

Global Innovation Index 2023

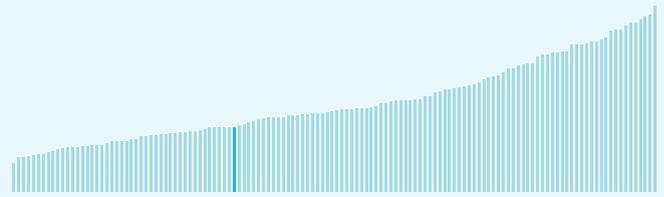


The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

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

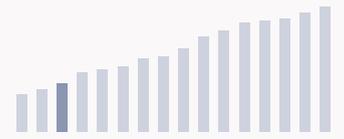
> Brunei Darussalam ranks **87th** among the 132 economies featured in the GII 2023.



> 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.

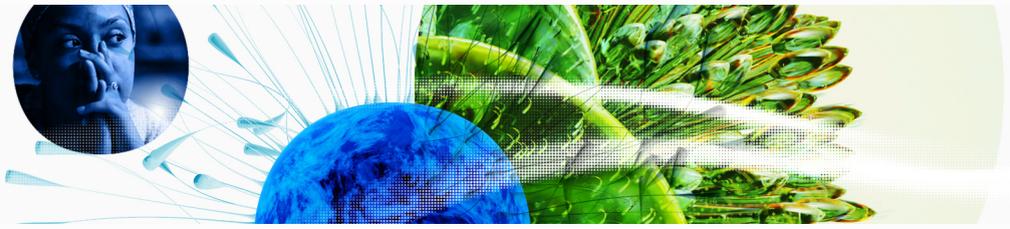
	GII Position	Innovation Inputs	Innovation Outputs
2020	71st	39th	113rd
2021	82nd	51st	115th
2022	92nd	53rd	129th
2023	87th	53rd	125th

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.

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→ Expected vs. observed innovation performance

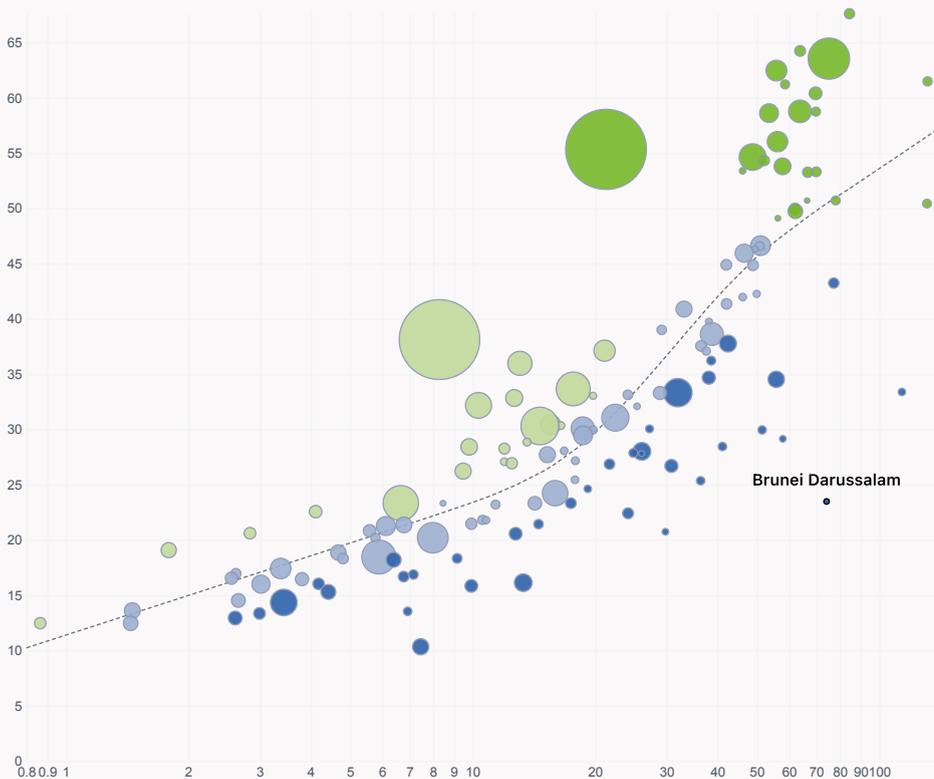
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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

↑ **GII Score**



- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



→ GDP per capita, PPP logarithmic scale (thousands of \$)

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→ Effectively translating innovation investments into innovation outputs

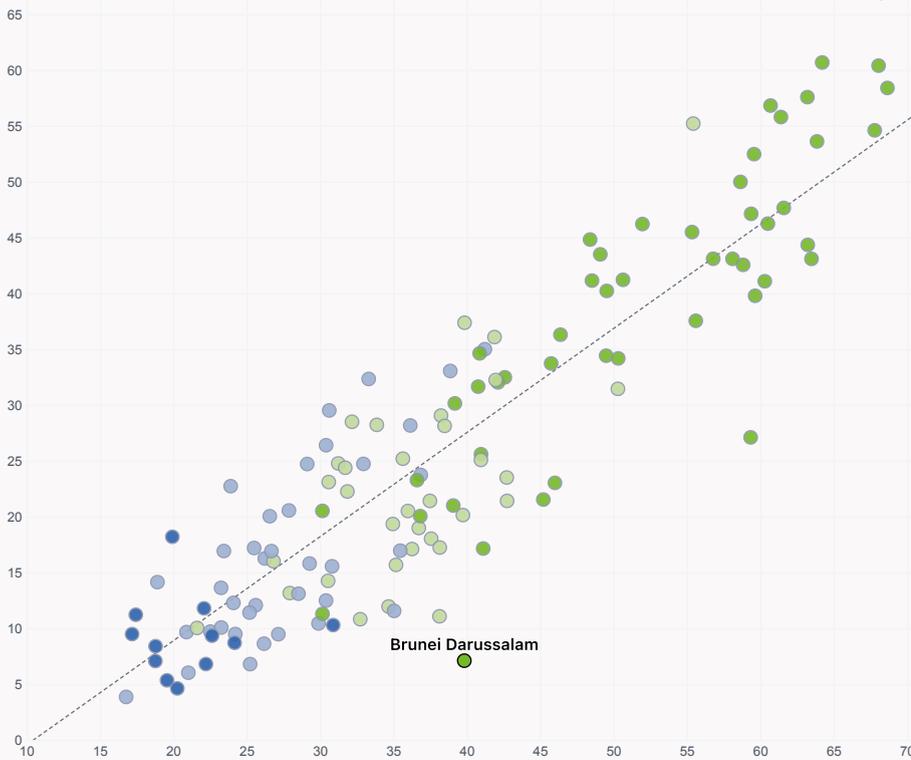
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.



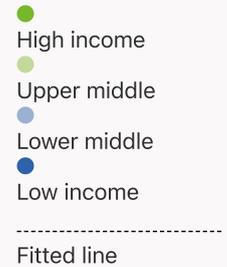
> Brunei Darussalam produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

↑ Output score



→Input score

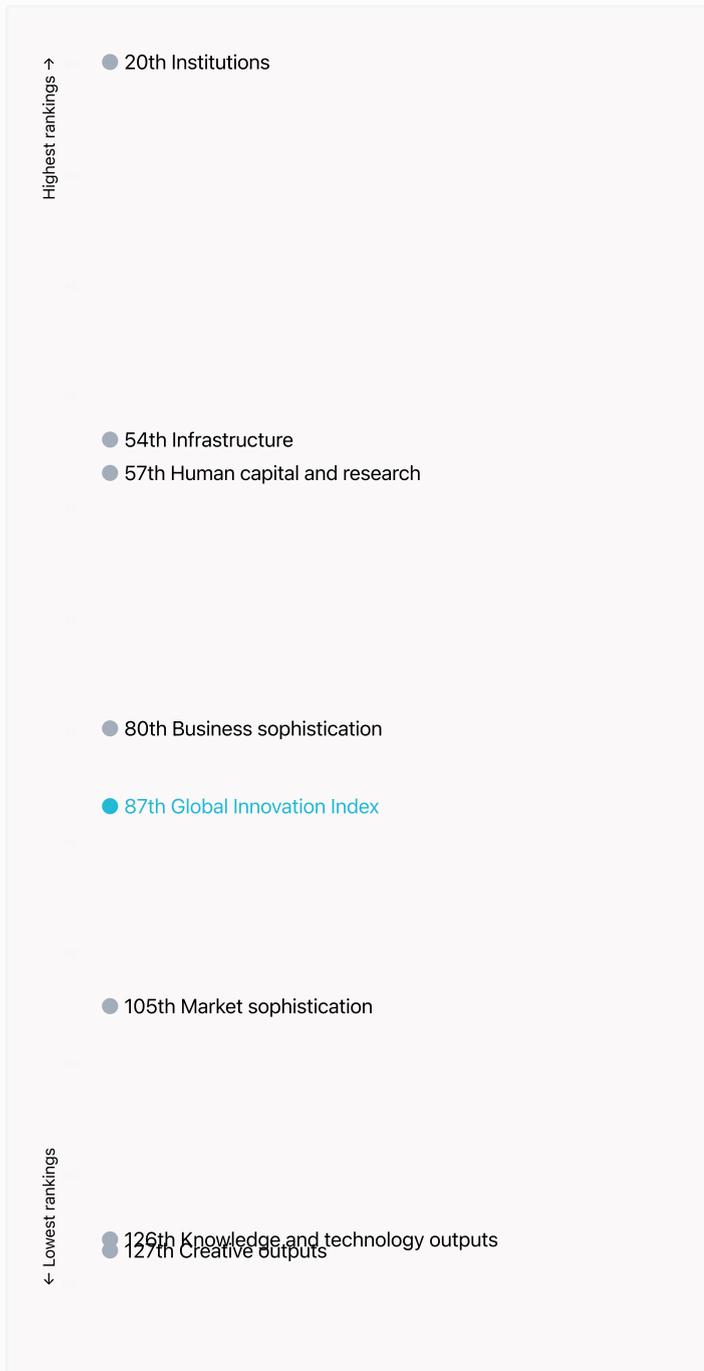


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→ Overview of Brunei Darussalam's rankings in the seven areas of the GII in 2023

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](#).

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

The charts show 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



→ 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

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	1.2.3	Cost of redundancy dismissal	130	5.3.2	High-tech imports, % total trade
2	4.3.1	Applied tariff rate, weighted avg., %	129	6.3.4	ICT services exports, % total trade
3	1.1.1	Operational stability for businesses	124	4.3.3	Domestic market scale, bn PPP\$
3	2.1.5	Pupil-teacher ratio, secondary	120	7.1.4	Industrial designs by origin/bn PPP\$ GDP
4	2.2.2	Graduates in science and engineering, %	114	6.3.1	Intellectual property receipts, % total trade
10	3.2.1	Electricity output, GWh/mn pop.	109	7.2.1	Cultural and creative services exports, % total trade
15	1.1.2	Government effectiveness	101	6.1.2	PCT patents by origin/bn PPP\$ GDP
25	3.2.3	Gross capital formation, % GDP	98	5.1.4	GERD financed by business, %
31	1.2.1	Regulatory quality	48	6.2.2	Unicorn valuation, % GDP
32	1.2.2	Rule of law	40	2.3.3	Global corporate R&D investors, top 3, mn US\$

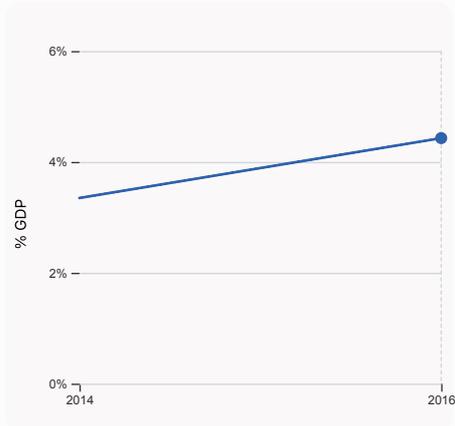
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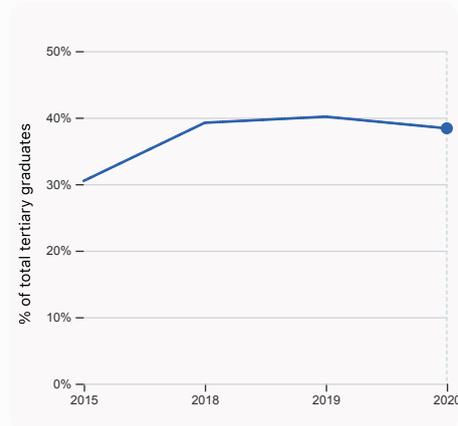
→ Brunei Darussalam's innovation system

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

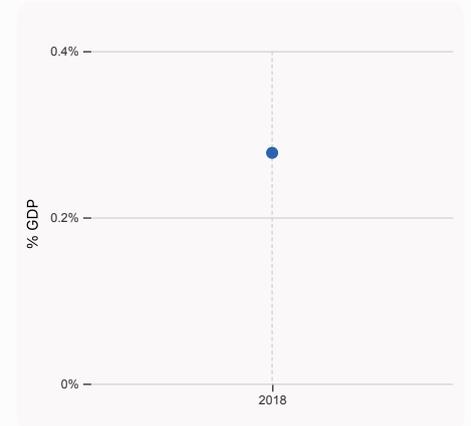
> Innovation inputs in Brunei Darussalam



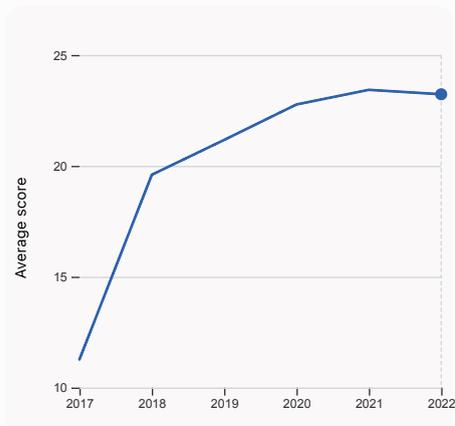
2.1.1 Expenditure on education, % GDP was equal to 4.43% GDP in 2016, up by 1.08 percentage points from the year prior – and equivalent to an indicator rank of 56.



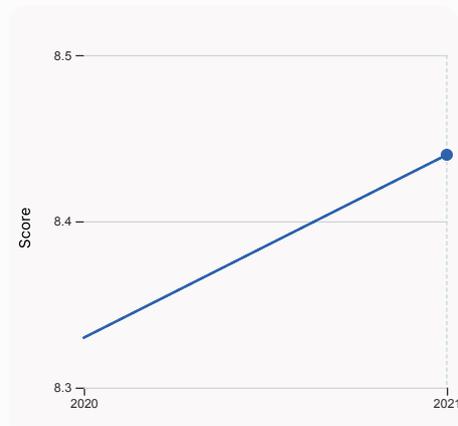
2.2.2 Graduates in science and engineering, % was equal to 38.39% of total tertiary graduates in 2020, down by 1.75 percentage points from the year prior – and equivalent to an indicator rank of 4.



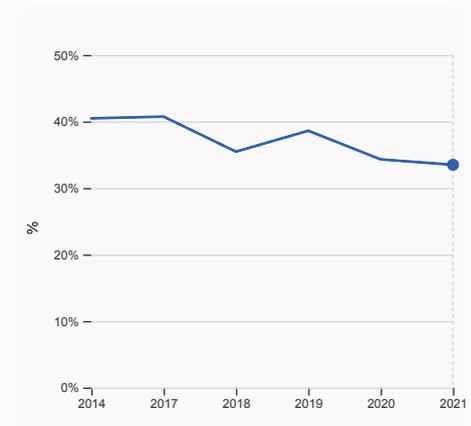
2.3.2 Gross expenditure on R&D, % GDP was equal to 0.278 % GDP in 2018, equivalent to an indicator rank of 80.



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.

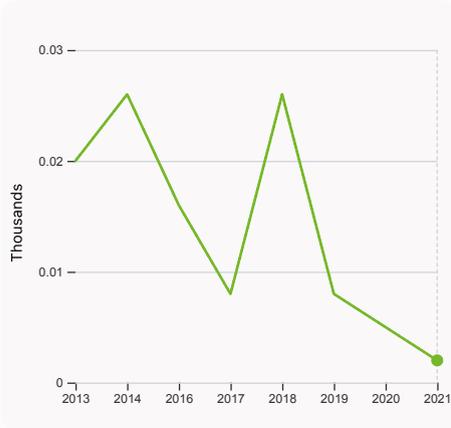


5.1.1 Knowledge-intensive employment, % was equal to 33.5% in 2021, down by 0.81 percentage points from the year prior – and equivalent to an indicator rank of 43.

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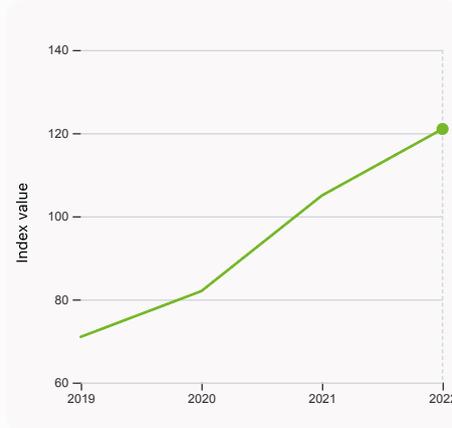


> Innovation outputs in Brunei Darussalam



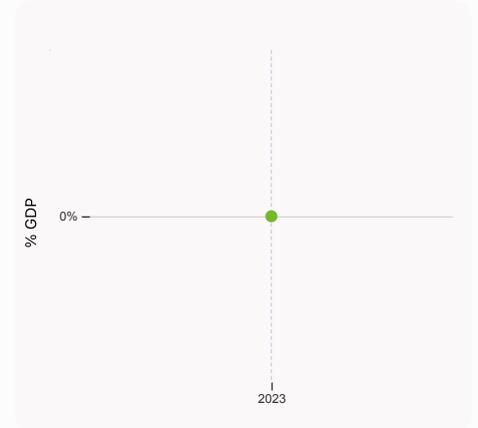
6.1.1 Patents by origin

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



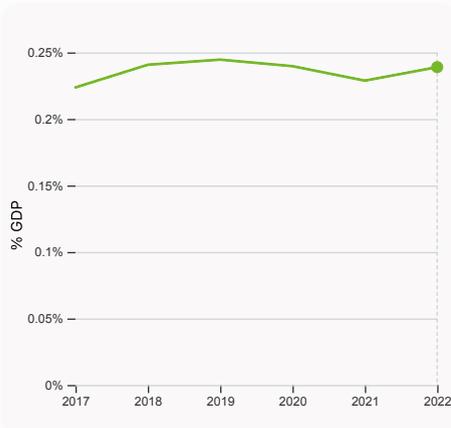
6.1.5 Citable documents H-index

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.



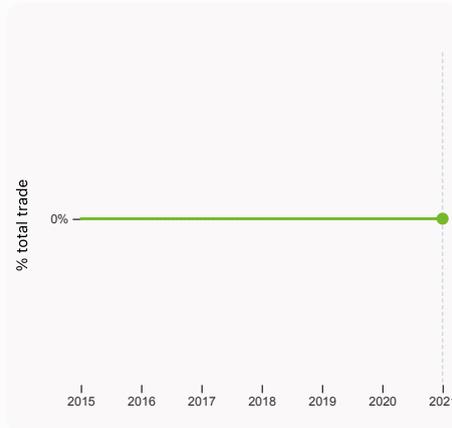
6.2.2 Unicorn valuation, % GDP

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



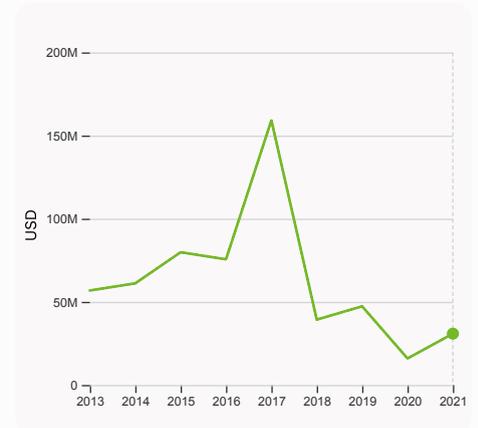
6.2.3 Software spending, % GDP

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

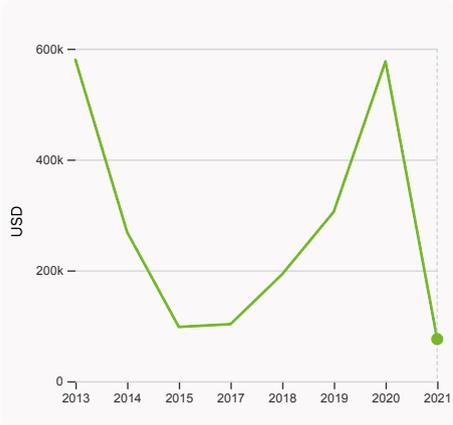
was equal to 0% total trade in 2021 – and equivalent to an indicator rank of 114.



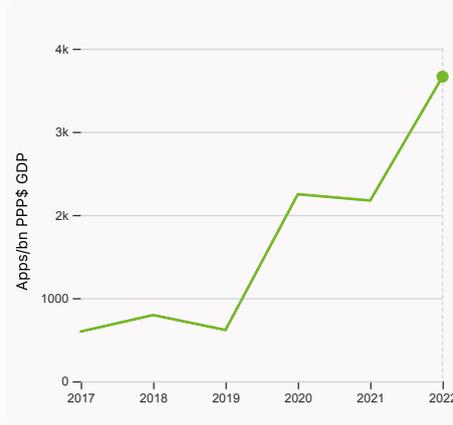
6.3.3 High-tech exports

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.

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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".

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GII 2023 rank

87

Brunei Darussalam

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				Score / Value Rank		
Institutions 72.9 20 ◆◆				Business sophistication 25.3 80 ◇		
1.1 Institutional environment 84.3 6 ◆◆				5.1 Knowledge workers 30.7 [68]		
1.1.1 Operational stability for businesses* 91.7 3 ◆◆				5.1.1 Knowledge-intensive employment, % 33.5 43		
1.1.2 Government effectiveness* 76.9 15 ◆◆				5.1.2 Firms offering formal training, % n/a n/a		
1.2 Regulatory environment 83.4 20 ◆◆				5.1.3 GERD performed by business, % GDP n/a n/a		
1.2.1 Regulatory quality* 67.9 31 ◆◆				5.1.4 GERD financed by business, % 0.0 98 ○◇		
1.2.2 Rule of law* 65.8 32 ◆◆				5.1.5 Females employed w/advanced degrees, % 13.0 58 ◇		
1.2.3 Cost of redundancy dismissal 8.0 1 ◆◆				5.2 Innovation linkages 21.4 66 ◇		
1.3 Business environment 50.9 [52]				5.2.1 University-industry R&D collaboration+ 53.5 47		
1.3.1 Policies for doing business+ 50.9 59				5.2.2 State of cluster development+ 41.7 63		
1.3.2 Entrepreneurship policies and culture+ n/a n/a				5.2.3 GERD financed by abroad, % GDP 0.0 91 ◇		
Human capital and research 33.2 57 ◇				5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP 0.0 43		
2.1 Education 52.2 63				5.2.5 Patent families/bn PPP\$ GDP 0.0 68		
2.1.1 Expenditure on education, % GDP 4.4 56				5.3 Knowledge absorption 23.7 111 ◇		
2.1.2 Government funding/pupil, secondary, % GDP/cap 24.0 26				5.3.1 Intellectual property payments, % total trade 0.2 93 ◇		
2.1.3 School life expectancy, years 14.0 72 ◇				5.3.2 High-tech imports, % total trade 2.8 130 ○◇		
2.1.4 PISA scales in reading, maths and science 423.1 53 ◇				5.3.3 ICT services imports, % total trade 1.1 80		
2.1.5 Pupil-teacher ratio, secondary 7.2 3 ◆◆				5.3.4 FDI net inflows, % GDP 3.0 47		
2.2 Tertiary education 37.9 39				5.3.5 Research talent, % in businesses n/a n/a		
2.2.1 Tertiary enrolment, % gross 32.0 86 ◇				Knowledge and technology outputs 9.8 126 ○◇		
2.2.2 Graduates in science and engineering, % 38.4 4 ◆◆				6.1 Knowledge creation 8.7 89 ◇		
2.2.3 Tertiary inbound mobility, % 3.7 59				6.1.1 Patents by origin/bn PPP\$ GDP 0.1 118 ◇		
2.3 Research and development (R&D) 9.5 63 ◇				6.1.2 PCT patents by origin/bn PPP\$ GDP 0.0 101 ○◇		
2.3.1 Researchers, FTE/mn pop. n/a n/a				6.1.3 Utility models by origin/bn PPP\$ GDP n/a n/a		
2.3.2 Gross expenditure on R&D, % GDP 0.3 80 ◇				6.1.4 Scientific and technical articles/bn PPP\$ GDP n/a n/a		
2.3.3 Global corporate R&D investors, top 3, mn US\$ 0.0 40 ○◇				6.1.5 Citable documents H-index 4.3 110 ◇		
2.3.4 QS university ranking, top 3* 23.5 46				6.2 Knowledge impact 17.1 116 ◇		
Infrastructure 45.2 54 ◇				6.2.1 Labor productivity growth, % -1.7 121 ◇		
3.1 Information and communication technologies (ICTs) 65.5 75 ◇				6.2.2 Unicorn valuation, % GDP 0.0 48 ○◇		
3.1.1 ICT access* 76.6 81 ◇				6.2.3 Software spending, % GDP 0.2 62		
3.1.2 ICT use* 84.6 41				6.2.4 High-tech manufacturing, % n/a n/a		
3.1.3 Government's online service* 54.4 86 ◇				6.3 Knowledge diffusion 3.5 128 ○◇		
3.1.4 E-participation* 46.5 80 ◇				6.3.1 Intellectual property receipts, % total trade 0.0 114 ○◇		
3.2 General infrastructure 48.3 20 ◆◆				6.3.2 Production and export complexity n/a n/a		
3.2.1 Electricity output, GWh/mn pop. 13,135.0 10 ◆◆				6.3.3 High-tech exports, % total trade 0.3 98 ◇		
3.2.2 Logistics performance* n/a n/a				6.3.4 ICT services exports, % total trade 0.0 129 ○◇		
3.2.3 Gross capital formation, % GDP 30.0 25 ◆◆				6.3.5 ISO 9001 quality/bn PPP\$ GDP 2.9 76		
3.3 Ecological sustainability 21.8 75 ◇				Creative outputs 4.4 [127]		
3.3.1 GDP/unit of energy use 6.9 99				7.1 Intangible assets 1.5 [128]		
3.3.2 Environmental performance* 45.4 55				7.1.1 Intangible asset intensity, top 15, % n/a n/a		
3.3.3 ISO 14001 environment/bn PPP\$ GDP 0.8 70 ◇				7.1.2 Trademarks by origin/bn PPP\$ GDP 6.0 118 ◇		
Market sophistication 22.7 [105]				7.1.3 Global brand value, top 5,000 n/a n/a		
4.1 Credit 13.5 [104]				7.1.4 Industrial designs by origin/bn PPP\$ GDP 0.0 120 ○◇		
4.1.1 Finance for startups and scaleups+ n/a n/a				7.2 Creative goods and services 0.2 [129]		
4.1.2 Domestic credit to private sector, % GDP 39.7 82 ◇				7.2.1 Cultural and creative services exports, % total trade 0.0 109 ○◇		
4.1.3 Loans from microfinance institutions, % GDP n/a n/a				7.2.2 National feature films/mn pop. 15-69 n/a n/a		
4.2 Investment 4.3 [84]				7.2.3 Entertainment and media market/th pop. 15-69 n/a n/a		
4.2.1 Market capitalization, % GDP n/a n/a				7.2.4 Creative goods exports, % total trade 0.0 116		
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP 0.1 47				7.3 Online creativity 14.4 101 ◇		
4.2.3 VC recipients, deals/bn PPP\$ GDP n/a n/a				7.3.1 Generic top-level domains (TLDs)/th pop. 15-69 8.1 46		
4.2.4 VC received, value, % GDP n/a n/a				7.3.2 Country-code TLDs/th pop. 15-69 1.1 86 ◇		
4.3 Trade, diversification, and market scale 50.2 86 ◇				7.3.3 GitHub commits/mn pop. 15-69 4.3 74 ◇		
4.3.1 Applied tariff rate, weighted avg., % 0.0 2 ◆◆				7.3.4 Mobile app creation/bn PPP\$ GDP 43.9 109 ◇		
4.3.2 Domestic industry diversification n/a n/a						
4.3.3 Domestic market scale, bn PPP\$ 31.9 124 ○						

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.



→ Data availability

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

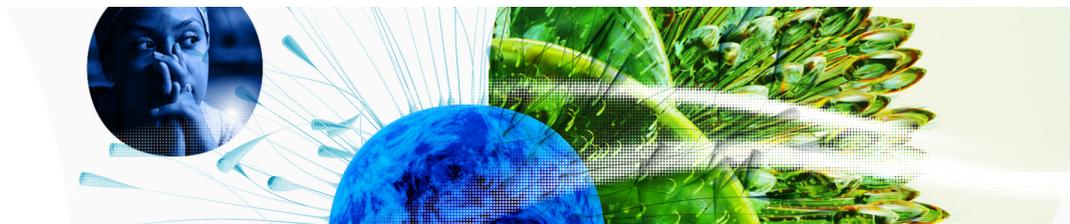


> Brunei Darussalam has missing data for nineteen indicators and outdated data for twelve indicators.

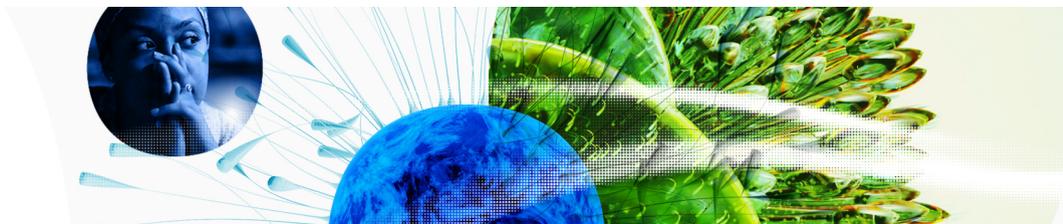
> Missing data for Brunei Darussalam

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 ÕÇô 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

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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



> Outdated data for Brunei Darussalam

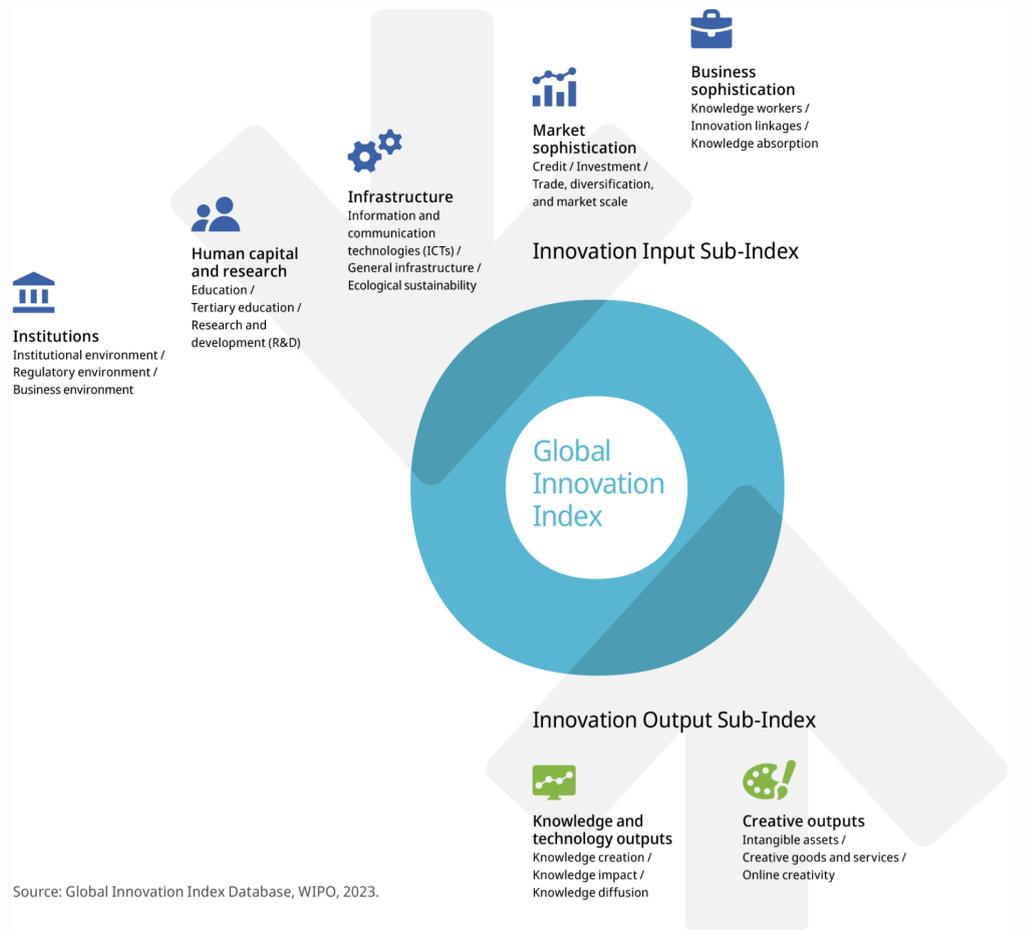
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
2.1.1	Expenditure on education, % GDP	2016	2021	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2016	2019	UNESCO Institute 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.



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.