

MALAYSIA

33rd

Malaysia ranks 33rd among the 131 economies featured in the GI 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 GI aims to capture the multi-dimensional facets of innovation.

The following table shows the rankings of Malaysia over the past three years, noting that data availability and changes to the GI model framework influence year-on-year comparisons of the GI rankings. The statistical confidence interval for the ranking of Malaysia in the GI 2020 is between ranks 32 and 35.

Rankings of Malaysia (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	33	34	36
2019	35	34	39
2018	35	34	39

- Malaysia performs better in innovation inputs than innovation outputs in 2020.
- This year Malaysia ranks 34th in innovation inputs, the same as both last year and 2018.
- As for innovation outputs, Malaysia ranks 36th. This position is higher than last year and higher compared to 2018.

2nd

Malaysia ranks 2nd among the 37 upper middle-income group economies.

8th

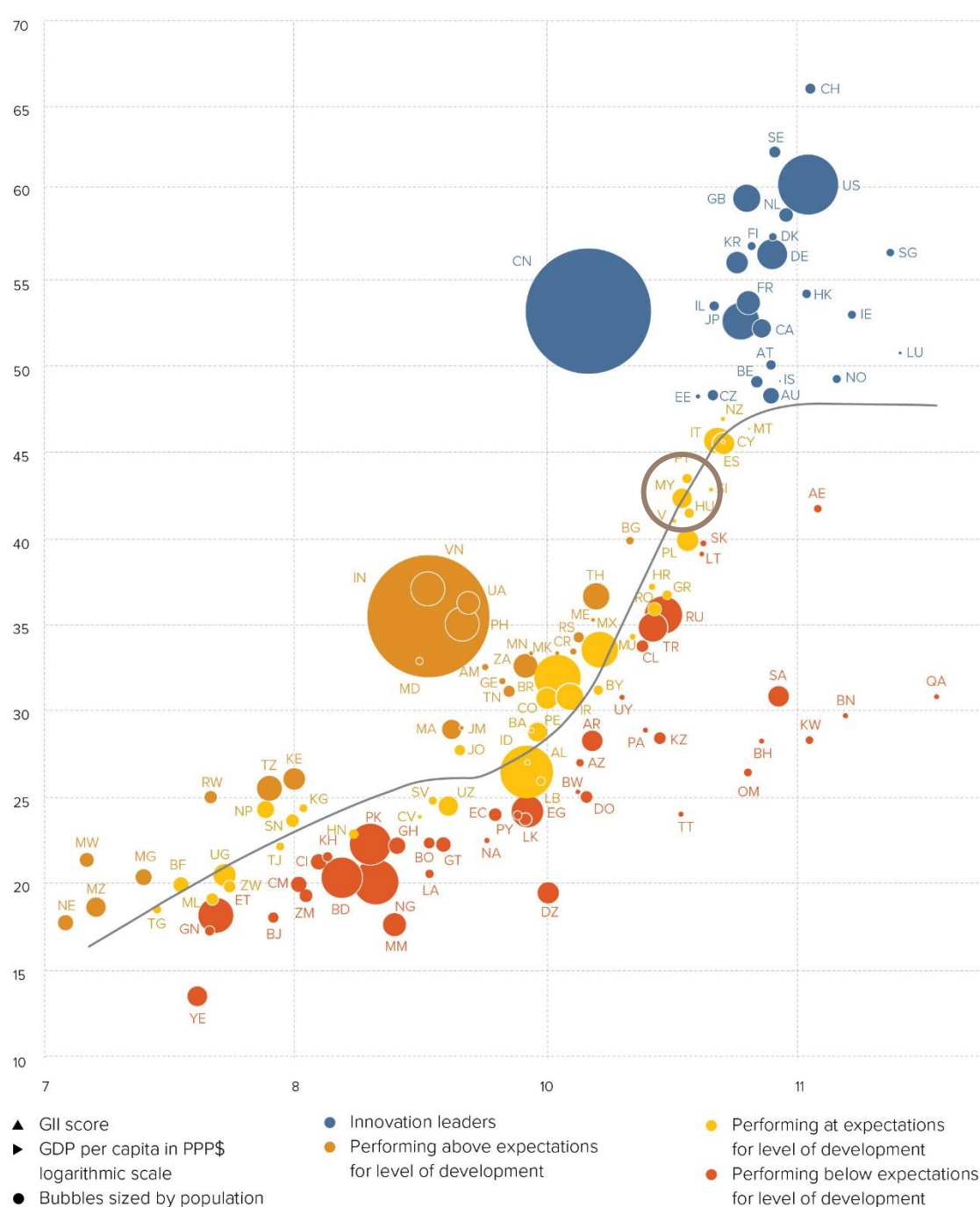
Malaysia ranks 8th among the 17 economies in South East Asia, East Asia, and Oceania.

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, Malaysia's performance matches expectations for its level of development.

The positive relationship between innovation and development

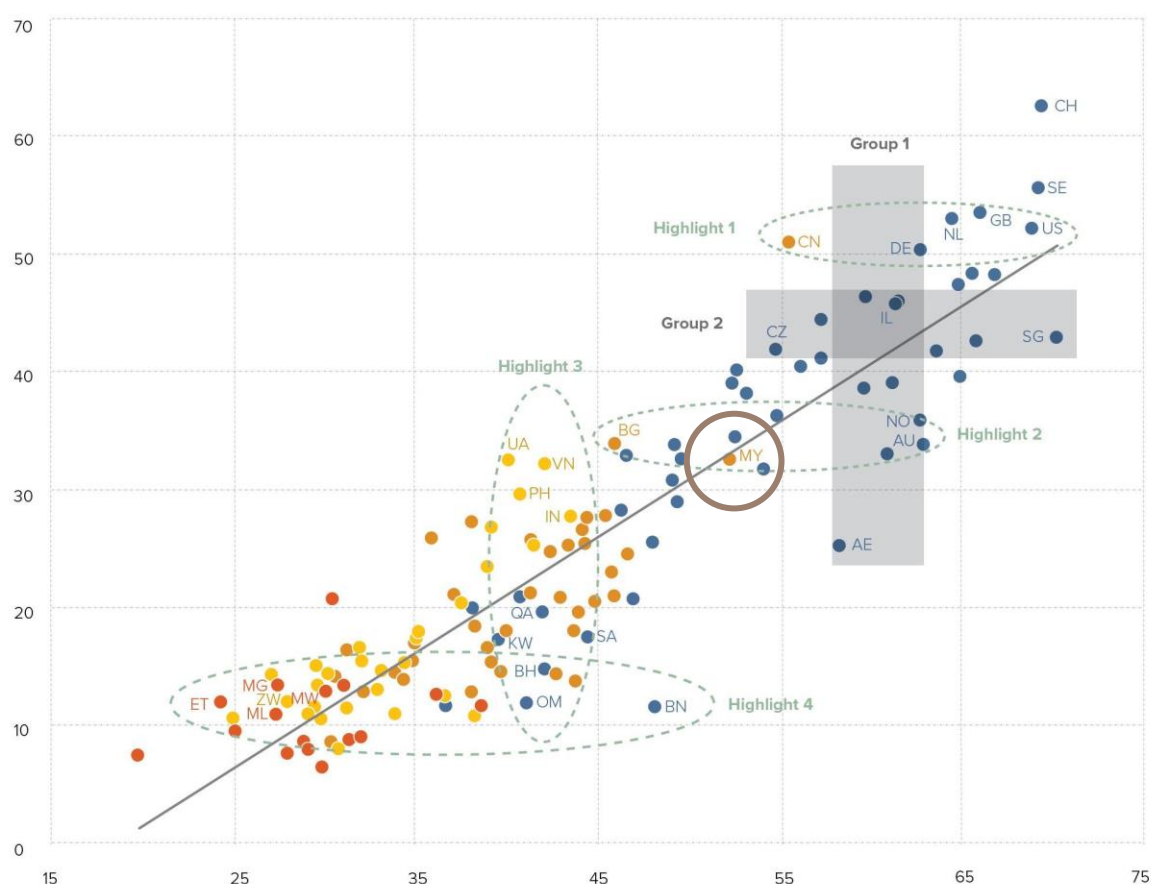


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Malaysia produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance, 2020



▲ Output score
► Input score

● High income group
● Upper middle-income group

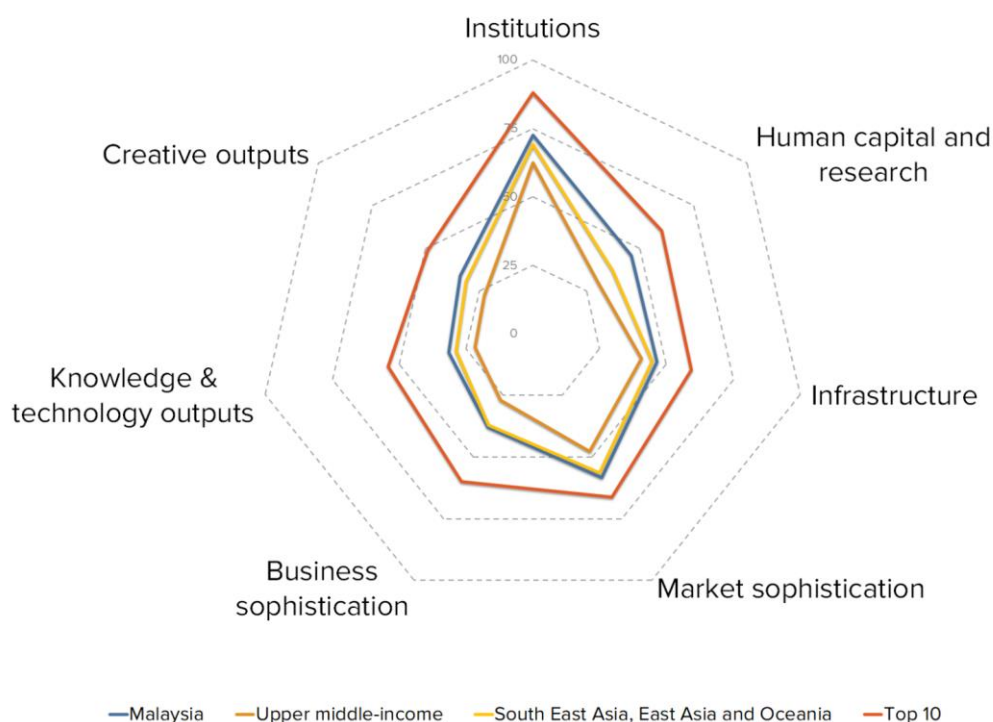
● Lower middle-income group
● Low income group

— Fitted values

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 MALAYSIA AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND SOUTH EAST ASIA, EAST ASIA, AND OCEANIA

Malaysia's scores in the seven GII pillars



Upper middle-income group economies

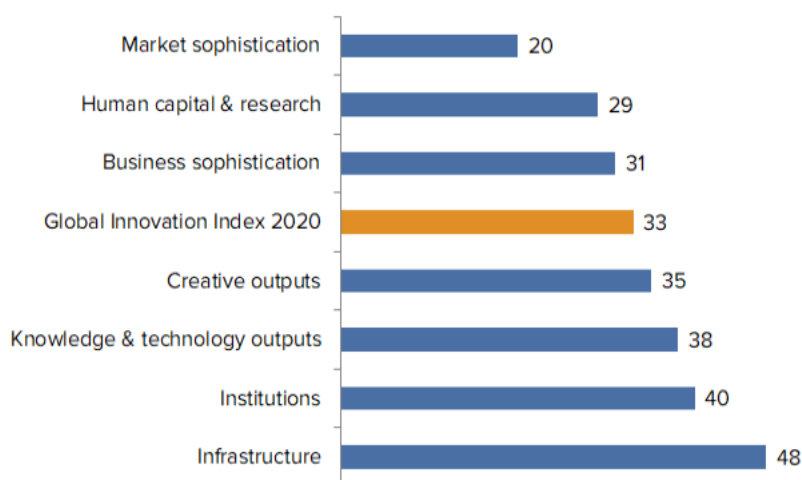
Malaysia has high scores in all seven of the GII pillars, which are above average for the upper middle-income group.

South East Asia, East Asia, and Oceania

Compared to other economies in South East Asia, East Asia, and Oceania, Malaysia performs above average in all seven of the GII pillars.

OVERVIEW OF MALAYSIA RANKINGS IN THE SEVEN GII AREAS

Malaysia performs best in Market sophistication and its weakest performance is in Infrastructure.



*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 Malaysia in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.2	Tertiary education	8	1.2.3	Cost of redundancy dismissal, salary weeks	102
2.2.2	Graduates in science & engineering, %	4	1.3.1	Ease of starting a business*	97
2.3.4	QS university ranking, average score top 3*	17	4.1.3	Microfinance gross loans, % GDP	57
4.2.1	Ease of protecting minority investors*	2	5.1.2	Firms offering formal training, %	77
4.2.2	Market capitalization, % GDP	7	5.2.3	GERD financed by abroad, % GDP	73
5.2.1	University/industry research collaboration†	14	5.3.5	Research talent, % in business enterprise	55
5.2.2	State of cluster development†	7	6.1.3	Utility models by origin/bn PPP\$ GDP	55
5.3.2	High-tech imports, % total trade	3	7.1.1	Trademarks by origin/bn PPP\$ GDP	96
6.3.2	High-tech net exports, % total trade	1	7.1.3	Industrial designs by origin/bn PPP\$ GDP	82
7.1.2	Global brand value, top 5,000, % GDP	7	7.2.4	Printing & other media, % manufacturing	68
7.2	Creative goods and services	11			
7.2.5	Creative goods exports, % total trade	1			

STRENGTHS

GII strengths for Malaysia are found in five of the seven GII pillars.

- Human capital & research (29): shows strengths in the sub-pillar Tertiary education (8) and in the indicators Graduates in science & engineering (4) and QS university ranking (17).
- Market sophistication (20): exhibits strengths in the indicators Ease of protecting minority investors (2) and Market capitalization (7).
- Business sophistication (31): displays strengths in the indicators University/industry research collaboration (14), State of cluster development (7) and High-tech imports (3).
- Knowledge & technology outputs (38): the indicator High-tech net exports (1) reveals a strength.
- Creative outputs (35): demonstrates strengths in the sub-pillar Creative goods and services (11) and in the indicators Global brand value (7) and Creative goods exports (1).

WEAKNESSES

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

- Institutions (40): exhibits weaknesses in the indicators Cost of redundancy dismissals (102) and Ease of starting a business (97).
- Market sophistication (20): the indicator Microfinance gross loans (57) reveals a weakness.
- Business sophistication (31): displays weaknesses in the indicators Firms offering formal training (77), GERD financed by abroad (73) and Research talent (55).
- Knowledge & technology outputs (38): the indicator Utility models by origin (55) demonstrates a weakness.
- Creative outputs (35): shows weaknesses in the indicators Trademarks by origin (96), Industrial designs by origin (82) and Printing & other media (68).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
36	34	Upper middle	SEAO	31.9	1,078.5	28,705.9	35
		Score/Value	Rank				
INSTITUTIONS.....		72.5	40	BUSINESS SOPHISTICATION..... 38.0 31			
1.1	Political environment.....	77.4	28	5.1	Knowledge workers.....	37.3	53
1.1.1	Political and operational stability*.....	83.9	21	5.1.1	Knowledge-intensive employment, %.....	27.2	54
1.1.2	Government effectiveness*.....	74.2	30	5.1.2	Firms offering formal training, %.....	18.5	77
1.2	Regulatory environment.....	64.9	64	5.1.3	GERD performed by business, % GDP.....	0.8	25
1.2.1	Regulatory quality*.....	59.8	40	5.1.4	GERD financed by business, %.....	56.9	15
1.2.2	Rule of law*.....	62.9	38	5.1.5	Females employed w/advanced degrees, %.....	12.5	56
1.2.3	Cost of redundancy dismissal, salary weeks.....	23.9	102	5.2	Innovation linkages.....	30.3	33
1.3	Business environment.....	75.2	50	5.2.1	University/industry research collaboration+.....	68.3	14
1.3.1	Ease of starting a business*.....	83.3	97	5.2.2	State of cluster development.....	69.8	7
1.3.2	Ease of resolving insolvency*.....	67.0	37	5.2.3	GERD financed by abroad, % GDP.....	0.0	73
				5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....	0.1	25
				5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....	0.4	33
HUMAN CAPITAL & RESEARCH.....		46.0	29	5.3	Knowledge absorption.....	46.3	22
2.1	Education.....	45.1	68	5.3.1	Intellectual property payments, % total trade.....	0.8	47
2.1.1	Expenditure on education, % GDP.....	4.5	62	5.3.2	High-tech imports, % total trade.....	27.0	3
2.1.2	Government funding/pupil, secondary, % GDP/cap.....	22.8	31	5.3.3	ICT services imports, % total trade.....	1.4	47
2.1.3	School life expectancy, years.....	13.7	74	5.3.4	FDI net inflows, % GDP.....	3.3	45
2.1.4	PISA scales in reading, maths, & science.....	430.9	48	5.3.5	Research talent, % in business enterprise.....	21.9	55
2.1.5	Pupil-teacher ratio, secondary.....	11.4	49	KNOWLEDGE & TECHNOLOGY OUTPUTS.... 31.3 38			
2.2	Tertiary education.....	55.4	8	6.1	Knowledge creation.....	12.1	70
2.2.1	Tertiary enrolment, % gross.....	45.1	65	6.1.1	Patents by origin/bn PPP\$ GDP.....	1.1	63
2.2.2	Graduates in science & engineering, %.....	40.8	4	6.1.2	PCT patents by origin/bn PPP\$ GDP.....	0.2	49
2.2.3	Tertiary inbound mobility, %.....	9.6	21	6.1.3	Utility models by origin/bn PPP\$ GDP.....	0.1	55
2.3	Research & development (R&D).....	37.4	29	6.1.4	Scientific & technical articles/bn PPP\$ GDP.....	8.6	58
2.3.1	Researchers, FTE/mn pop.....	2,396.5	35	6.1.5	Citable documents H-index.....	18.9	42
2.3.2	Gross expenditure on R&D, % GDP.....	1.4	24	6.2	Knowledge impact.....	36.2	22
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US.....	37.4	41	6.2.1	Growth rate of PPP\$ GDP/worker, %.....	2.6	36
2.3.4	QS university ranking, average score top 3*.....	54.6	17	6.2.2	New businesses/th pop. 15-64.....	2.4	52
				6.2.3	Computer software spending, % GDP.....	0.0	28
				6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....	9.4	29
				6.2.5	High- and medium-high-tech manufacturing, %.....	43.1	17
INFRASTRUCTURE.....		46.4	48	6.3	Knowledge diffusion.....	45.5	18
3.1	Information & communication technologies (ICTs)....	79.4	35	6.3.1	Intellectual property receipts, % total trade.....	0.1	57
3.1.1	ICT access*.....	74.8	44	6.3.2	High-tech net exports, % total trade.....	38.6	1
3.1.2	ICT use*.....	65.2	52	6.3.3	ICT services exports, % total trade.....	1.2	76
3.1.3	Government's online service*.....	88.9	27	6.3.4	FDI net outflows, % GDP.....	2.2	32
3.1.4	E-participation*.....	88.8	32	CREATIVE OUTPUTS..... 33.9 35			
3.2	General infrastructure.....	28.8	59	7.1	Intangible assets.....	39.5	28
3.2.1	Electricity output, kWh/mn pop.....	5,202.5	38	7.1.1	Trademarks by origin/bn PPP\$ GDP.....	19.6	96
3.2.2	Logistics performance.....	54.0	40	7.1.2	Global brand value, top 5,000, % GDP.....	158.9	7
3.2.3	Gross capital formation, % GDP.....	22.5	73	7.1.3	Industrial designs by origin/bn PPP\$ GDP.....	0.5	82
3.3	Ecological sustainability.....	31.0	56	7.1.4	ICTs & organizational model creation+.....	71.9	17
3.3.1	GDP/unit of energy use.....	9.8	58	7.2	Creative goods and services.....	40.9	11
3.3.2	Environmental performance*.....	47.9	62	7.2.1	Cultural & creative services exports, % total trade.....	0.2	66
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....	2.1	40	7.2.2	National feature films/mn pop. 15-69.....	3.8	50
				7.2.3	Entertainment & Media market/th pop. 15-69.....	12.4	35
				7.2.4	Printing and other media, % manufacturing.....	0.8	68
				7.2.5	Creative goods exports, % total trade.....	9.8	1
MARKET SOPHISTICATION.....		58.3	20	7.3	Online creativity.....	15.9	68
4.1	Credit.....	52.1	26	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....	6.3	50
4.1.1	Ease of getting credit*.....	75.0	34	7.3.2	Country-code TLDs/th pop. 15-69.....	4.0	57
4.1.2	Domestic credit to private sector, % GDP.....	121.8	18	7.3.3	Wikipedia edits/mn pop. 15-69.....	52.5	57
4.1.3	Microfinance gross loans, % GDP.....	0.1	57	7.3.4	Mobile app creation/bn PPP\$ GDP.....	3.3	61
4.2	Investment.....	50.0	25				
4.2.1	Ease of protecting minority investors*.....	88.0	2				
4.2.2	Market capitalization, % GDP.....	124.4	7				
4.2.3	Venture capital deals/bn PPP\$ GDP.....	0.0	44				
4.3	Trade, competition, and market scale.....	72.8	28				
4.3.1	Applied tariff rate, weighted avg., %.....	4.0	76				
4.3.2	Intensity of local competition+.....	76.7	17				
4.3.3	Domestic market scale, bn PPP\$.....	1,078.5	25				

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 Malaysia.

Missing data

Malaysia has complete data coverage in the GII 2020.

Outdated data

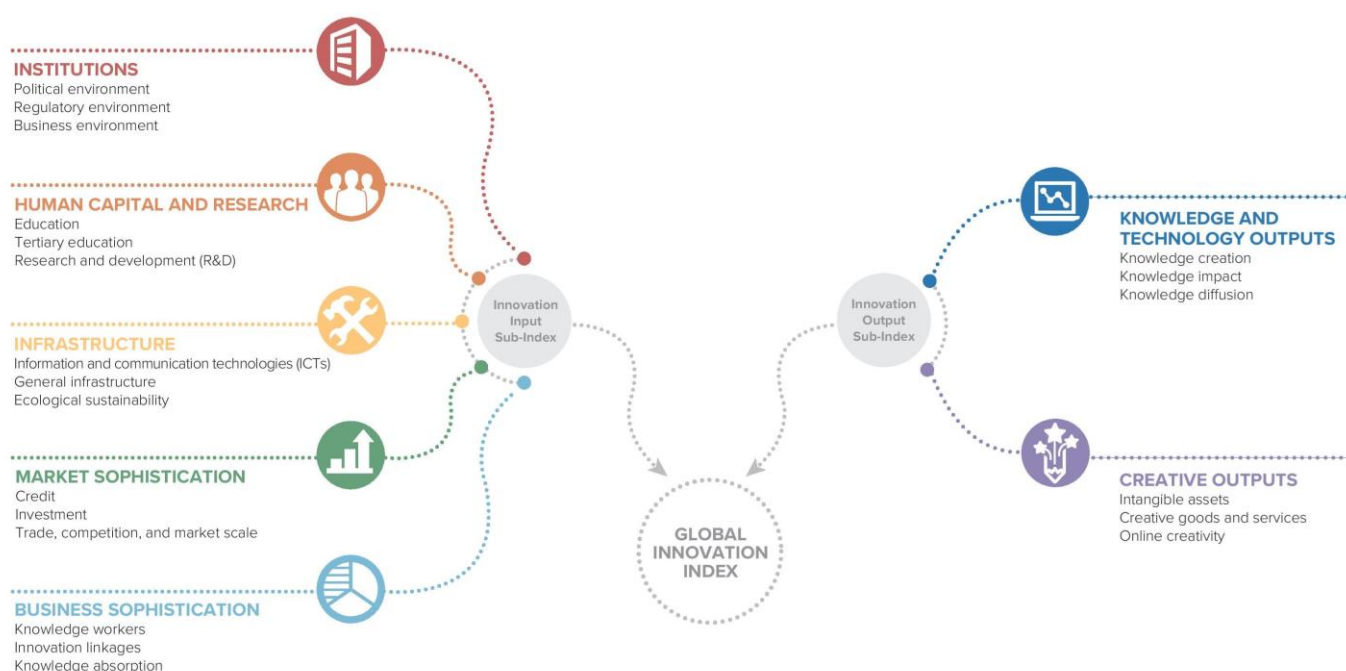
Code	Indicator name	Country year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	2016	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2016	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.1.3	Microfinance gross loans, % GDP	2011	2018	Microfinance Information Exchange
4.3.1	Applied tariff rate, weighted avg., %	2016	2018	World Bank
5.1.2	Firms offering formal training, %	2014	2018	World Bank
5.1.3	GERD performed by business, % GDP	2016	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.5	Females employed w/advanced degrees, %	2016	2018	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2016	2017	UNESCO Institute for Statistics
5.3.5	Research talent, % in business enterprise	2016	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators

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.



www.globalinnovationindex.org



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