



# Global Innovation Index 2021



## BRUNEI DARUSSALAM

**82nd**

Brunei Darussalam ranks 82nd among the 132 economies featured in the GII 2021.

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 2021 is between ranks 77 and 111.

### Rankings for Brunei Darussalam (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	82	51	115
2020	71	39	113
2019	71	35	120

- Brunei Darussalam performs better in innovation inputs than innovation outputs in 2021.
- This year Brunei Darussalam ranks 51st in innovation inputs, lower than both 2020 and 2019.
- As for innovation outputs, Brunei Darussalam ranks 115th. This position is lower than last year but higher than 2019.

**49th**

Brunei Darussalam ranks 49th among the 51 high-income group economies.

**13th**

Brunei Darussalam ranks 13th among the 17 economies in South East Asia, East Asia, and Oceania.

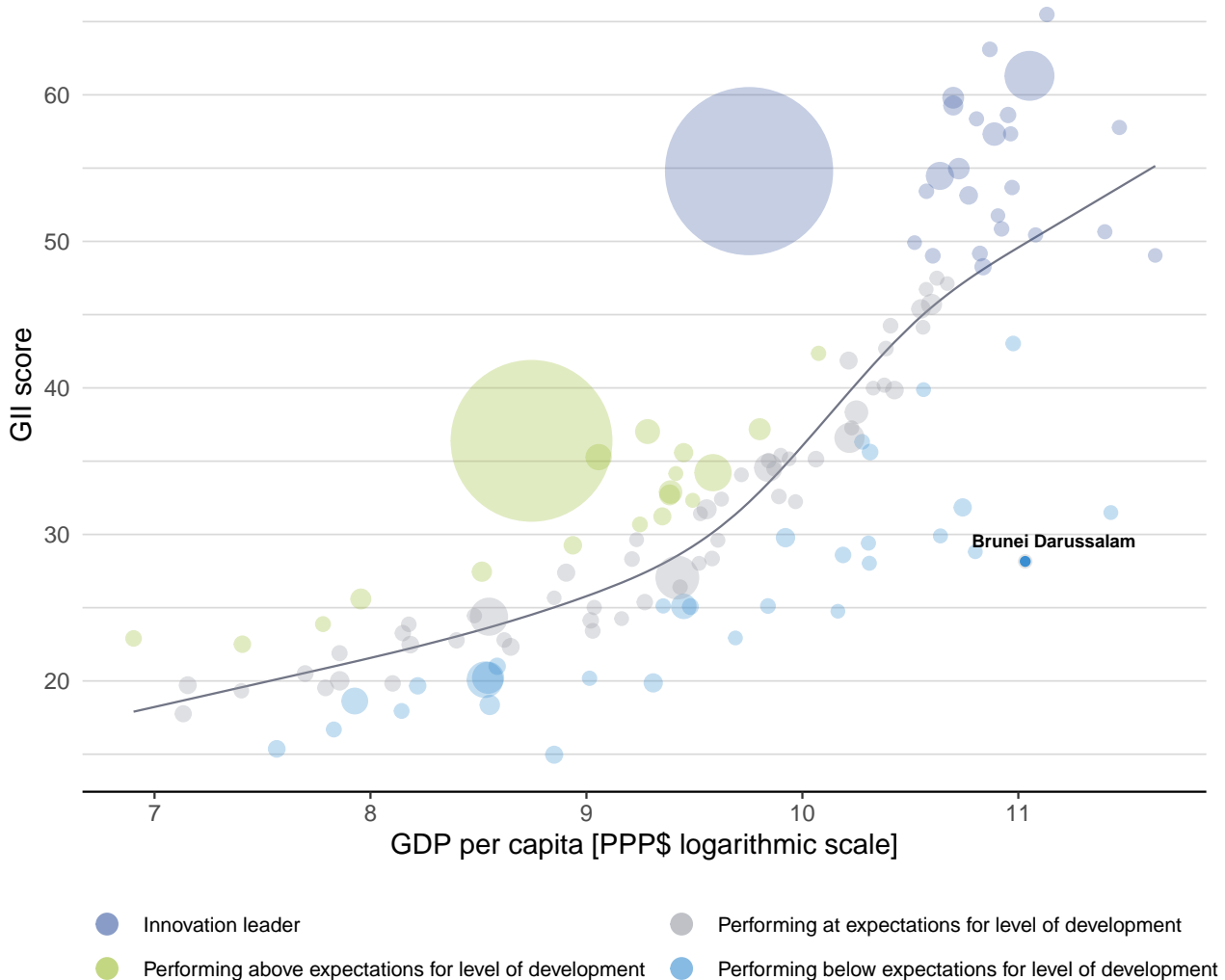


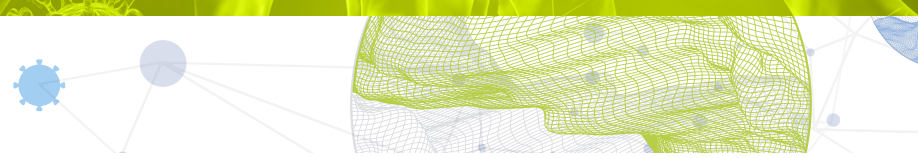
## EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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



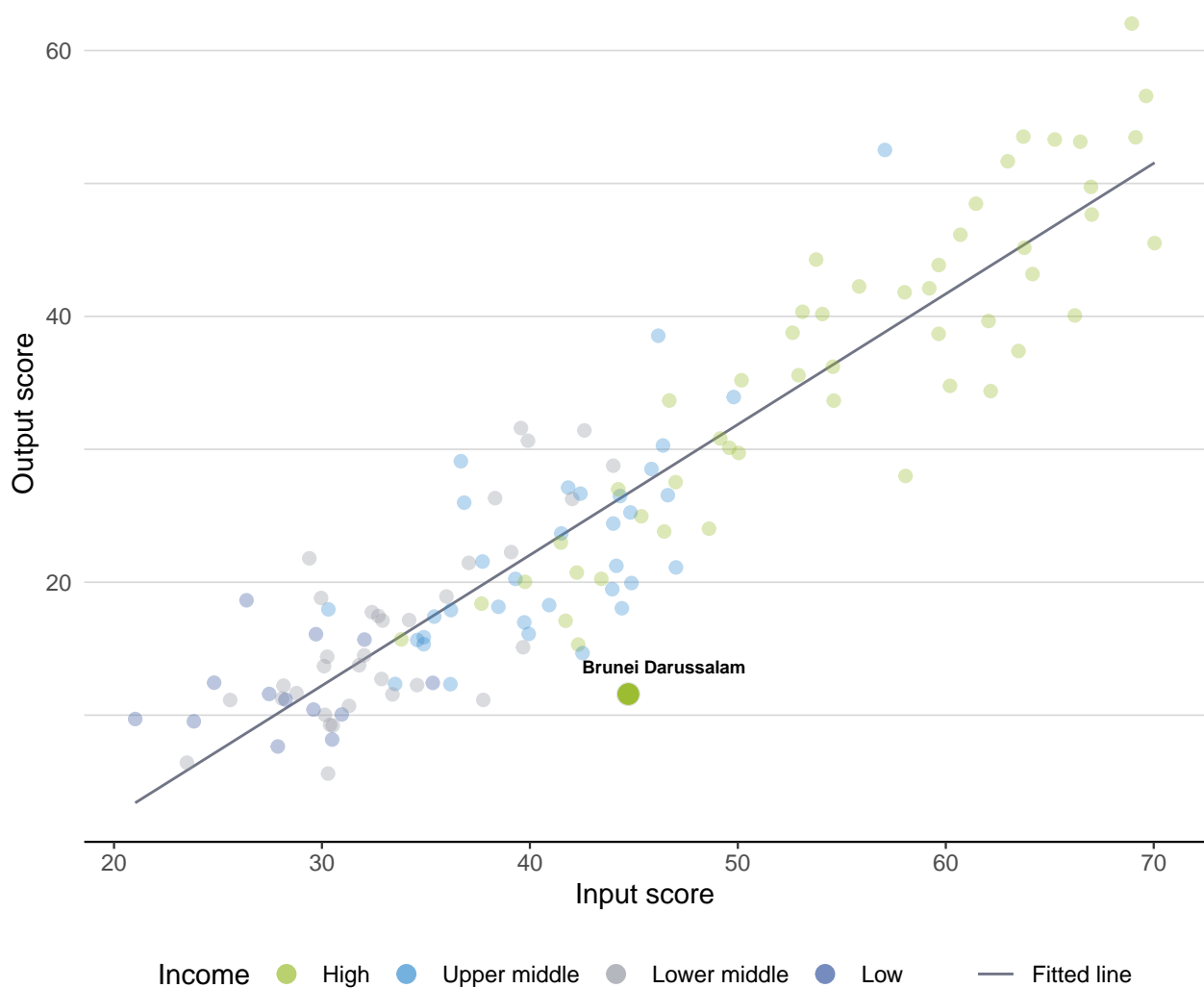


## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

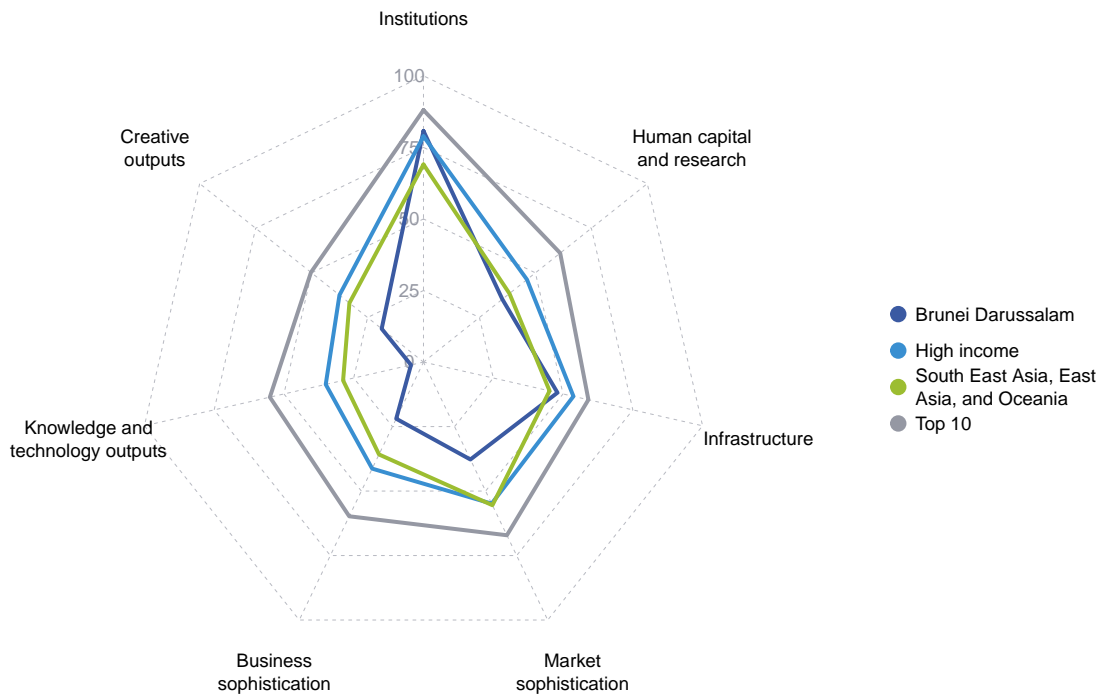
**Innovation input to output performance**





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

## The seven GII pillar scores for Brunei Darussalam

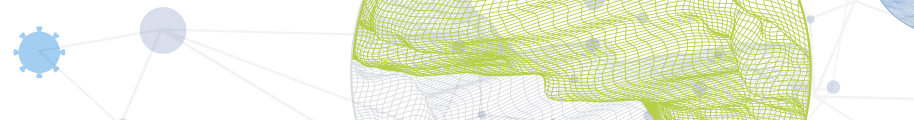


### High-income group economies

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

### South East Asia, East Asia, and Oceania

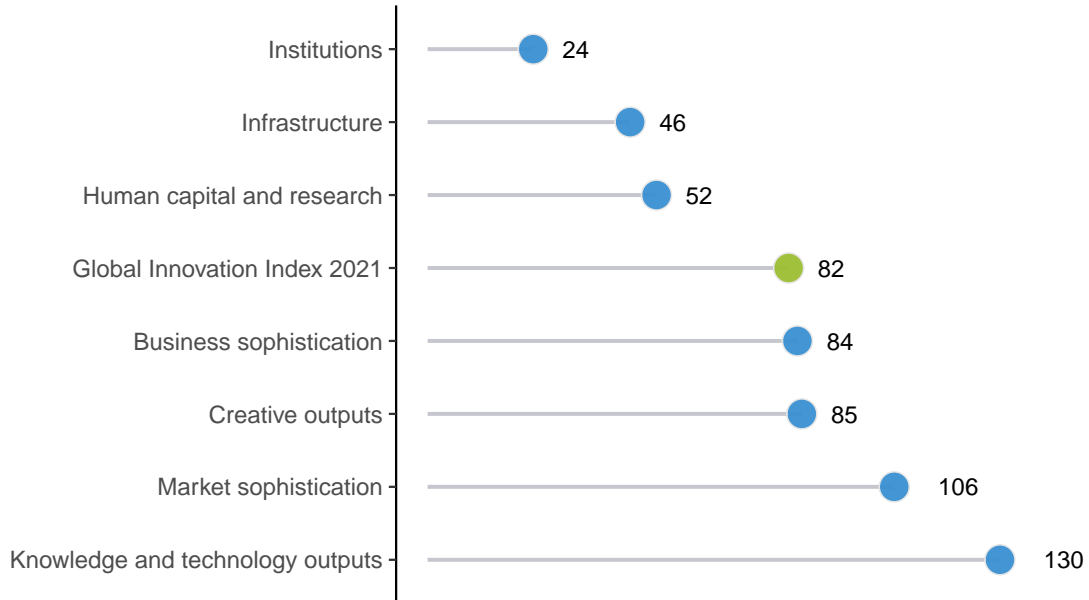
Brunei Darussalam performs above the regional average in two pillars, namely: Institutions; and, Infrastructure.



## OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 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 one.










## INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Brunei Darussalam in the GII 2021.

### Strengths and weaknesses for Brunei Darussalam

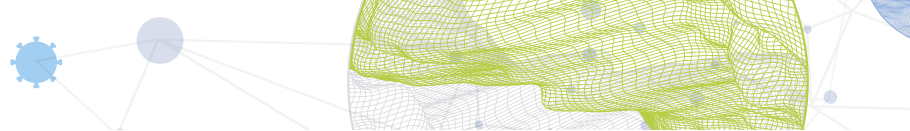
Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.1	Political environment	16	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
1.1.1	Political and operational stability	2	4.3	Trade, diversification, and market scale	130
1.2.3	Cost of redundancy dismissal	1	4.3.2	Domestic industry diversification	112
1.3.1	Ease of starting a business	15	4.3.3	Domestic market scale, bn PPP\$	123
2.1.5	Pupil-teacher ratio, secondary	11	5.1.4	GERD financed by business, %	102
2.2	Tertiary education	20	5.2.3	GERD financed by abroad, % GDP	96
2.2.2	Graduates in science and engineering, %	4	5.3.2	High-tech imports, % total trade	121
3.2	General infrastructure	8	6.2.5	High-tech manufacturing, %	107
3.2.1	Electricity output, GWh/mn pop.	14	6.3.4	ICT services exports, % total trade	130
3.2.3	Gross capital formation, % GDP	3	7.1.3	Industrial designs by origin/bn PPP\$ GDP	115
4.1	Credit	21	7.2.1	Cultural and creative services exports, % total trade	110
4.1.1	Ease of getting credit	1			
4.3.1	Applied tariff rate, weighted avg., %	2			
7.3.3	Wikipedia edits/mn pop. 15–69	22			

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
115	51	High	SEAO	0.4	28.5	61,816	71

	Score/ Value	Rank		Score/ Value	Rank
 <b>Institutions</b>	80.7	24	 <b>Business sophistication</b>	22.0	84
<b>1.1 Political environment</b>	84.8	16 ●	<b>5.1 Knowledge workers</b>	32.4	[63]
1.1.1 Political and operational stability*	94.6	2 ●◆	5.1.1 Knowledge-intensive employment, %	38.6	30
1.1.2 Government effectiveness*	79.9	23	5.1.2 Firms offering formal training, %	n/a	n/a
<b>1.2 Regulatory environment</b>	80.7	30	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	60.1	42	5.1.4 GERD financed by business, %	0.0	102 ○◇
1.2.2 Rule of law*	62.9	38	5.1.5 Females employed w/advanced degrees, %	12.8	58
1.2.3 Cost of redundancy dismissal	8.0	1 ●◆	<b>5.2 Innovation linkages</b>	17.4	92 ◇
<b>1.3 Business environment</b>	76.6	43	5.2.1 University-industry R&D collaboration†	⊙ 39.4	80 ◇
1.3.1 Ease of starting a business*	94.9	15 ●	5.2.2 State of cluster development and depth†	⊙ 44.2	80 ◇
1.3.2 Ease of resolving insolvency*	58.2	54	5.2.3 GERD financed by abroad, % GDP	0.0	96 ○◇
			5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	42
			5.2.5 Patent families/bn PPP\$ GDP	0.1	57
 <b>Human capital and research</b>	35.2	52	<b>5.3 Knowledge absorption</b>	16.0	114 ◇
<b>2.1 Education</b>	50.7	66	5.3.1 Intellectual property payments, % total trade	0.3	78
2.1.1 Expenditure on education, % GDP	⊙ 4.4	59	5.3.2 High-tech imports, % total trade	3.4	121 ○◇
2.1.2 Government funding/pupil, secondary, % GDP/cap	⊙ 23.6	21	5.3.3 ICT services imports, % total trade	1.0	77
2.1.3 School life expectancy, years	14.1	71 ◇	5.3.4 FDI net inflows, % GDP	3.5	40
2.1.4 PISA scales in reading, maths and science	423.1	53 ◇	5.3.5 Research talent, % in businesses	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	8.2	11 ●◆	 <b>Knowledge and technology outputs</b>	4.5	[130]
<b>2.2 Tertiary education</b>	45.6	20 ●	<b>6.1 Knowledge creation</b>	6.4	98 ◇
2.2.1 Tertiary enrolment, % gross	31.5	84 ◇	6.1.1 Patents by origin/bn PPP\$ GDP	0.2	90
2.2.2 Graduates in science and engineering, %	40.1	4 ●◆	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0	78
2.2.3 Tertiary inbound mobility, %	3.4	64	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
<b>2.3 Research and development (R&amp;D)</b>	9.4	62 ◇	6.1.4 Scientific and technical articles/bn PPP\$ GDP	11.1	78 ◇
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.5 Citable documents H-index	3.6	117 ◇
2.3.2 Gross expenditure on R&D, % GDP	⊙ 0.3	84 ◇	<b>6.2 Knowledge impact</b>	5.7	[126]
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0	41 ○◇	6.2.1 Labor productivity growth, %	n/a	n/a
2.3.4 QS university ranking, top 3*	22.8	46	6.2.2 New businesses/th pop. 15–64	2.4	53
			6.2.3 Software spending, % GDP	n/a	n/a
			6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	3.0	77
			6.2.5 High-tech manufacturing, %	⊙ 3.3	107 ○◇
 <b>Infrastructure</b>	48.0	46	<b>6.3 Knowledge diffusion</b>	1.4	[129]
<b>3.1 Information and communication technologies (ICTs)</b>	64.9	70 ◇	6.3.1 Intellectual property receipts, % total trade	n/a	n/a
3.1.1 ICT access*	69.4	62 ◇	6.3.2 Production and export complexity	n/a	n/a
3.1.2 ICT use*	71.9	43	6.3.3 High-tech exports, % total trade	0.7	85
3.1.3 Government's online service*	63.5	80 ◇	6.3.4 ICT services exports, % total trade	0.0	130 ○◇
3.1.4 E-participation*	54.8	94 ◇	 <b>Creative outputs</b>	18.7	85 ◇
<b>3.2 General infrastructure</b>	51.9	8 ●◆	<b>7.1 Intangible assets</b>	21.5	94 ◇
3.2.1 Electricity output, GWh/mn pop.	10,009.3	14 ●	7.1.1 Trademarks by origin/bn PPP\$ GDP	9.5	113 ◇
3.2.2 Logistics performance*	30.6	79 ◇	7.1.2 Global brand value, top 5,000, % GDP	n/a	n/a
3.2.3 Gross capital formation, % GDP	48.4	3 ●◆	7.1.3 Industrial designs by origin/bn PPP\$ GDP	⊙ 0.0	115 ○
<b>3.3 Ecological sustainability</b>	27.1	70 ◇	7.1.4 ICTs and organizational model creation†	47.5	90 ◇
3.3.1 GDP/unit of energy use	8.9	82	<b>7.2 Creative goods and services</b>	2.6	[114]
3.3.2 Environmental performance*	54.8	44	7.2.1 Cultural and creative services exports, % total trade	0.0	110 ○◇
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.9	70	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 Printing and other media, % manufacturing	⊙ 0.5	88
			7.2.5 Creative goods exports, % total trade	⊙ 0.1	90
 <b>Market sophistication</b>	37.8	106 ◇	<b>7.3 Online creativity</b>	29.2	36
<b>4.1 Credit</b>	56.5	21 ●	7.3.1 Generic top-level domains (TLDs)/th pop. 15–69	7.3	45
4.1.1 Ease of getting credit*	100.0	1 ●◆	7.3.2 Country-code TLDs/th pop. 15–69	0.9	88 ◇
4.1.2 Domestic credit to private sector, % GDP	35.7	87 ◇	7.3.3 Wikipedia edits/mn pop. 15–69	75.8	22 ●
4.1.3 Microfinance gross loans, % GDP	n/a	n/a	7.3.4 Mobile app creation/bn PPP\$ GDP	n/a	n/a
<b>4.2 Investment</b>	23.9	[94]			
4.2.1 Ease of protecting minority investors*	40.0	110 ◇			
4.2.2 Market capitalization, % GDP	n/a	n/a			
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	0.0	46			
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	n/a	n/a			
<b>4.3 Trade, diversification, and market scale</b>	32.8	130 ○◇			
4.3.1 Applied tariff rate, weighted avg., %	0.0	2 ●◆			
4.3.2 Domestic industry diversification	⊙ 0.0	112 ○◇			
4.3.3 Domestic market scale, bn PPP\$	28.5	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 Appendix IV for details, including the year of the data, at <http://globalinnovationindex.org>. 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 data that are either missing or outdated for Brunei Darussalam.

### Missing data for Brunei Darussalam

Code	Indicator name	Economy year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
4.2.4	Venture capital recipients, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
5.1.2	Firms offering formal training, %	n/a	2019	World Bank
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
6.2.1	Labor productivity growth, %	n/a	2020	The Conference Board
6.2.3	Software spending, % GDP	n/a	2020	IHS Markit
6.3.1	Intellectual property receipts, % total trade	n/a	2019	World Trade Organization
6.3.2	Production and export complexity	n/a	2018	Growth Lab, Harvard University
7.1.2	Global brand value, top 5,000, % GDP	n/a	2020	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2020	App Annie





## Outdated data for Brunei Darussalam

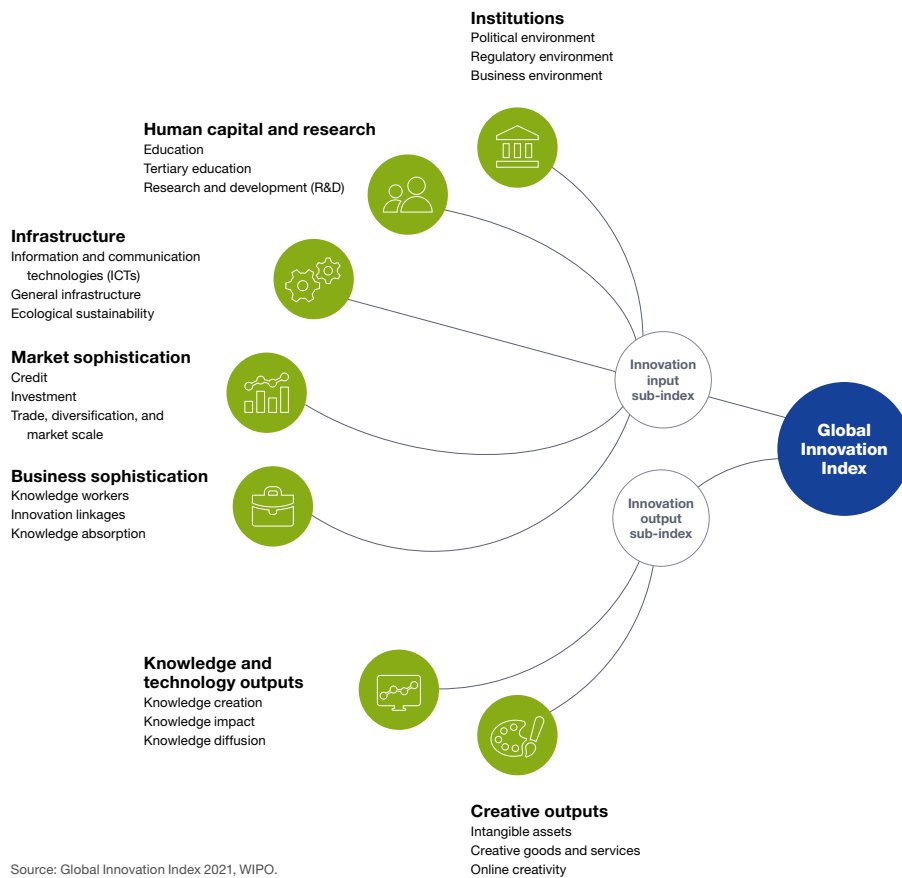
Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2017	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2016	2017	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.3.2	Domestic industry diversification	2012	2018	United Nations Industrial Development Organization
5.2.1	University-industry R&D collaboration	2019	2020	World Economic Forum
5.2.2	State of cluster development and depth	2019	2020	World Economic Forum
6.2.5	High-tech manufacturing, %	2012	2018	United Nations Industrial Development Organization
7.1.3	Industrial designs by origin/bn PPP\$ GDP	2017	2019	World Intellectual Property Organization
7.2.4	Printing and other media, % manufacturing	2010	2018	United Nations Industrial Development Organization
7.2.5	Creative goods exports, % total trade	2018	2019	United Nations, COMTRADE



## 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.