



BRUNEI DARUSSALAM

92nd Brunei Darussalam ranks 92nd among the 132 economies featured in the GII 2022.

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.

The following table shows the rankings of Brunei Darussalam over the past three years, noting that 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 2022 is between ranks 82 and 121.

Rankings for Brunei Darussalam (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	71	39	113
2021	82	51	115
2022	92	53	129

- Brunei Darussalam performs better in innovation inputs than innovation outputs in 2022.
- This year Brunei Darussalam ranks 53rd in innovation inputs, lower than both 2021 and 2020.
- As for innovation outputs, Brunei Darussalam ranks 129th. This position is lower than both 2021 and 2020.

47th Brunei Darussalam ranks 47th among the 48 high-income group economies.

14th Brunei Darussalam ranks 14th among the 17 economies in South East Asia, East Asia, and Oceania.

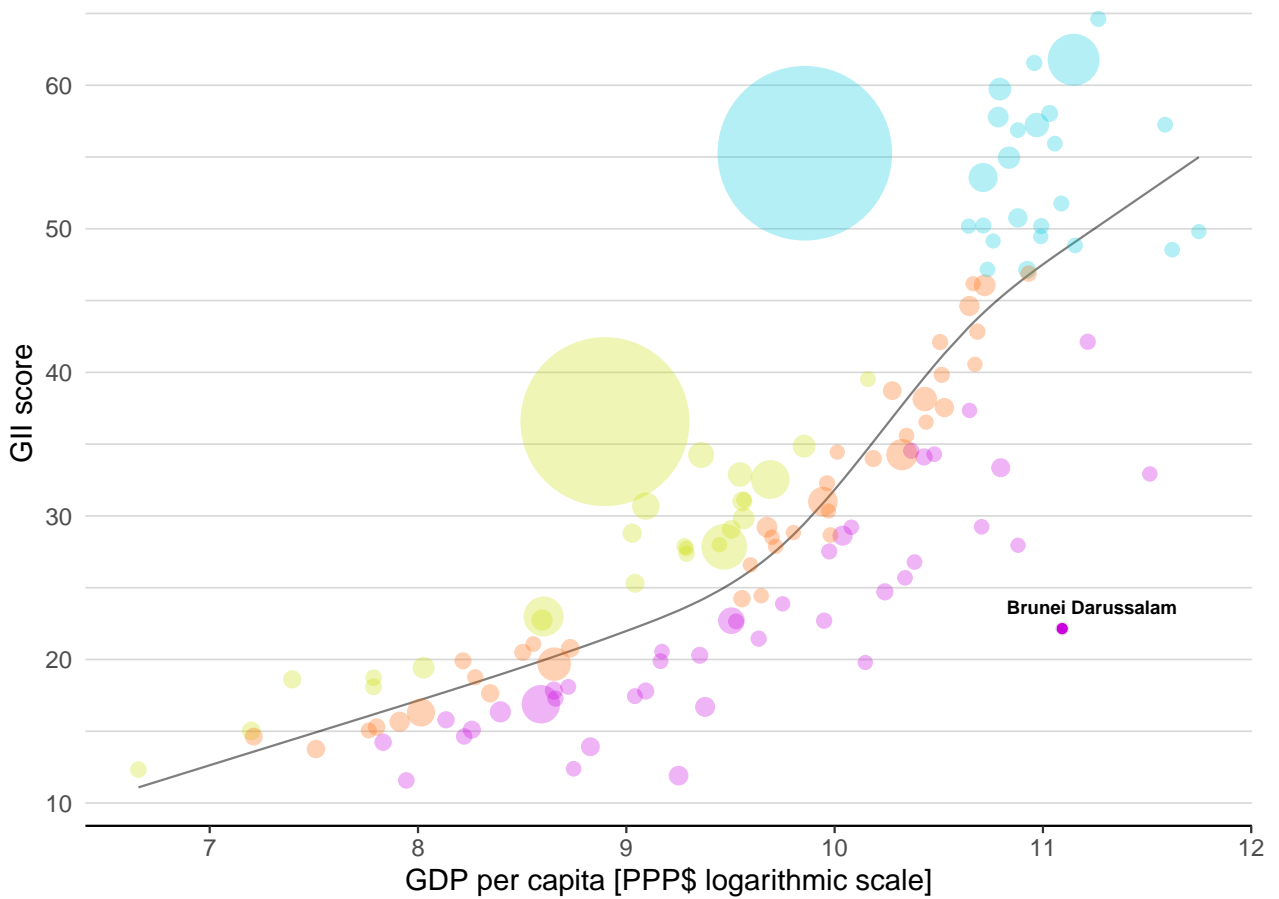


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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.

The positive relationship between innovation and development



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

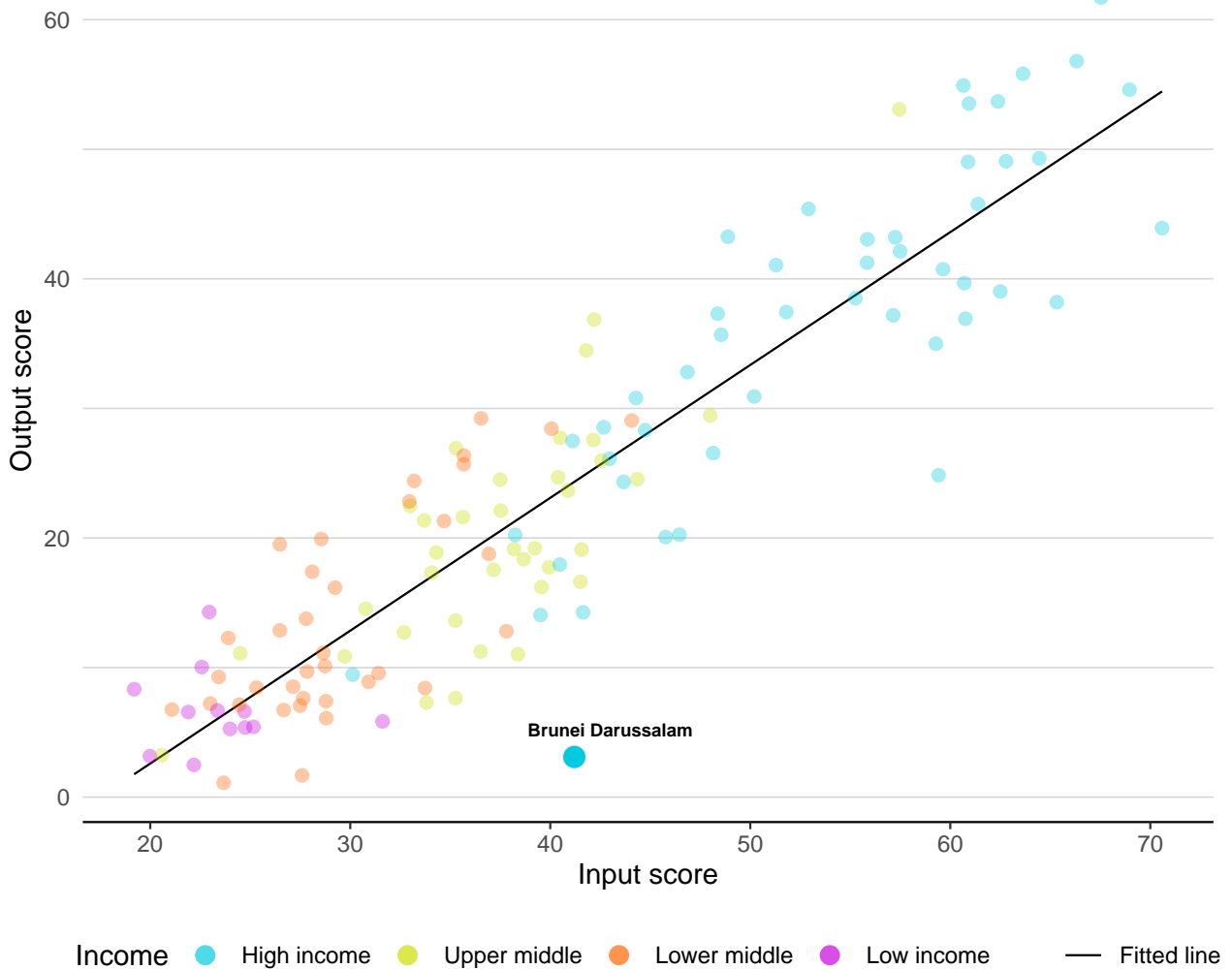


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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

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

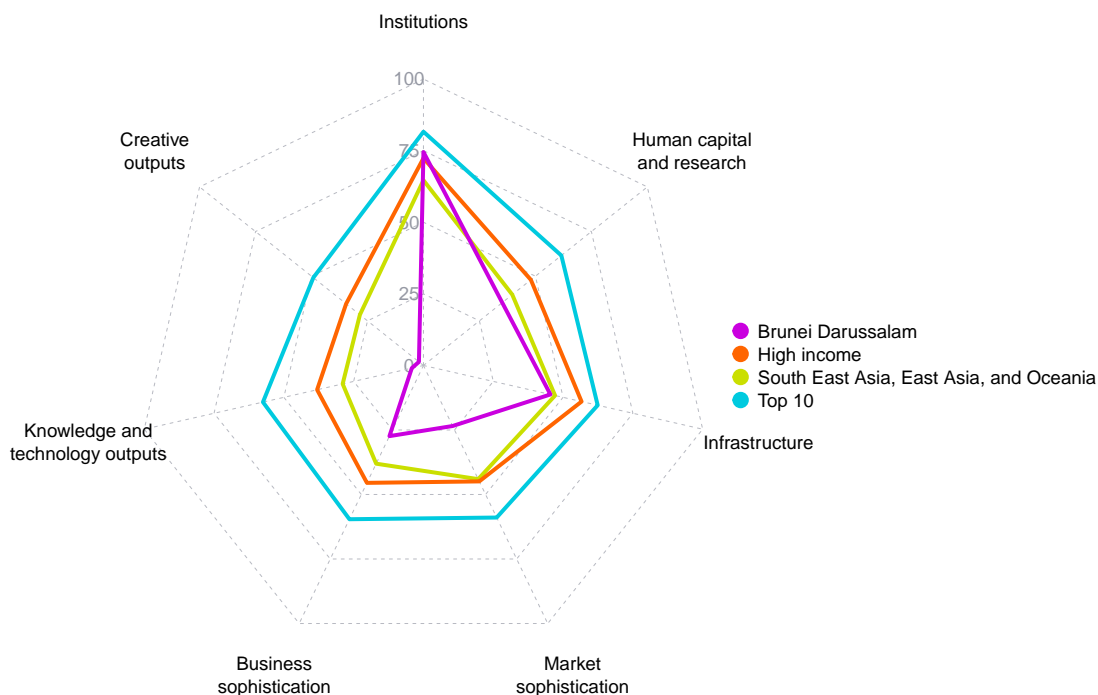
Innovation input to output performance





BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND SOUTH EAST ASIA, EAST ASIA, AND OCEANIA

The seven GII pillar scores for Brunei Darussalam



High-income group economies

Brunei Darussalam performs above the high-income group average in Institutions.

South East Asia, East Asia, and Oceania

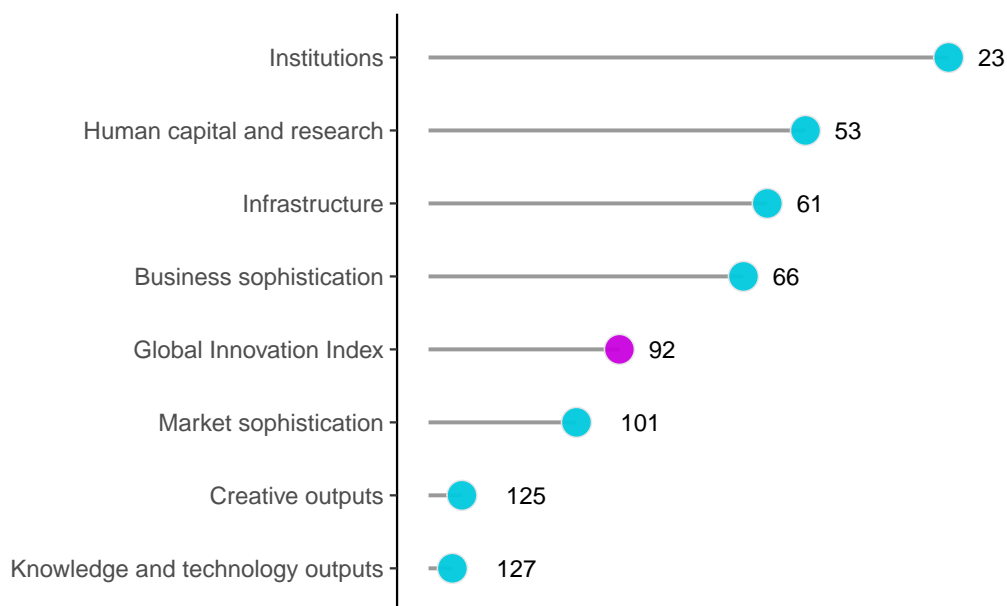
Brunei Darussalam performs above the regional average in Institutions.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Brunei Darussalam performs best in Institutions and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for Brunei Darussalam



Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Brunei Darussalam can be found at:

https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=BN.



INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Brunei Darussalam in the GII 2022.

Strengths and weaknesses for Brunei Darussalam

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.1.1	Political and operational stability	3	2.3.3	Global corporate R&D investors, top 3, mn USD	38
1.1.2	Government effectiveness	17	4.3.2	Domestic industry diversification	109
1.2.3	Cost of redundancy dismissal	1	4.3.3	Domestic market scale, bn PPP\$	123
2.1.5	Pupil-teacher ratio, secondary	4	5.1.4	GERD financed by business, %	100
2.2.2	Graduates in science and engineering, %	4	6.1.2	PCT patents by origin/bn PPP\$ GDP	101
3.2.1	Electricity output, GWh/mn pop.	11	6.2.5	High-tech manufacturing, %	106
3.2.3	Gross capital formation, % GDP	11	6.3.1	Intellectual property receipts, % total trade	113
4.3.1	Applied tariff rate, weighted avg., %	2	6.3.4	ICT services exports, % total trade	129
5.3.3	ICT services imports, % total trade	27	7.1.4	Industrial designs by origin/bn PPP\$ GDP	118
5.3.4	FDI net inflows, % GDP	27	7.2.1	Cultural and creative services exports, % total trade	106

Brunei Darussalam

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Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
129	53	High	SEAO	0.4	30.3	65,675

		Score/Value	Rank			Score/Value	Rank
Institutions		74.5	23 ●	Business sophistication		27.4	66 ◇
1.1	Political environment	87.6	8 ●◆	5.1	Knowledge workers	30.6	[66]
1.1.1	Political and operational stability*	94.5	3 ●◆	5.1.1	Knowledge-intensive employment, %	34.3	44
1.1.2	Government effectiveness*	80.7	17 ●	5.1.2	Firms offering formal training, %	n/a	n/a
1.2	Regulatory environment	84.5	22 ●	5.1.3	GERD performed by business, % GDP	n/a	n/a
1.2.1	Regulatory quality*	67.8	35	5.1.4	GERD financed by business, %	10.0	100 ○◇
1.2.2	Rule of law*	70.2	32	5.1.5	Females employed w/advanced degrees, %	12.1	63 ◇
1.2.3	Cost of redundancy dismissal	8.0	1 ●◆	5.2	Innovation linkages	22.9	67 ◇
1.3	Business environment	51.5	[54]	5.2.1	University-industry R&D collaboration†	51.0	40
1.3.1	Policies for doing business†	51.5	59	5.2.2	State of cluster development and depth†	48.4	63
1.3.2	Entrepreneurship policies and culture*	n/a	n/a	5.2.3	GERD financed by abroad, % GDP	0.0	92 ◇
Human capital and research		35.2	53 ◇	5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	37
2.1	Education	52.8	63 ◇	5.2.5	Patent families/bn PPP\$ GDP	0.0	70 ◇
2.1.1	Expenditure on education, % GDP	4.4	62 ◇	5.3	Knowledge absorption	28.6	72 ◇
2.1.2	Government funding/pupil, secondary, % GDP/cap	23.6	29 ◇	5.3.1	Intellectual property payments, % total trade	0.3	86 ◇
2.1.3	School life expectancy, years	14.0	72 ◇	5.3.2	High-tech imports, % total trade	5.2	116
2.1.4	PISA scales in reading, maths and science	423.1	53 ◇	5.3.3	ICT services imports, % total trade	2.4	27 ●
2.1.5	Pupil-teacher ratio, secondary	7.2	4 ●◆	5.3.4	FDI net inflows, % GDP	3.8	27 ●
2.2	Tertiary education	42.3	31	5.3.5	Research talent, % in businesses	n/a	n/a
2.2.1	Tertiary enrolment, % gross	32.0	83 ◇	Knowledge and technology outputs		4.2	127 ○◇
2.2.2	Graduates in science and engineering, %	38.4	4 ●◆	6.1	Knowledge creation	6.0	98 ◇
2.2.3	Tertiary inbound mobility, %	3.7	59	6.1.1	Patents by origin/bn PPP\$ GDP	0.2	102
2.3	Research and development (R&D)	10.4	55 ◇	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	81 ◇	6.1.4	Scientific and technical articles/bn PPP\$ GDP	14.1	68 ◇
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38 ○◇	6.1.5	Citable documents H-index	3.3	114 ◇
2.3.4	QS university ranking, top 3*	23.4	44	6.2	Knowledge impact	4.5	[124]
Infrastructure		45.5	61 ◇	6.2.1	Labor productivity growth, %	n/a	n/a
3.1	Information and communication technologies (ICTs)	68.9	78 ◇	6.2.2	New businesses/th pop. 15–64	1.0	81
3.1.1	ICT access*	83.3	76 ◇	6.2.3	Software spending, % GDP	n/a	n/a
3.1.2	ICT use*	74.0	43	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	2.7	77
3.1.3	Government's online service*	63.5	80 ◇	6.2.5	High-tech manufacturing, %	3.3	106 ○◇
3.1.4	E-participation*	54.8	93 ◇	6.3	Knowledge diffusion	2.0	129 ○◇
3.2	General infrastructure	46.1	26 ●	6.3.1	Intellectual property receipts, % total trade	0.0	113 ○◇
3.2.1	Electricity output, GWh/mn pop.	11,465.1	11 ●	6.3.2	Production and export complexity	n/a	n/a
3.2.2	Logistics performance*	30.7	78 ◇	6.3.3	High-tech exports, % total trade	0.2	103 ◇
3.2.3	Gross capital formation, % GDP	33.9	11 ●◆	6.3.4	ICT services exports, % total trade	0.1	129 ○◇
3.3	Ecological sustainability	21.4	87 ◇	Creative outputs		2.0	[125]
3.3.1	GDP/unit of energy use	6.5	106	7.1	Intangible assets	2.1	[122]
3.3.2	Environmental performance*	45.7	55	7.1.1	Intangible asset intensity, top 15, %	n/a	n/a
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.7	77 ◇	7.1.2	Trademarks by origin/bn PPP\$ GDP	8.2	114 ◇
Market sophistication		23.5	[101]	7.1.3	Global brand value, top 5,000, % GDP	n/a	n/a
4.1	Credit	13.5	[104]	7.1.4	Industrial designs by origin/bn PPP\$ GDP	0.0	118 ○◇
4.1.1	Finance for startups and scaleups*	n/a	n/a	7.2	Creative goods and services	0.9	[123]
4.1.2	Domestic credit to private sector, % GDP	39.7	79 ◇	7.2.1	Cultural and creative services exports, % total trade	0.0	106 ○◇
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	n/a	[n/a]	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	Printing and other media, % manufacturing	n/a	n/a
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	n/a	n/a	7.2.5	Creative goods exports, % total trade	0.1	89
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	n/a	n/a	7.3	Online creativity	3.0	73 ◇
4.2.4	Venture capital received, value, % GDP	n/a	n/a	7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	6.8	47
4.3	Trade, diversification, and market scale	33.4	111 ◇	7.3.2	Country-code TLDs/th pop. 15–69	1.1	83 ◇
4.3.1	Applied tariff rate, weighted avg., %	0.0	2 ●◆	7.3.3	GitHub commit pushes received/mn pop. 15–69	3.8	65 ◇
4.3.2	Domestic industry diversification	0.0	109 ○◇	7.3.4	Mobile app creation/bn PPP\$ GDP	0.0	102
4.3.3	Domestic market scale, bn PPP\$	30.3	123 ○				

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/global_innovation_index/en/2022. 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.

Missing data for Brunei Darussalam

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.3.1	Researchers, FTE/mn pop.	n/a	2020	UNESCO Institute for Statistics
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
4.1.3	Loans from microfinance institutions, % GDP	n/a	2020	International Monetary Fund, Financial Access Survey (FAS)
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	n/a	2021	Refinitiv
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	n/a	2021	Refinitiv
4.2.4	Venture capital received, value, % GDP	n/a	2021	Refinitiv
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
5.1.3	GERD performed by business, % GDP	n/a	2020	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization
6.2.1	Labor productivity growth, %	n/a	2021	The Conference Board
6.2.3	Software spending, % GDP	n/a	2021	IHS Markit
6.3.2	Production and export complexity	n/a	2019	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
7.1.3	Global brand value, top 5,000, % GDP	n/a	2021	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2019	OMDIA
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO
7.2.4	Printing and other media, % manufacturing	n/a	2019	United Nations Industrial Development Organization

Outdated data for Brunei Darussalam

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2020	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2016	2018	UNESCO Institute for Statistics

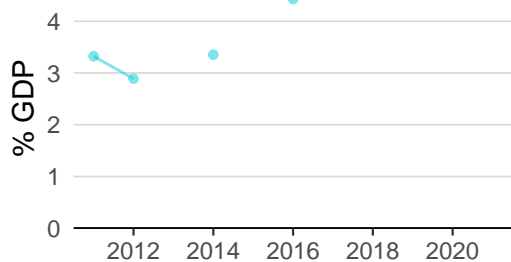
Code	Indicator name	Economy year	Model year	Source
2.3.2	Gross expenditure on R&D, % GDP	2018	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2019	2020	International Energy Agency
4.3.2	Domestic industry diversification	2012	2019	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2020	2021	International Labour Organization
5.1.4	GERD financed by business, %	2018	2019	UNESCO Institute for Statistics
5.1.5	Females employed w/advanced degrees, %	2020	2021	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2018	2019	UNESCO Institute for Statistics
6.2.5	High-tech manufacturing, %	2012	2019	United Nations Industrial Development Organization
7.1.4	Industrial designs by origin/bn PPP\$ GDP	2017	2020	World Intellectual Property Organization
7.2.5	Creative goods exports, % total trade	2018	2020	United Nations Comtrade Database



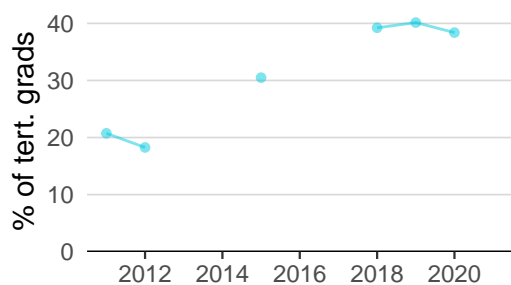
BRUNEI DARUSSALAM'S INNOVATION SYSTEM

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

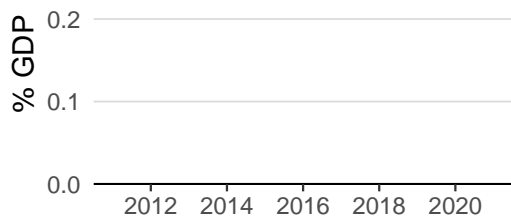
Innovation inputs



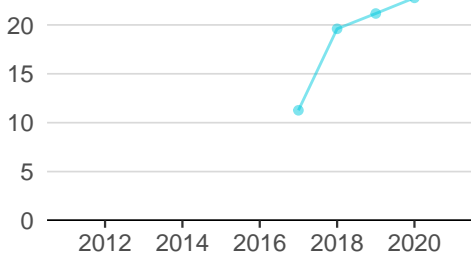
2.1.1 Expenditure on education was equal to 4.4% GDP in 2016 and equivalent to an indicator rank of 62.



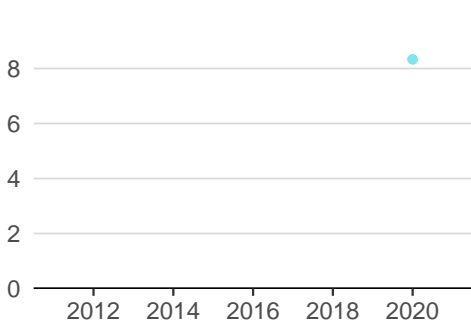
2.2.2 Graduates in science and engineering was equal to 38.4% of tert. grads in 2020—down by 4 percentage points from the year prior—and equivalent to an indicator rank of 4.



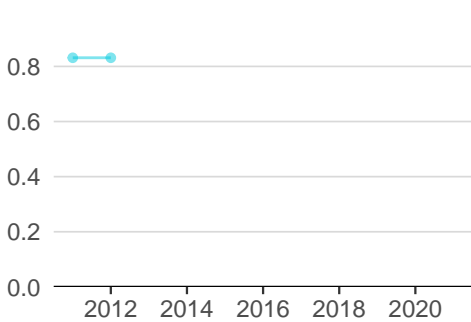
2.3.2 Gross expenditure on R&D was equal to 0.3% GDP in 2018 and equivalent to an indicator rank of 81.



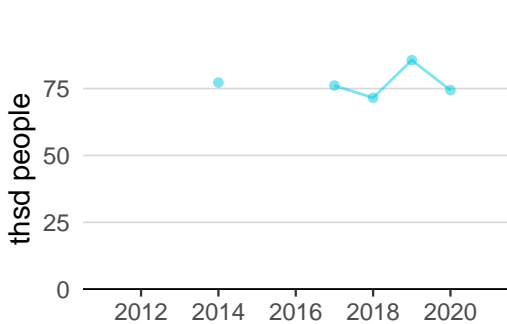
2.3.4 QS university ranking was equal to 23.4 in 2021—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 44.



3.1.1 ICT access was equal to 8.3 in 2020 and equivalent to an indicator rank of 76.

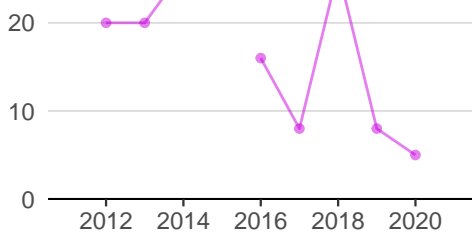


4.3.2 Domestic industry diversification was equal to 0.8 in 2012—effectively unchanged from the year prior—and equivalent to an indicator rank of 109.

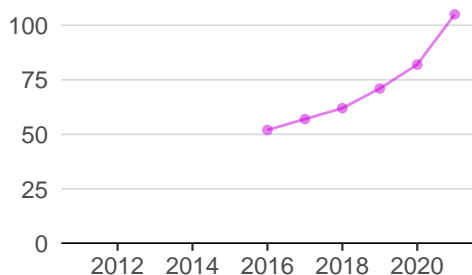


5.1.1 Knowledge-intensive employment was equal to 74.4 thsd people in 2020—down by 13 percentage points from the year prior—and equivalent to an indicator rank of 44.

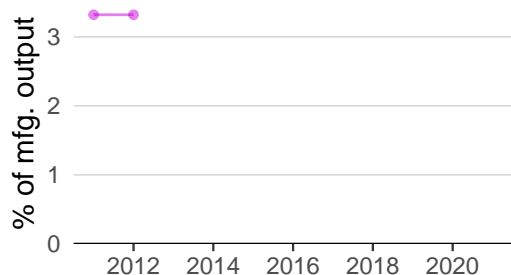
Innovation outputs



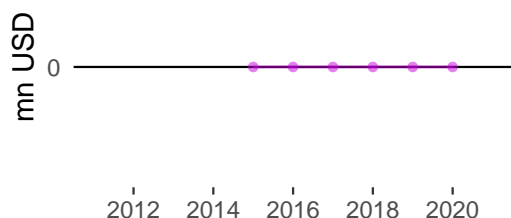
6.1.1 Patents by origin was equal to 5.0 in 2020—down by 38 percentage points from the year prior—and equivalent to an indicator rank of 102.



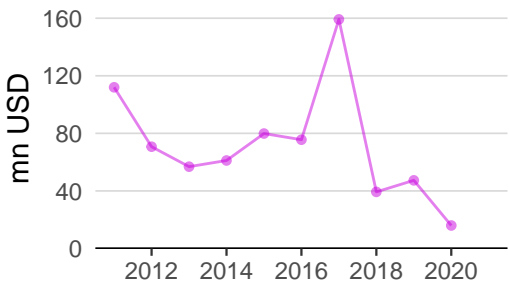
6.1.5 Citable documents H-index was equal to 105.0 in 2021—up by 28 percentage points from the year prior—and equivalent to an indicator rank of 114.



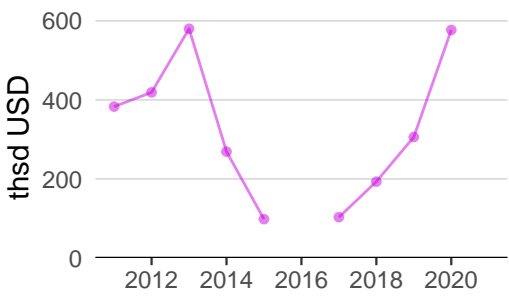
6.2.5 High-tech manufacturing was equal to 3.3% of mfg. output in 2012—effectively unchanged from the year prior—and equivalent to an indicator rank of 106.



6.3.1 Intellectual property receipts was equal to 0.0 mn USD in 2020—effectively unchanged from the year prior—and equivalent to an indicator rank of 113.



6.3.3 High-tech exports was equal to 16.0 mn USD in 2020—down by 66 percentage points from the year prior—and equivalent to an indicator rank of 103.



7.2.1 Cultural and creative services exports was equal to 577.0 thsd USD in 2020—up by 89 percentage points from the year prior—and equivalent to an indicator rank of 106.

BRUNEI DARUSSALAM'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
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No observations

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard>).

2.3.4 QS university ranking

University	Score	Rank
UNIVERSITI BRUNEI DARUSSALAM	38.6	250
UNIVERSITI TEKNOLOGI BRUNEI	31.7	344=

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2022>).

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".

7.1.1 Intangible asset intensity, top 15

Firm	Rank
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No observations

Source: Brand Finance (<https://brandirectory.com/reports/gift-2021>).

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank
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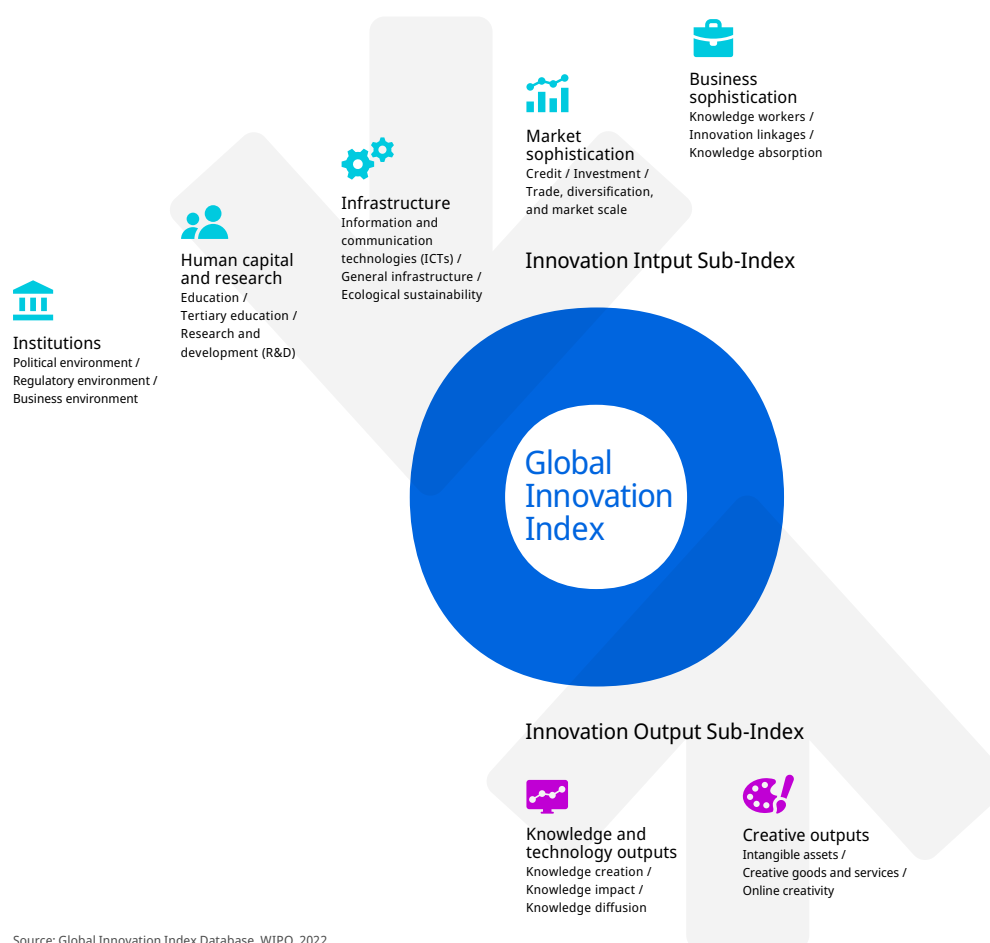
No observations

Source: Brand Finance (<https://brandirectory.com>).

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.