

BRUNEI DARUSSALAM

71st

Brunei Darussalam ranks 71st among the 131 economies featured in the GII 2020.

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 2020 is between ranks 67 and 90.

Rankings of Brunei Darussalam (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	71	39	113
2019	71	35	120
2018	67	37	112

- Brunei Darussalam performs better in innovation inputs than innovation outputs in 2020.
- This year Brunei Darussalam ranks 39th in innovation inputs, lower than last year and lower compared to 2018.
- As for innovation outputs, Brunei Darussalam ranks 113th. This position is higher than last year and lower compared to 2018.

44th

Brunei Darussalam ranks 44th among the 49 high-income group economies.

13th

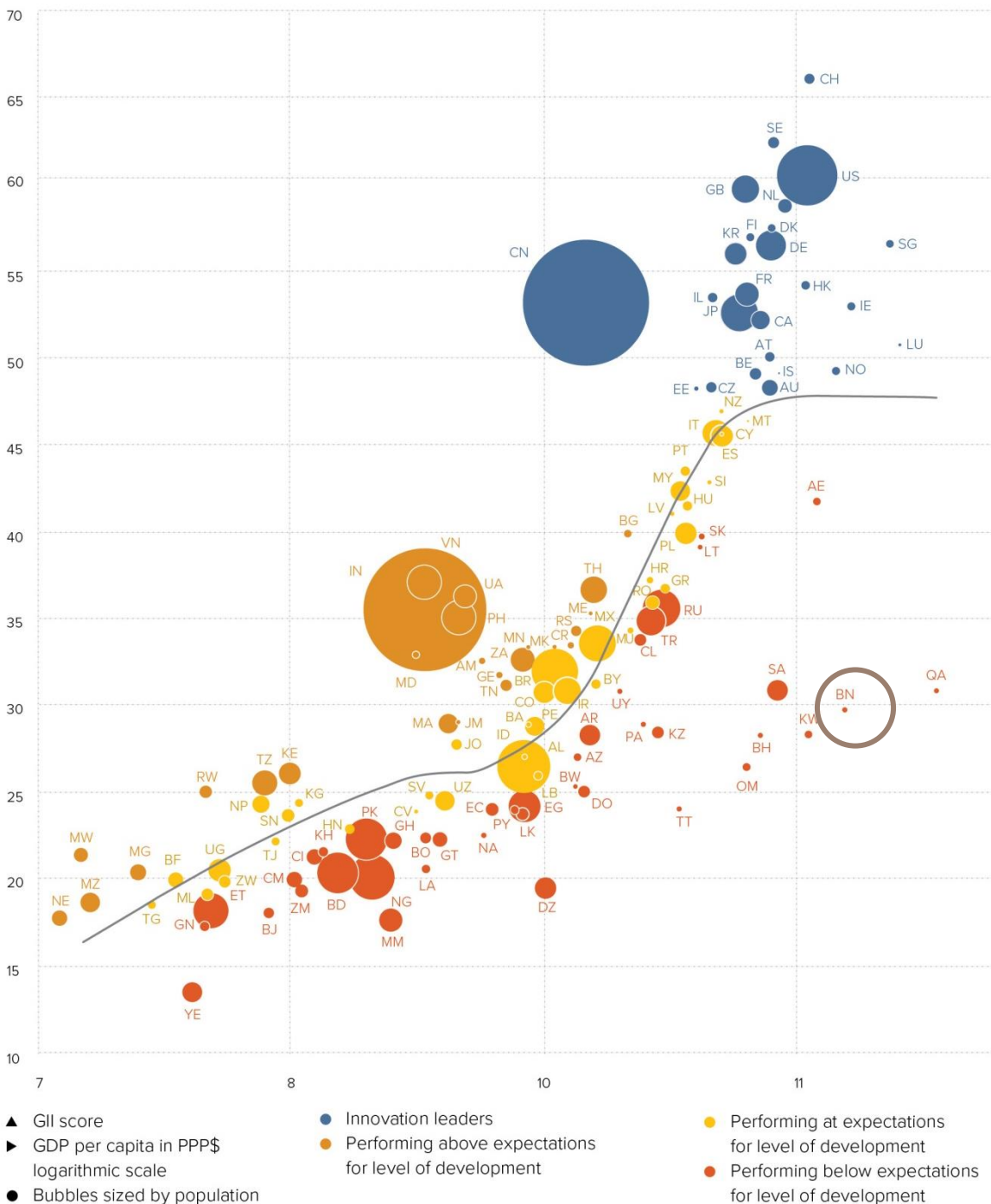
Brunei Darussalam ranks 13th among the 17 economies in South East Asia, East Asia, and Oceania.

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 is performing below expectations for its level of development.

The positive relationship between innovation and development

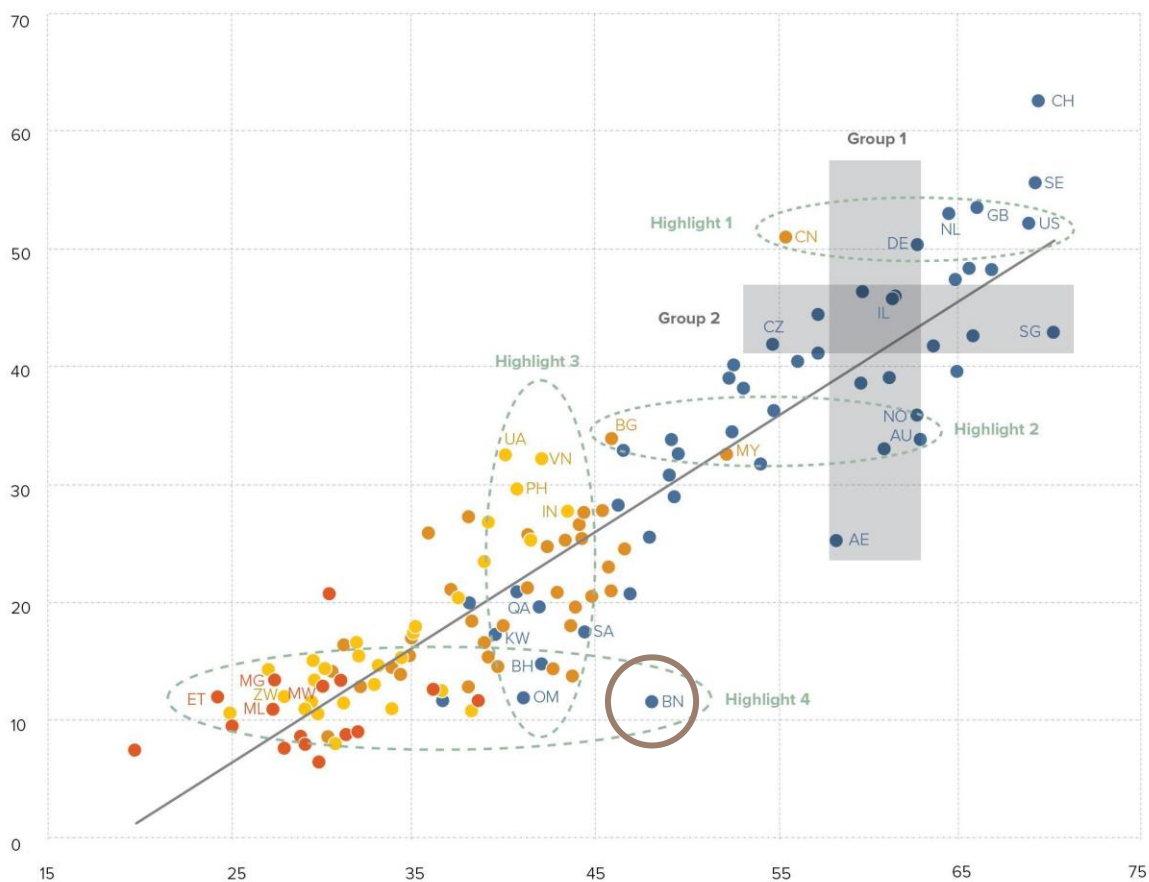


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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, 2020

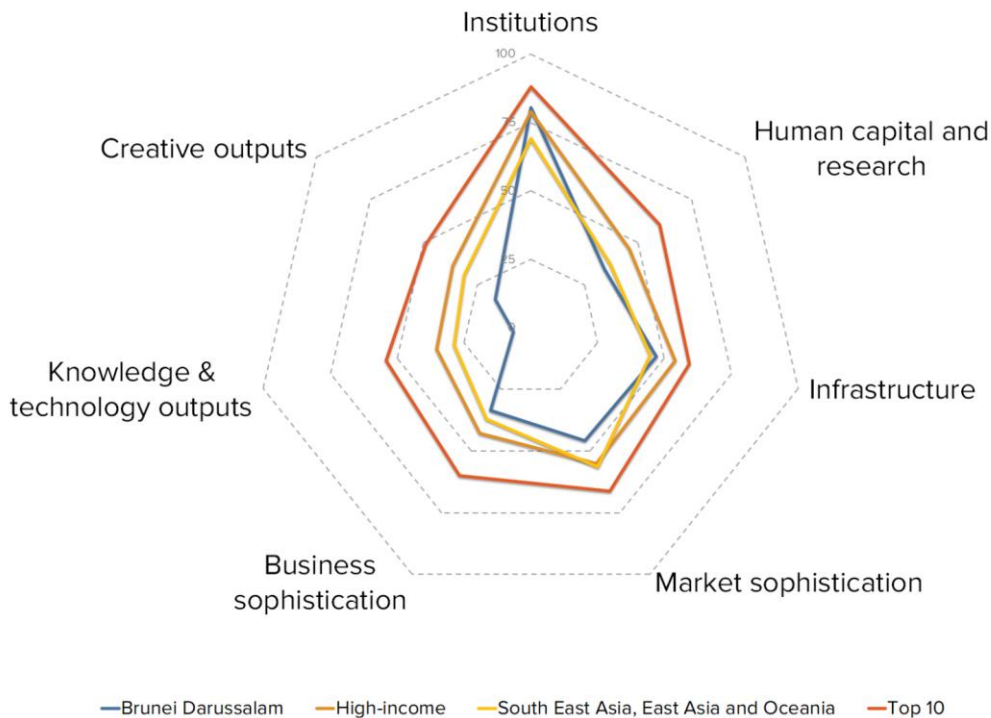


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

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

Brunei Darussalam's scores in the seven GII pillars



High-income group economies

Brunei Darussalam has a high score in one of the seven GII pillars: Institutions, which is above average for the high-income group.

Conversely, Brunei Darussalam scores below average for its income group in six of the GII pillars: Human capital & research, Infrastructure, Market sophistication, Business sophistication, Knowledge & technology outputs and Creative outputs.

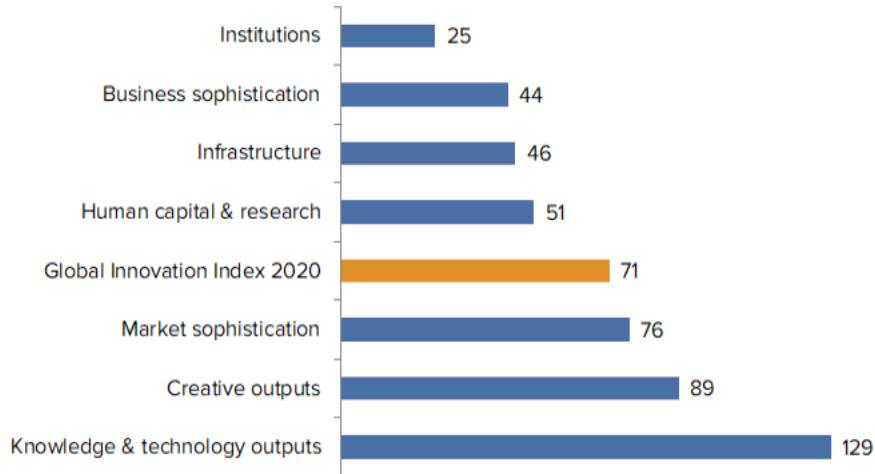
South East Asia, East Asia, and Oceania

Compared to other economies in South East Asia, East Asia, and Oceania, Brunei Darussalam performs:

- above average in two out of the seven GII pillars: Institutions and Infrastructure; and
- below average in five of the seven GII pillars: Human capital & research, Market sophistication, Business sophistication, Knowledge & technology outputs and Creative outputs.

OVERVIEW OF BRUNEI DARUSSALAM RANKINGS IN THE SEVEN GII AREAS

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



*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Brunei Darussalam in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.1	Political environment	18	2.3.3	Global R&D companies, top 3, mn US\$	42
1.1.1	Political & operational stability*	3	4.2	Investment	124
1.1.2	Government effectiveness*	22	5.3.2	High-tech imports, % total trade	115
1.2.3	Cost of redundancy dismissal, salary weeks	1	6	Knowledge & technology outputs	129
1.3.1	Ease of starting a business*	15	6.1.5	Citable documents H index	119
2.1.5	Pupil-teacher ratio, secondary	12	6.2.5	High- & medium-high-tech manufacturing, %	106
2.2.2	Graduates in science & engineering, %	5	6.3	Knowledge diffusion	125
3.2	General infrastructure	14	6.3.2	High-tech net exports, % total trade	128
3.2.1	Electricity output, GWh/mn pop	14	6.3.3	ICT services exports, % total trade	130
3.2.3	Gross capital formation, % GDP	3	7.1.1	Trademarks by origin/bn PPP\$ GDP	116
4.1	Credit	19	7.1.3	Industrial designs by origin/bn PPP\$ GDP	116
4.1.1	Ease of getting credit*	1	7.2.1	Cultural & creative services exports, % total trade	111
4.3.1	Applied tariff rate, weighted avg., %	2	7.2.4	Printing & other media, % manufacturing	89

STRENGTHS

GII strengths for Brunei Darussalam are found in four of the seven GII pillars.

- Institutions (25): exhibits strengths in the sub-pillar Political environment (18) and in the indicators Political & operational stability (3), Government effectiveness (22), Cost of redundancy dismissal (1) and Ease of starting a business (15).
- Human capital & research (51): shows strengths in the indicators Pupil–teacher ratio (12) and Graduates in science & engineering (5).
- Infrastructure (46): demonstrates strengths in the sub-pillar General infrastructure (14) and in the indicators Electricity output (14) and Gross capital formation (3).
- Market sophistication (76): reveals strengths in the sub-pillar Credit (19) and in the indicators Ease of getting credit (1) and Applied tariff rate (2).

WEAKNESSES

GII weaknesses for Brunei Darussalam are found in five of the seven GII pillars.

- Human capital & research (51): the indicator Global R&D companies (42) reveals a weakness.
- Market sophistication (76): displays a weakness in the sub-pillar Investment (124).
- Business sophistication (44): demonstrates a weakness in the indicator High-tech imports (115).
- Knowledge & technology outputs (129): shows weaknesses in the sub-pillar Knowledge diffusion (125) and in the indicators Citable documents H-index (119), High- & medium-high-tech manufacturing (106), High-tech net exports (128) and ICT services exports (130).
- Creative outputs (89): has weaknesses in several indicators; namely, Trademarks by origin (116), Industrial designs by origin (116), Cultural & creative services exports (111) and Printing & other media (89).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
113	39	High	SEAO	0.4	35.9	70,177.3	71
				Score/Value	Rank		
				Score/Value	Rank		
INSTITUTIONS				80.3	25		
1.1	Political environment	83.6	18	●	5.1	Knowledge workers	56.9 [22]
1.1.1	Political and operational stability*	94.6	3	●◆	5.1.1	Knowledge-intensive employment, %	40.7 25
1.1.2	Government effectiveness*	78.1	22	●	5.1.2	Firms offering formal training, %	n/a n/a
1.2	Regulatory environment	80.7	30		5.1.3	GERD performed by business, % GDP	n/a n/a
1.2.1	Regulatory quality*	59.9	39		5.1.4	GERD financed by business, %	n/a n/a
1.2.2	Rule of law*	63.1	37		5.1.5	Females employed w/advanced degrees, %	11.7 59 ◇
1.2.3	Cost of redundancy dismissal, salary weeks	8.0	1	●◆	5.2	Innovation linkages	23.9 53
1.3	Business environment	76.6	43		5.2.1	University/industry research collaboration†	39.4 78 ◇
1.3.1	Ease of starting a business*	94.9	15	●	5.2.2	State of cluster development†	44.2 80 ◇
1.3.2	Ease of resolving insolvency*	58.2	54		5.2.3	GERD financed by abroad, % GDP	n/a n/a
				Score/Value	Rank		
HUMAN CAPITAL & RESEARCH				34.3	51	◇	
2.1	Education	46.9	63		5.3	Knowledge absorption	19.7 103 ◇
2.1.1	Expenditure on education, % GDP	4.4	64		5.3.1	Intellectual property payments, % total trade	0.5 70
2.1.2	Government funding/pupil, secondary, % GDP/cap	23.6	25		5.3.2	High-tech imports, % total trade	4.4 115 ○
2.1.3	School life expectancy, years	14.3	66	◇	5.3.3	ICT services imports, % total trade	0.8 88
2.1.4	PISA scales in reading, maths, & science	423.1	53		5.3.4	FDI net inflows, % GDP	2.1 81
2.1.5	Pupil-teacher ratio, secondary	8.3	12	●◆	5.3.5	Research talent, % in business enterprise	n/a n/a
2.2	Tertiary education	45.4	25		KNOWLEDGE & TECHNOLOGY OUTPUTS		
2.2.1	Tertiary enrolment, % gross	31.4	80	◇	6.1	Knowledge creation	5.6 103 ◇
2.2.2	Graduates in science & engineering, %	39.2	5	●◆	6.1.1	Patents by origin/bn PPP\$ GDP	0.7 75
2.2.3	Tertiary inbound mobility, %	4.6	49		6.1.2	PCT patents by origin/bn PPP\$ GDP	0.1 77 ◇
2.3	Research & development (R&D)	10.6	[56]		6.1.3	Utility models by origin/bn PPP\$ GDP	n/a n/a
2.3.1	Researchers, FTE/mn pop	n/a	n/a		6.1.4	Scientific & technical articles/bn PPP\$ GDP	4.3 95 ◇
2.3.2	Gross expenditure on R&D, % GDP	n/a	n/a		6.1.5	Citable documents H-index	3.3 119 ○◇
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	0.0	42	○◇	6.2	Knowledge impact	4.7 [125]
2.3.4	QS university ranking, average score top 3*	21.2	49		6.2.1	Growth rate of PPP\$ GDP/worker, %	n/a n/a
				Score/Value	Rank		
INFRASTRUCTURE				47.0	46	◇	
3.1	Information & communication technologies (ICTs)	69.2	59	◇	6.2.2	New businesses/th pop. 15-64	2.4 53
3.1.1	ICT access*	72.7	52	◇	6.2.3	Computer software spending, % GDP	n/a n/a
3.1.2	ICT use*	71.4	38		6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	2.2 83 ◇
3.1.3	Government's online service*	72.2	68	◇	6.2.5	High- and medium-high-tech manufacturing, %	2.7 106 ○◇
3.1.4	E-participation*	60.7	93	◇	6.3	Knowledge diffusion	9.1 125 ○◇
3.2	General infrastructure	44.0	14	●	6.3.1	Intellectual property receipts, % total trade	n/a n/a
3.2.1	Electricity output, kWh/mn pop	9,668.3	14	●	6.3.2	High-tech net exports, % total trade	0.0 128 ○◇
3.2.2	Logistics performance*	29.9	79	◇	6.3.3	ICT services exports, % total trade	0.0 130 ○◇
3.2.3	Gross capital formation, % GDP	46.2	3	●◆	6.3.4	FDI net outflows, % GDP	2.1 35
3.3	Ecological sustainability	27.6	70	◇	CREATIVE OUTPUTS		
3.3.1	GDP/unit of energy use	8.3	75		7.1	Intangible assets	19.6 93 ◇
3.3.2	Environmental performance*	54.8	44		7.1.1	Trademarks by origin/bn PPP\$ GDP	5.5 116 ○◇
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.7	72	◇	7.1.2	Global brand value, top 5,000, % GDP	n/a n/a
				Score/Value	Rank		
MARKET SOPHISTICATION				45.7	76		
4.1	Credit	56.9	19	●	7.1.3	Industrial designs by origin/bn PPP\$ GDP	0.0 116 ○
4.1.1	Ease of getting credit*	100.0	1	●◆	7.1.4	ICTs & organizational model creation†	47.5 90 ◇
4.1.2	Domestic credit to private sector, % GDP	35.0	86	◇	7.2	Creative goods and services	2.6 [113]
4.1.3	Microfinance gross loans, % GDP	n/a	n/a		7.2.1	Cultural & creative services exports, % total trade	0.0 111 ○◇
4.2	Investment	22.2	124	○◇	7.2.2	National feature films/mn pop. 15-69	n/a n/a
4.2.1	Ease of protecting minority investors*	40.0	110	◇	7.2.3	Entertainment & Media market/th pop. 15-69	n/a n/a
4.2.2	Market capitalization, % GDP	n/a	n/a		7.2.4	Printing and other media, % manufacturing	0.5 89 ○
4.2.3	Venture capital deals/bn PPP\$ GDP	0.0	47		7.2.5	Creative goods exports, % total trade	0.1 90
4.3	Trade, competition, and market scale	58.1	87	◇	7.3	Online creativity	24.2 49
4.3.1	Applied tariff rate, weighted avg., %	0.0	2	●◆	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	7.2 45
4.3.2	Intensity of local competition†	61.2	105	◇	7.3.2	Country-code TLDs/th pop. 15-69	0.9 88 ◇
4.3.3	Domestic market scale, bn PPP\$	35.9	114	◇	7.3.3	Wikipedia edits/mn pop. 15-69	66.2 46
					7.3.4	Mobile app creation/bn PPP\$ GDP	n/a n/a

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 II 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

Code	Indicator name	Country year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2018	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	2018	World Federation of Exchanges
5.1.2	Firms offering formal training, %	n/a	2018	World Bank
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2017	UNESCO Institute for Statistics
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
6.2.1	Growth rate of PPP\$ GDP/worker, %	n/a	2019	The Conference Board
6.2.3	Computer software spending, % GDP	n/a	2019	IHS Global Insight
6.3.1	Intellectual property receipts, % total trade	n/a	2018	World Trade Organization
7.1.2	Global brand value, top 5,000, % GDP	n/a	2019	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2019	App Annie

Outdated data

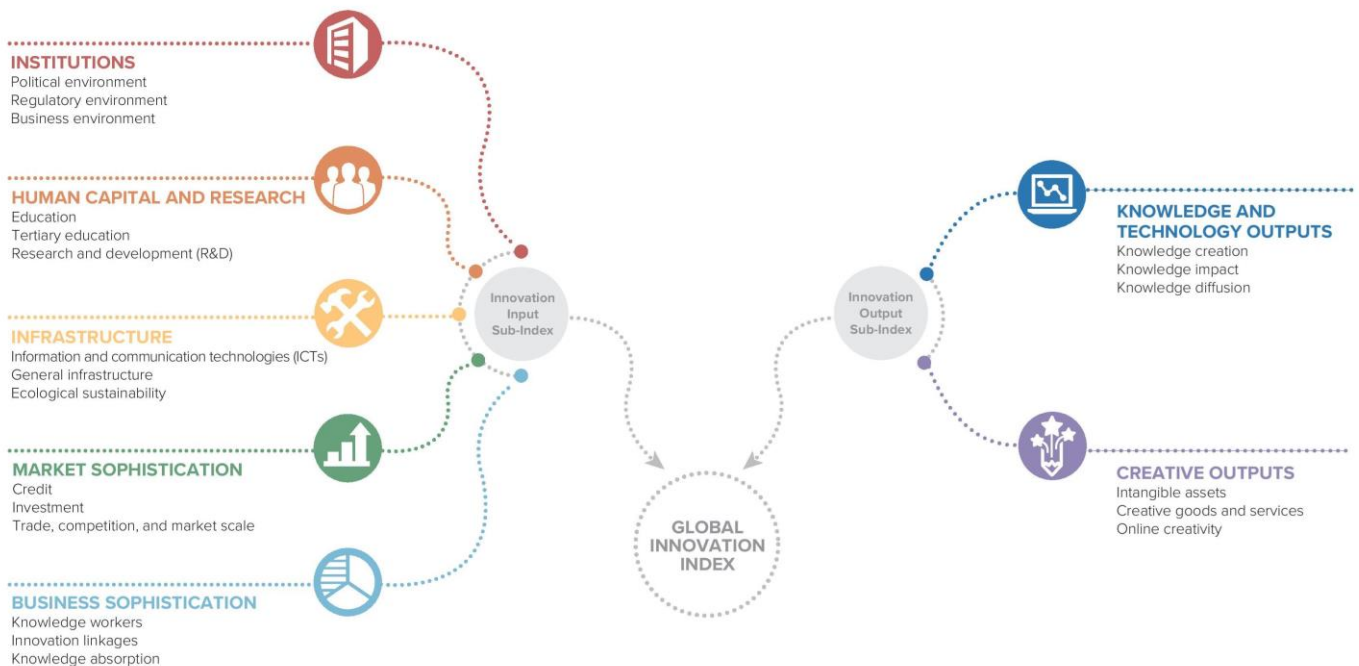
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2018	UNESCO Institute for Statistics
5.1.1	Knowledge-intensive employment, %	2017	2018	International Labour Organization
5.3.1	Intellectual property payments, % total trade	2017	2018	World Trade Organization
5.3.3	ICT services imports, % total trade	2017	2018	World Trade Organization
6.2.5	High- & medium-high-tech manufacturing, %	2010	2017	United Nations Industrial Development Organization
6.3.3	ICT services exports, % total trade	2017	2018	World Trade Organization
6.3.4	FDI net outflows, % GDP	2015	2018	International Monetary Fund
7.1.3	Industrial designs by origin/bn PPP\$ GDP	2017	2018	World Intellectual Property Organization
7.2.4	Printing & other media, % manufacturing	2010	2017	United Nations Industrial Development Organization

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.

Framework of the Global Innovation Index 2020



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.

