The Global Innovation Index (GII) is a ranking of world economies based on 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 Malaysia over the past three years, noting that data availability and the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Malaysia’s ranking in the GII 2019 is between 34 and 36.

### Malaysia’s Rankings, 2017 - 2019

<table>
<thead>
<tr>
<th></th>
<th>GII</th>
<th>Innovation Inputs</th>
<th>Innovation Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>35</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>2018</td>
<td>35</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>2017</td>
<td>37</td>
<td>36</td>
<td>39</td>
</tr>
</tbody>
</table>

- Malaysia performs better in Innovation Inputs than Outputs.
- This year Malaysia ranks 34th in Innovation Inputs, the same as last year and better compared to 2017.
- As for Innovation Outputs, Malaysia ranks 39th. This position is the same as last year and compared to 2017.

Malaysia ranks **35th** among the 129 economies featured in the GII 2019.

Malaysia ranks **2nd** among the 34 upper middle-income economies.

Malaysia ranks **8th** among the 15 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 considered Innovation under-performers relative to GDP.

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

GII scores and GDP per capita in PPP US$ (bubbles sized by population)
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

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

Innovation input/output performance by income group, 2019

Source: Global Innovation Index Database, Cornell, INSEAD, and WIPO, 2019.
BENCHMARKING MALAYSIA TO OTHER UPPER MIDDLE-INCOME ECONOMIES AND THE SOUTH EAST ASIA, EAST ASIA, AND OCEANIA REGION

Malaysia’s scores in the seven GII pillars

Upper middle-income economies

Malaysia has high scores in all the 7 GII pillars, which are above the average of the upper middle-income group.

South East Asia, East Asia, and Oceania Region

Compared to other economies in South East Asia, East Asia, and Oceania, Malaysia performs above average in 1 out of the 7 GII pillars: Human capital & research.

Top ranks are found in sub-pillars Tertiary education, Knowledge absorption, Knowledge impact, Knowledge diffusion, and Creative goods & services where the country ranks in the top 25 worldwide.
OVERVIEW OF MALAYSIA’S RANKINGS IN THE 7 GII AREAS

Malaysia performs the best in Market sophistication and its weakest performance is in Creative outputs.

MALAYSIA’S INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of Malaysia’s strengths and weaknesses in the GII 2019.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code</strong></td>
<td><strong>Indicator name</strong></td>
</tr>
<tr>
<td>2.2.2</td>
<td>Graduates in science &amp; engineering, %</td>
</tr>
<tr>
<td>2.3.4</td>
<td>QS university ranking, average score top 3*</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Ease of protecting minority investors*</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Market capitalization, % GDP</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Intensity of local competition†</td>
</tr>
<tr>
<td>5.2.1</td>
<td>University/industry research collaboration†</td>
</tr>
<tr>
<td>5.2.2</td>
<td>State of cluster development†</td>
</tr>
<tr>
<td>5.3.2</td>
<td>High-tech imports, % total trade</td>
</tr>
<tr>
<td>6.3.2</td>
<td>High-tech net exports, % total trade</td>
</tr>
<tr>
<td>7.1.4</td>
<td>ICTs &amp; organizational model creation†</td>
</tr>
<tr>
<td>7.2</td>
<td>Creative goods &amp; services</td>
</tr>
<tr>
<td>7.2.5</td>
<td>Creative goods exports, % total trade</td>
</tr>
</tbody>
</table>

*The highest possible ranking in each pillar is 1.
**STRENGTHS**

- GII strengths for Malaysia are found in five of the seven GII pillars.
- In Human capital & research (33), Malaysia’s strengths are two important indicators: Graduates in science & engineering (8) and Quality of universities (17).
- In Market sophistication (25), Malaysia presents three GII strengths: indicators Ease of protecting minority investors (2), Market capitalization (6), and Intensity of local competition (17).
- In Business sophistication (36), relative strengths of the country are indicators University-industry research collaboration (8), State of cluster development (8), and High-tech imports (3).
- In Knowledge & technology outputs (34), Malaysia’s strength is indicator High-tech exports, where the country ranks 1st in the world.
- In Creative outputs (44), GII strengths for the country are sub-pillar Creative goods & services (11) as well as indicators ICTs & organizational model creation (17) and Creative goods exports, where Malaysia is world leader.

**WEAKNESSES**

- Malaysia’s weaknesses in the GII are found in five of the seven GII pillars.
- In Institutions (40), Malaysia’s weaknesses are indicators Cost of redundancy dismissal (100) and Ease of starting a business (94).
- In Human capital & research (33), two weaknesses are found in indicators School life expectancy (76) and PISA results (58).
- In Business sophistication (36), relative weaknesses of Malaysia are indicators Firms offering formal training (77) and R&D financed by abroad (91).
- In Knowledge & technology outputs (34), only one indicator – Utility models by origin (48) – is a relative weakness for the country.
- In Creative outputs (44), relative weaknesses of Malaysia are indicators Trademarks by origin (87), Industrial designs by origin (83), and Printing & other media (72).
### DMC (Demand Management Committee) Requirements

- **2.1.1** Political environment
- **2.1.2** Government effectiveness
- **2.1.3** Rule of law
- **2.1.4** Cost of redundancy dismissal, salary weeks
- **2.2.1** Business environment
- **2.2.2** Ease of starting a business
- **2.2.3** Ease of resolving insolvency
- **2.3.1** Education
- **2.3.2** Graduates in science & engineering
- **2.3.3** Global R&D companies, avg. exp. top 3
- **2.3.4** Q5 university ranking, average score top 3

### HUMAN CAPITAL & RESEARCH

- **2.1** Education
- **2.2** Tertiary education
- **2.3** Research & development (R&D)

### INFRASTRUCTURE

- **3.1** Information & communication technologies (ICTs)
- **3.2** General infrastructure
- **3.3** Ecological sustainability

### MARKET SOPHISTICATION

- **4.1** Credit
- **4.2** Investment
- **4.3** Trade, competition, & market scale

### BUSINESS SOPHISTICATION

- **5.1** Knowledge workers
- **5.2** Innovation linkages
- **5.3** Knowledge absorption

### KNOWLEDGE & TECHNOLOGY OUTPUTS

- **6.1** Knowledge creation
- **6.2** Knowledge impact
- **6.3** Knowledge diffusion

### CREATIVE OUTPUTS

- **7.1** Intangible assets
- **7.2** Creative goods & services
- **7.3** Online creativity

**NOTES:** ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * 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.
Malaysia has complete data coverage in the GII 2019.

The following table lists data that are outdated for Malaysia.

### Outdated data

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Country year</th>
<th>Model year</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.4</td>
<td>PISA scales in reading, maths &amp; science</td>
<td>2012</td>
<td>2015</td>
<td>OECD Programme for International Student Assessment (PISA)</td>
</tr>
<tr>
<td>2.3.1</td>
<td>Researchers, FTE/mn pop.</td>
<td>2016</td>
<td>2017</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Gross expenditure on R&amp;D, % GDP</td>
<td>2016</td>
<td>2017</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
</tr>
<tr>
<td>4.1.3</td>
<td>Microfinance gross loans, % GDP</td>
<td>2011</td>
<td>2017</td>
<td>Microfinance Information Exchange</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Applied tariff rate, weighted mean, %</td>
<td>2016</td>
<td>2017</td>
<td>World Bank</td>
</tr>
<tr>
<td>5.1.1</td>
<td>Knowledge-intensive employment, %</td>
<td>2016</td>
<td>2017</td>
<td>Source: International Labour Organization</td>
</tr>
<tr>
<td>5.1.3</td>
<td>GERD performed by business, % GDP</td>
<td>2016</td>
<td>2017</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
</tr>
<tr>
<td>5.1.5</td>
<td>Females employed w/advanced degrees, %</td>
<td>2016</td>
<td>2017</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>5.3.5</td>
<td>Research talent, % in business enterprise</td>
<td>2016</td>
<td>2017</td>
<td>UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators</td>
</tr>
<tr>
<td>6.2.5</td>
<td>High- &amp; medium-high-tech manufactures, %</td>
<td>2015</td>
<td>2016</td>
<td>United Nations Industrial Development Organization</td>
</tr>
<tr>
<td>7.2.4</td>
<td>Printing &amp; other media, % manufacturing</td>
<td>2015</td>
<td>2016</td>
<td>United Nations Industrial Development Organization</td>
</tr>
</tbody>
</table>
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 2019, the GII presents its 12th edition devoted to the theme *Creating Healthy Lives—The Future of Medical Innovation.*

Recognizing that innovation is a key driver of economic development, the GII aims to provide a rich innovation ranking and 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 countries 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 includes 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 containing three sub-pillars.