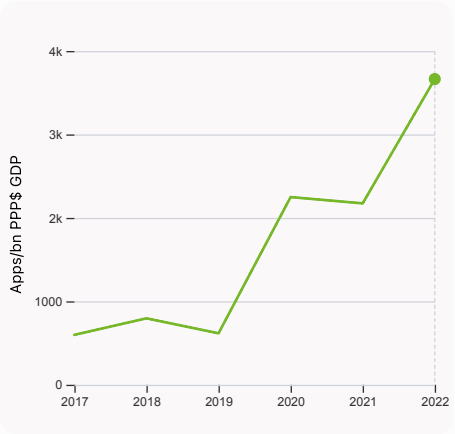
Global Innovation Index 2023





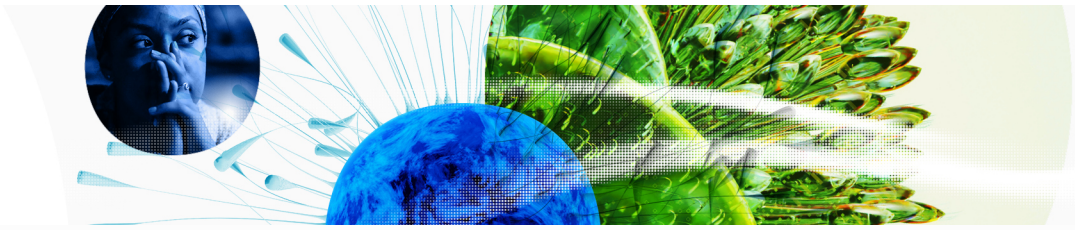
7.2.1 Cultural and creative services exports

was equal to 76,000 USD in 2021, down by 86.83% from the year prior – and equivalent to an indicator rank of 109.



7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 3,663.84 Apps/bn PPP$ GDP in 2022, up by 68.53% from the year prior – and equivalent to an indicator rank of 109.



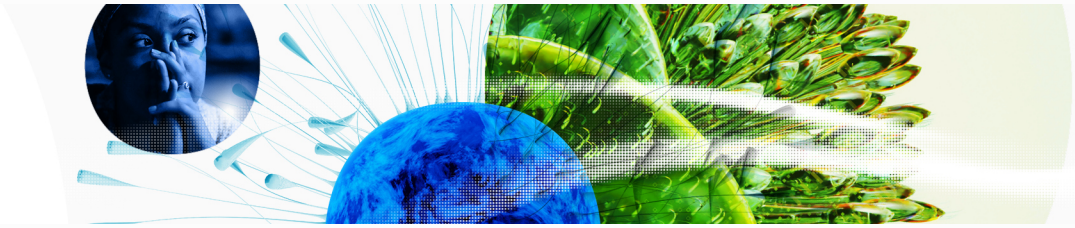
→ Brunei Darussalam's innovation top performers

> 2.3.4 QS university ranking of Brunei Darussalam's top universities

Rank	University	Score
256	UNIVERSITI BRUNEI DARUSSALAM (UBD)	38.10
340	UNIVERSITI TEKNOLOGI BRUNEI	31.60

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".

Global Innovation Index 2023



Brunei Darussalam

GII 2023 rank **87**

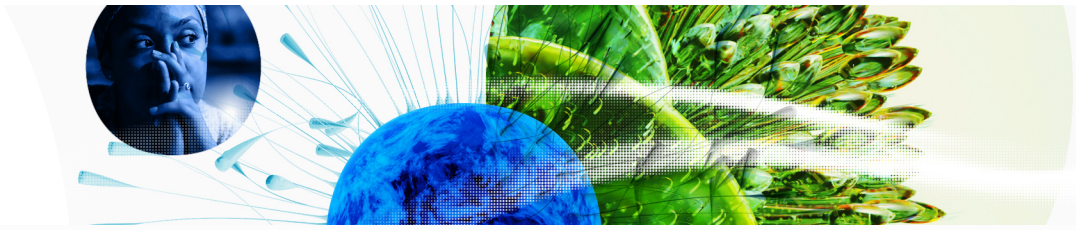
Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
125	53	High	SEAO	0.4	31.9	74,196.0

	Score / Value	Rank	
Institutions	**72.9**	**20**	
1.1 Institutional environment	**84.3**	**6**	
1.1.1 Operational stability for businesses*	91.7	3 ●	
1.1.2 Government effectiveness*	76.9	15 ●	
1.2 Regulatory environment	**83.4**	**20**	
1.2.1 Regulatory quality*	67.9	31 ●	
1.2.2 Rule of law*	65.8	32 ●	
1.2.3 Cost of redundancy dismissal	8.0	1 ●	
1.3 Business environment	**50.9**	**52**	
1.3.1 Policies for doing business†	50.9	59	
1.3.2 Entrepreneurship policies and culture†	n/a	n/a	
Human capital and research	**33.2**	**57**	◇
2.1 Education	**52.2**	**63**	
2.1.1 Expenditure on education, % GDP	4.4	56	
2.1.2 Government funding/pupil, secondary, % GDP/cap	24.0	26	
2.1.3 School life expectancy, years	14.0	72	◇
2.1.4 PISA scales in reading, maths and science	423.1	53	◇
2.1.5 Pupil-teacher ratio, secondary	7.2	3 ●	
2.2 Tertiary education	**37.9**	**39**	
2.2.1 Tertiary enrolment, % gross	32.0	86	◇
2.2.2 Graduates in science and engineering, %	38.4	4 ●	
2.2.3 Tertiary inbound mobility, %	3.7	59	
2.3 Research and development (R&D)	**9.5**	**63**	◇
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	
2.3.2 Gross expenditure on R&D, % GDP	0.3	80	◇
2.3.3 Global corporate R&D investors, top 3, mn US$	0.0	40 ○	◇
2.3.4 QS university ranking, top 3*	23.5	46	
Infrastructure	**45.2**	**54**	◇
3.1 Information and communication technologies (ICTs)	**65.5**	**75**	◇
3.1.1 ICT access*	76.6	81	◇
3.1.2 ICT use*	84.6	41	
3.1.3 Government's online service*	54.4	86	◇
3.1.4 E-participation*	46.5	80	◇
3.2 General infrastructure	**48.3**	**20**	
3.2.1 Electricity output, GWh/mn pop.	13,135.0	10 ●	
3.2.2 Logistics performance*	n/a	n/a	
3.2.3 Gross capital formation, % GDP	30.0	25 ●	
3.3 Ecological sustainability	**21.8**	**75**	◇
3.3.1 GDP/unit of energy use	6.9	99	
3.3.2 Environmental performance*	45.4	55	
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.8	70	◇
Market sophistication	**22.7**	**105**	
4.1 Credit	**13.5**	**104**	
4.1.1 Finance for startups and scaleups†	n/a	n/a	
4.1.2 Domestic credit to private sector, % GDP	39.7	82	◇
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**4.3**	**84**	
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	0.1	47	
4.2.3 VC recipients, deals/bn PPP$ GDP	n/a	n/a	
4.2.4 VC received, value, % GDP	n/a	n/a	
4.3 Trade, diversification, and market scale	**50.2**	**86**	◇
4.3.1 Applied tariff rate, weighted avg., %	0.0	2 ●	
4.3.2 Domestic industry diversification	n/a	n/a	
4.3.3 Domestic market scale, bn PPP$	31.9	124 ○	

	Score / Value	Rank	
Business sophistication	**25.3**	**80**	◇
5.1 Knowledge workers	**30.7**	**68**	
5.1.1 Knowledge-intensive employment, %	33.5	43	
5.1.2 Firms offering formal training, %	n/a	n/a	
5.1.3 GERD performed by business, % GDP	n/a	n/a	
5.1.4 GERD financed by business, %	0.0	98 ○	◇
5.1.5 Females employed w/advanced degrees, %	13.0	58	◇
5.2 Innovation linkages	**21.4**	**66**	◇
5.2.1 University-industry R&D collaboration†	53.5	47	
5.2.2 State of cluster development†	41.7	63	
5.2.3 GERD financed by abroad, % GDP	0.0	91	◇
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	43	
5.2.5 Patent families/bn PPP$ GDP	0.0	68	
5.3 Knowledge absorption	**23.7**	**111**	◇
5.3.1 Intellectual property payments, % total trade	0.2	93	◇
5.3.2 High-tech imports, % total trade	2.8	130 ○	◇
5.3.3 ICT services imports, % total trade	1.1	80	
5.3.4 FDI net inflows, % GDP	3.0	47	
5.3.5 Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs	**9.8**	**126**	◇
6.1 Knowledge creation	**8.7**	**89**	◇
6.1.1 Patents by origin/bn PPP$ GDP	0.1	118	◇
6.1.2 PCT patents by origin/bn PPP$ GDP	0.0	101 ○	◇
6.1.3 Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a	
6.1.5 Citable documents H-index	4.3	110	◇
6.2 Knowledge impact	**17.1**	**116**	◇
6.2.1 Labor productivity growth, %	-1.7	121	◇
6.2.2 Unicorn valuation, % GDP	0.0	48 ○	◇
6.2.3 Software spending, % GDP	0.2	62	
6.2.4 High-tech manufacturing, %	n/a	n/a	
6.3 Knowledge diffusion	**3.5**	**128**	◇
6.3.1 Intellectual property receipts, % total trade	0.0	114 ○	◇
6.3.2 Production and export complexity	n/a	n/a	
6.3.3 High-tech exports, % total trade	0.3	98	◇
6.3.4 ICT services exports, % total trade	0.0	129 ○	◇
6.3.5 ISO 9001 quality/bn PPP$ GDP	2.9	76	
Creative outputs	**4.4**	**127**	
7.1 Intangible assets	**1.5**	**128**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	6.0	118	◇
7.1.3 Global brand value, top 5,000	n/a	n/a	
7.1.4 Industrial designs by origin/bn PPP$ GDP	0.0	120 ○	◇
7.2 Creative goods and services	**0.2**	**129**	
7.2.1 Cultural and creative services exports, % total trade	0.0	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	0.0	116	
7.3 Online creativity	**14.4**	**101**	◇
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	8.1	46	
7.3.2 Country-code TLDs/th pop. 15-69	1.1	86	◇
7.3.3 GitHub commits/mn pop. 15-69	4.3	74	◇
7.3.4 Mobile app creation/bn PPP$ GDP	43.9	109	◇

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question, ◔ indicates that the economy's data are older than the base year; see appendices for details, including the year of the data, at https://www.wipo.int/gii-ranking. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

Global Innovation Index 2023



→ Data availability

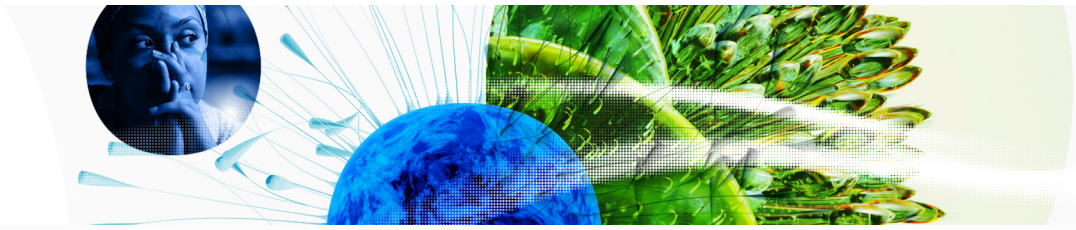
The following tables list indicators that are either missing or outdated for Brunei Darussalam.

> Brunei Darussalam has missing data for nineteen indicators and outdated data for twelve indicators.

> Missing data for Brunei Darussalam

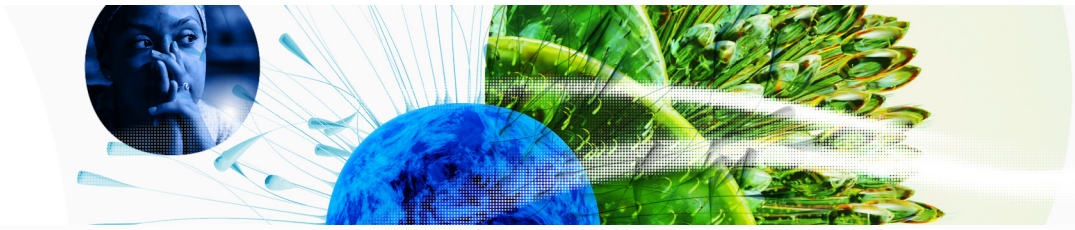
Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
2.3.1	Researchers, FTE/mn pop.	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.2	Logistics performance	n/a	2023	World Bank, Logistics Performance Index 2023 (https://lpi.worldbank.org/); and World Bank 2023, Connecting to Compete 2023: Trade Logistics in the Global Economy ÔÇô The Logistics Performance Index and its Indicators.
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	International Monetary Fund, Financial Access Survey (FAS)
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges; World Bank
4.2.3	VC recipients, deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % GDP	n/a	2022	Refinitiv; International Monetary Fund
4.3.2	Domestic industry diversification	n/a	2020	United Nations Industrial Development Organization
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
5.1.3	GERD performed by business, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2021	World Intellectual Property Organization; International Monetary Fund
6.2.4	High-tech manufacturing, %	n/a	2020	United Nations Industrial Development Organization
6.3.2	Production and export complexity	n/a	2020	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance

Global Innovation Index 2023



Code	Indicator name	Economy Year	Model Year	Source
7.1.3	Global brand value, top 5,000	n/a	2023	Brand Finance; International Monetary Fund
7.2.2	National feature films/mn pop. 15-69	n/a	2021	OMDIA; United Nations, World Population Prospects
7.2.3	Entertainment and media market/th pop. 15-69	n/a	2022	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

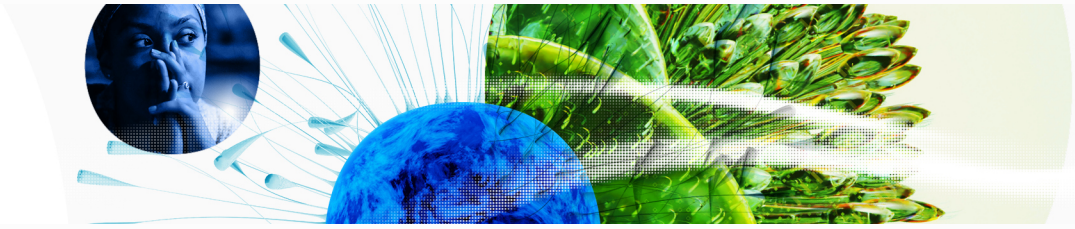
Global Innovation Index 2023



> Outdated data for Brunei Darussalam

Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
2.1.1	Expenditure on education, % GDP	2016	2021	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2016	2019	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
5.1.1	Knowledge-intensive employment, %	2021	2022	International Labour Organization
5.1.4	GERD financed by business, %	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2021	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	GERD financed by abroad, % GDP	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	2021	2022	Refinitiv; International Monetary Fund

Global Innovation Index 2023



About the Global Innovation Index

- The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.
- Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a "tool for action" for economies that incorporate the GII into their innovation agendas.

Source: Global Innovation Index Database, WIPO, 2023.

The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that include institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each consisting of three sub-pillars.