

GLOBAL INNOVATION INDEX 2018

Malaysia

35th Malaysia is ranked 35th in the GII 2018, moving up 2 positions from the previous year.

The GII indicators are grouped into innovation inputs and outputs. The following table reflects Malaysia's rankings over time¹.

Malaysia's ranking over time

	GII	Input	Output	Efficiency
2018	35	34	39	48
2017	37	36	39	46
2016	35	32	39	59

- Malaysia ranks fairly well in both innovation inputs and outputs.
- Malaysia exhibits stable performance in innovation outputs, ranking 39th globally in the last three years.
- This year it improves in innovation inputs, reaching the 34th spot – up 2 positions from 2017.
- The country ranks 48h in the Innovation Efficiency Ratio, down 2 spots from last year but still much higher than the 59th position it held in 2016.
- Malaysia's position in this ratio is lower than its overall GII position (35th), indicating that there is room for improving the efficiency with which Malaysia translates its innovation inputs into more outputs.

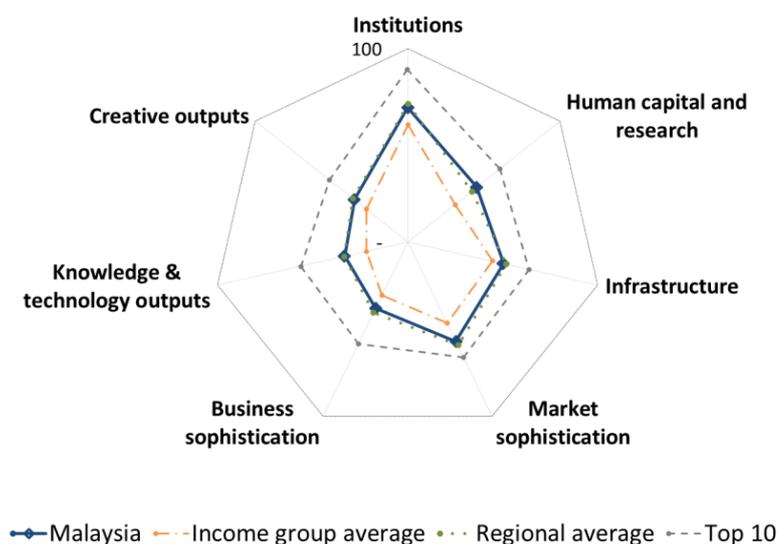
2nd Malaysia is ranked 2nd among the 34 upper-middle-income countries in the GII 2018.

8th Malaysia is ranked 8th among the 15 countries in South East Asia and Oceania.

¹ Note that year-on-year comparisons of the GII ranks are imperfect and influenced by changes in the GII model and data availability.

Benchmarking Malaysia to other upper-middle-income countries and the South East Asia and Oceania region

Malaysia's scores by area



Upper-middle-income countries

Malaysia has high scores in all 7 GII areas – **Institutions, Human Capital & Research, Infrastructure, Market Sophistication, Business Sophistication, Knowledge & Technology Outputs, and Creative Outputs**, in which it scores above the average of the upper-middle-income group in the GII 2018.

Top scores in areas *Business environment, Tertiary education, Information & Communication Technologies (ICTs), Trade, competition & market scale, Knowledge absorption, Knowledge impact, and Intangible assets* are behind these high rankings.

South East Asia and Oceania region

Compared to other countries in the South East Asia and Oceania region, Malaysia performs above-average in one GII area – **Human Capital & Research**.

Malaysia's innovation profile

Strengths

- Among **innovation inputs**, Malaysia present a strong performance in three of the five GII areas capturing inputs.
- In **Human Capital and Research** (31st), Malaysia demonstrates strengths in the area *Tertiary education* (15th) and in the indicator *Graduates in science & engineering* (4th).
- In **Market Sophistication** (22nd), the country's strengths lie in indicators *Ease of protecting minority investors* (4th) and *Market capitalization* (6th).
- In **Business Sophistication** (39th), Malaysia exhibits strengths in indicators *University-industry research collaboration* (11th), *State of cluster development* (12th), and *High-tech imports*, in which it is number 1 in the world.
- On the **innovation output** side, most of Malaysia's strengths are found in the area **Knowledge & Technology Outputs** (33rd), where it has strong performance in the area *Knowledge diffusion* (13th), as well as in indicators *Productivity growth* (14th), *FDI outflows* (17th), and *High-tech exports*, where it achieves great results and ranks 1st globally.

- In **Creative Outputs** (47th), Malaysia shows strong performance in the area *Creative goods & services* (13th) and in indicator *Creative goods exports*, where it ranks 3rd in the world.

Weaknesses

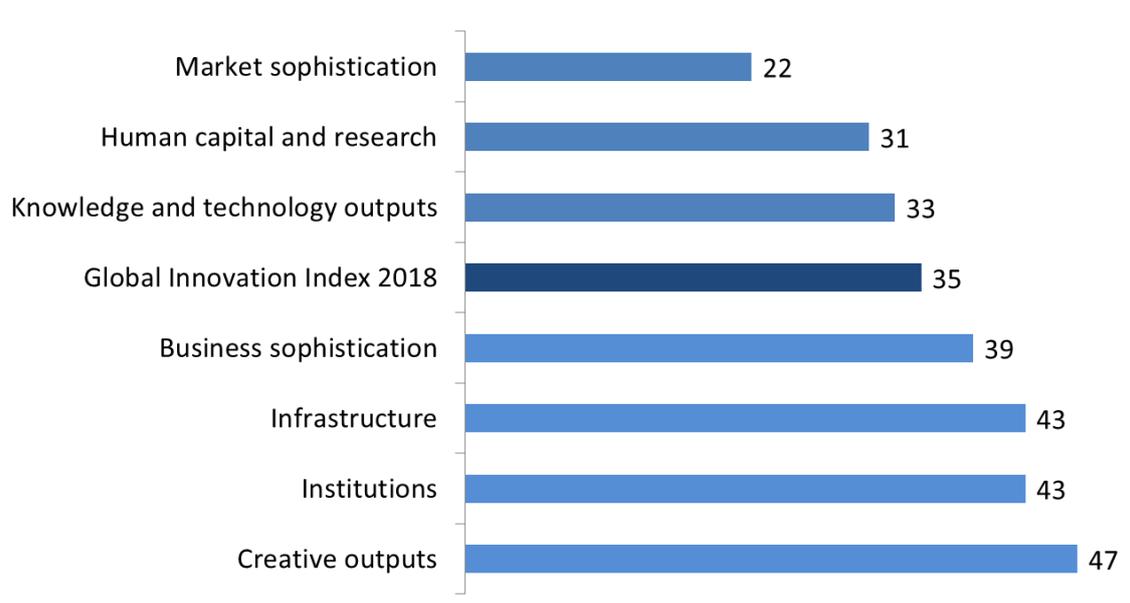
- Malaysia's relative weaknesses are mainly accrued in **innovation inputs**, and in particular in four GII areas. Only the input area **Infrastructure** (43rd) presents no weaknesses (as well as no strengths).
- In **Institutions** (43rd), Malaysia performs relatively weakly in indicators *Cost of redundancy dismissal* (95th) and *Ease of starting a business* (86th).
- In **Human Capital & Research** (31st), only one weakness is found in the indicator *PISA results* (58th).
- In **Market Sophistication** (22nd), the indicator *Venture capital deals* (58th) is signaled as a weakness for Malaysia.
- In **Business Sophistication** (39th), indicators *Firms offering formal training* (76th), *R&D financed by abroad* (82nd), and *Research talent in business enterprise* (63rd) present relatively weak performance.
- On the **innovation output** side, Malaysia exhibits relative weaknesses only in three indicators. *Utility models by origin* (52nd) in **Knowledge & Technology Outputs** (33rd); and *Trademarks by origin* (84th) and *Printing & other media* (65th) in **Creative Outputs** (47th).

The following figure presents a summary of Malaysia's ranks in the 7 GII areas, as well as the overall rank in the GII 2018.

Malaysia's rank in the GII 2018 and the 7 GII areas

Rank 1 is the highest possible in each pillar

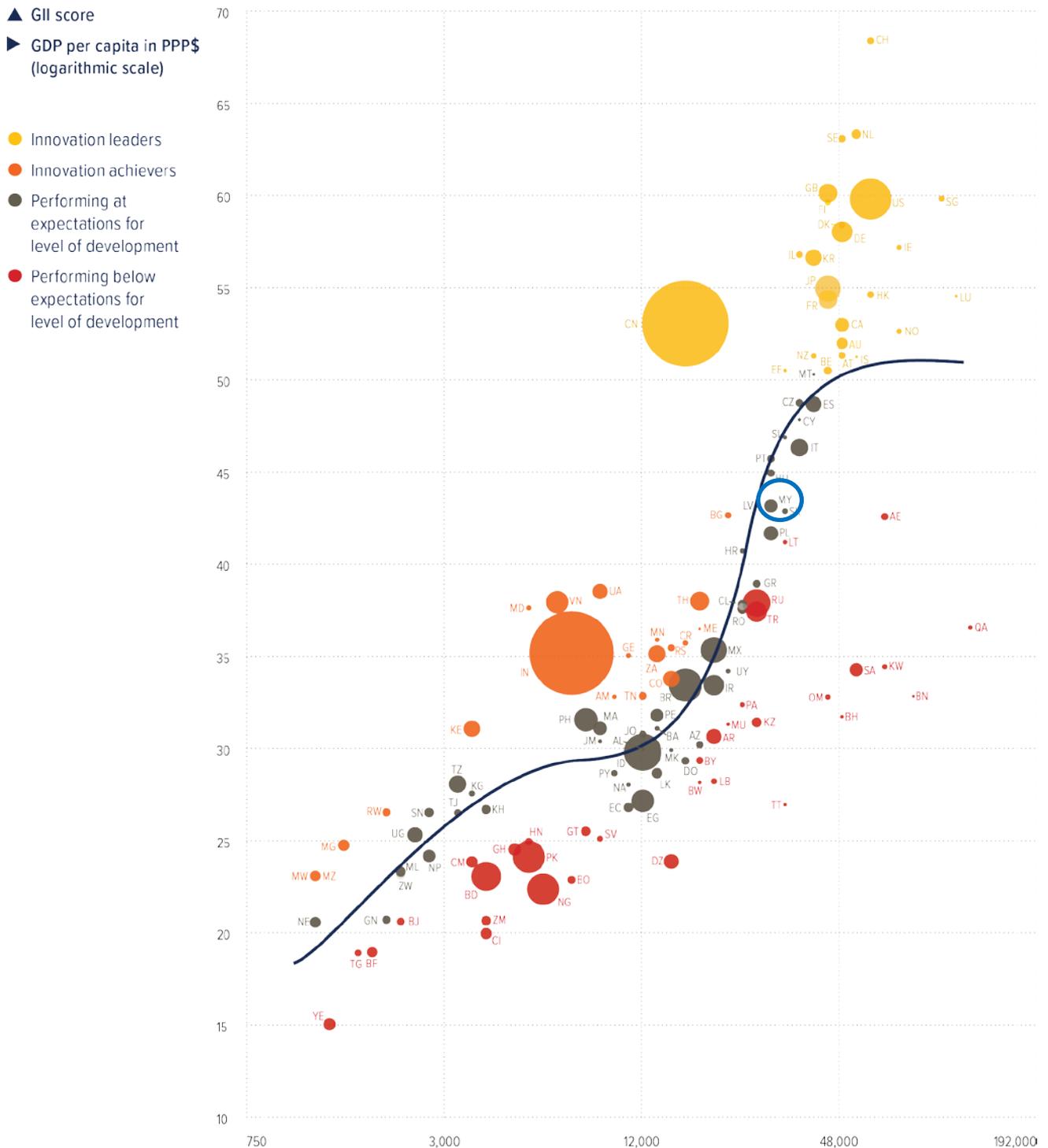
Total number of countries: 126



Expected vs. Observed Innovation Performance

The GII bubble chart shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The depicted trendline gives an indication of the expected innovation performance at different levels of income. Countries located above the trendline are performing better than what would be expected based on their income level. Countries below the line are Innovation Under-performers relative to GDP.

Relative to GDP, Malaysia performs at its expected level of development.



Missing and Outdated Data

More and better data improve the ability of a country to understand its strengths and weaknesses and give policymakers greater capacity to plan and adapt public policies accordingly. The GII 2018 covers 126 countries that complied with the minimum indicator coverage of 35 indicators in the Innovation Input Sub-Index (66%) and 18 indicators in the Innovation Output Sub-Index (66%).

The following tables show data for Malaysia that is not available or that is outdated.

Missing Data

Code	Indicator	Country Year	Model Year	Source
7.2.1	Cultural & creative services exports, % total trade	n/a	2016	WTO, Trade in Commercial Services

Outdated Data

Code	Indicator	Country Year	Model Year	Source
2.1.4	PISA scales in reading, maths & science	2012	2015	OECD PISA
2.3.1	Researchers, FTE/mn pop.	2015	2016	UNESCO Institute for Statistics (UIS)
2.3.2	Gross expenditure on R&D, % GDP	2015	2016	UNESCO Institute for Statistics (UIS)
4.1.3	Microfinance gross loans, % GDP	2011	2016	Microfinance Information Exchange, Mix Market
5.1.3	GERD performed by business, % GDP	2015	2016	UNESCO Institute for Statistics (UIS)
5.3.5	Research talent, % in business enterprise	2015	2016	UNESCO Institute for Statistics (UIS)



Output rank	Input rank	Income	Region	Efficiency ratio	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GI 2017 rank
39	34	Upper-middle	SEAO	48	31.6	926.1	29,040.8	37

	Score/Value	Rank		Score/Value	Rank
 Institutions	69.4	43 ◆	 Business sophistication	38.1	39 ◆
1.1 Political environment.....	67.0	42 ◆	5.1 Knowledge workers.....	35.5	63
1.1.1 Political stability & safety*.....	67.0	60	5.1.1 Knowledge-intensive employment, %.....	27.3	51
1.1.2 Government effectiveness*.....	67.1	38 ◆	5.1.2 Firms offering formal training, % firms.....	18.5	76 ○◇
1.2 Regulatory environment.....	68.1	60	5.1.3 GERD performed by business, % GDP [Ⓔ]	0.7	27 ◆
1.2.1 Regulatory quality*.....	62.3	38 ◆	5.1.4 GERD financed by business, %.....	49.6	23 ◆
1.2.2 Rule of law*.....	58.6	41 ◆	5.1.5 Females employed w/advanced degrees, %.....	12.5	53
1.2.3 Cost of redundancy dismissal, salary weeks.....	23.9	95 ○	5.2 Innovation linkages.....	35.0	47 ◆
1.3 Business environment.....	73.1	50	5.2.1 University/industry research collaboration [†]	69.6	11 ●◆
1.3.1 Ease of starting a business*.....	83.8	86 ○	5.2.2 State of cluster development [†]	68.1	12 ●◆
1.3.2 Ease of resolving insolvency*.....	62.5	43	5.2.3 GERD financed by abroad, %.....	1.7	82 ○
			5.2.4 JV-strategic alliance deals/bn PPP\$ GDP.....	0.1	23 ◆
			5.2.5 Patent families 2+ offices/bn PPP\$ GDP.....	0.2	40
 Human capital & research	45.2	31 ◆	5.3 Knowledge absorption.....	43.9	19 ◆
2.1 Education.....	44.2	75	5.3.1 Intellectual property payments, % total trade.....	0.7	50
2.1.1 Expenditure on education, % GDP.....	4.8	61	5.3.2 High-tech net imports, % total trade.....	25.6	1 ●◆
2.1.2 Government funding/pupil, secondary, % GDP/cap.....	21.5	47	5.3.3 ICT services imports, % total trade.....	1.6	37
2.1.3 School life expectancy, years.....	13.7	68	5.3.4 FDI net inflows, % GDP.....	3.7	41
2.1.4 PISA scales in reading, maths & science [Ⓔ]	412.7	58 ○	5.3.5 Research talent, % in business enterprise [Ⓔ]	12.3	63 ○
2.1.5 Pupil-teacher ratio, secondary.....	13.2	54			
2.2 Tertiary education.....	54.9	15 ●◆	 Knowledge & technology outputs	33.5	33 ◆
2.2.1 Tertiary enrolment, % gross.....	44.1	64	6.1 Knowledge creation.....	8.5	75
2.2.2 Graduates in science & engineering, %.....	33.8	4 ●◆	6.1.1 Patents by origin/bn PPP\$ GDP.....	1.3	59
2.2.3 Tertiary inbound mobility, %.....	9.3	21 ◆	6.1.2 PCT patents by origin/bn PPP\$ GDP.....	0.2	57
2.3 Research & development (R&D).....	36.7	30 ◆	6.1.3 Utility models by origin/bn PPP\$ GDP.....	0.1	52 ○
2.3.1 Researchers, FTE/mn pop. [Ⓔ]	2,274.0	35 ◆	6.1.4 Scientific & technical articles/bn PPP\$ GDP.....	8.6	58
2.3.2 Gross expenditure on R&D, % GDP [Ⓔ]	1.3	23 ◆	6.1.5 Citable documents H index.....	16.1	43
2.3.3 Global R&D companies, top 3, mn US\$.....	39.8	38 ◆	6.2 Knowledge impact.....	46.8	25 ◆
2.3.4 QS university ranking, average score top 3*.....	49.3	25 ◆	6.2.1 Growth rate of PPP\$ GDP/worker, %.....	3.6	14 ●
			6.2.2 New businesses/th pop. 15-64.....	2.3	46
 Infrastructure	50.4	43 ◆	6.2.3 Computer software spending, % GDP.....	0.4	29 ◆
3.1 Information & communication technologies (ICTs).....	67.6	42	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....	12.0	25
3.1.1 ICT access*.....	69.3	56	6.2.5 High- & medium-high-tech manufactures, %.....	0.4	14 ◆
3.1.2 ICT use*.....	61.7	43 ◆	6.3 Knowledge diffusion.....	45.1	13 ●◆
3.1.3 Government's online service*.....	71.7	40	6.3.1 Intellectual property receipts, % total trade.....	0.1	65
3.1.4 E-participation*.....	67.8	47	6.3.2 High-tech net exports, % total trade.....	33.3	1 ●◆
3.2 General infrastructure.....	45.5	42	6.3.3 ICT services exports, % total trade.....	1.3	76
3.2.1 Electricity output, kWh/cap.....	4,949.7	42	6.3.4 FDI net outflows, % GDP.....	3.9	17 ●◆
3.2.2 Logistics performance*.....	63.0	31 ◆			
3.2.3 Gross capital formation, % GDP.....	25.5	34	 Creative outputs	35.0	47
3.3 Ecological sustainability.....	38.0	61	7.1 Intangible assets.....	45.7	52
3.3.1 GDP/unit of energy use.....	8.8	63	7.1.1 Trademarks by origin/bn PPP\$ GDP.....	21.5	84 ○
3.3.2 Environmental performance*.....	59.2	66	7.1.2 Industrial designs by origin/bn PPP\$ GDP.....	0.8	74
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....	2.7	39	7.1.3 ICTs & business model creation [†]	76.4	20 ◆
			7.1.4 ICTs & organizational model creation [†]	72.5	18 ◆
 Market sophistication	57.1	22 ◆	7.2 Creative goods & services.....	41.7	13 ●◆
4.1 Credit.....	45.1	41 ◆	7.2.1 Cultural & creative services exports, % total trade.....	n/a	n/a
4.1.1 Ease of getting credit*.....	80.0	18	7.2.2 National feature films/mn pop. 15-69.....	3.7	51
4.1.2 Domestic credit to private sector, % GDP.....	123.9	18 ◆	7.2.3 Entertainment & Media market/th pop. 15-69.....	10.6	35 ◆
4.1.3 Microfinance gross loans, % GDP [Ⓔ]	0.1	54	7.2.4 Printing & other media, % manufacturing.....	0.9	65 ○
4.2 Investment.....	54.9	22 ◆	7.2.5 Creative goods exports, % total trade.....	10.1	3 ●◆
4.2.1 Ease of protecting minority investors*.....	80.0	4 ●◆	7.3 Online creativity.....	7.0	61
4.2.2 Market capitalization, % GDP.....	128.8	6 ●◆	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69.....	6.2	52
4.2.3 Venture capital deals/bn PPP\$ GDP.....	0.0	58 ○	7.3.2 Country-code TLDs/th pop. 15-69.....	4.3	56
4.3 Trade, competition, & market scale.....	71.4	28	7.3.3 Wikipedia edits/mn pop. 15-69.....	9.4	65
4.3.1 Applied tariff rate, weighted mean, %.....	3.7	74	7.3.4 Mobile app creation/bn PPP\$ GDP.....	11.4	57
4.3.2 Intensity of local competition [†]	74.0	32			
4.3.3 Domestic market scale, bn PPP\$.....	926.1	25			

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question.

Ⓔ indicates that the country'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; see page 75 of this appendix for details.